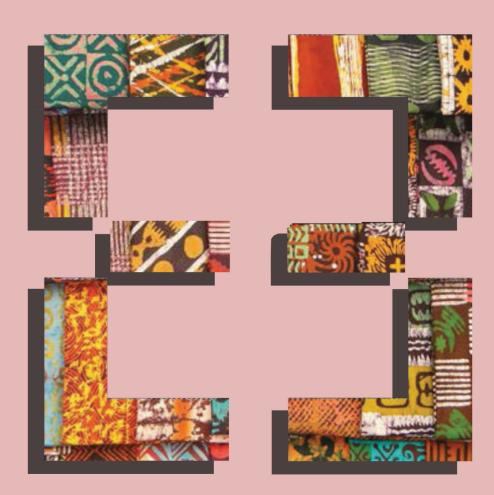
YEAR 2
SEMESTER 1

Four-Year B.Ed. Course Manual

ICT EDUCATIONAL AND INSTRUCTIONAL TECHNOLOGIES









The Government of Ghana









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 meet 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 these sets 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 copies 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 is approach used to produce these manual.

We are indebted to the Ministry of Education and the Ghana Tertiary Education Commission (GTEC) for the general support and specific helpful advice provided during production of the course manuals. Recognition and thanks must go to Chief Technical Advisor for T-TEL and Policy Advisor to the National Education Reform Secretariat, Akwasi Addae-Boahene, Prof. Mohammed Salifu, the Director General of GTEC and Mr. Jerry Sarfo the coordinator for the colleges of education, who in diverse ways supported during the course manual writing workshops.

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

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INTRODUCTION TO COURSE MANUALS

Welcome to this B.Ed. Course manual.

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

The manuals serve the following purposes:

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

Specifically, they also:

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

Who are course manuals for:

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

USING THIS MANUAL

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

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

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

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. 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

Course Details							
Course	Educa	Educational and Instructional Technologies					
name							
Pre-	Student teachers have taken the course 'Information and Communications Technology' which exposed them						
requisite	to Computer-based systems and their applications, implications and issues surrounding their use. With a						
	background information in the use of computers and serves to meet their general technology/computer						
	literac	y requiremen	it				
Course	200	Course		Credit	3	Semester	1
Level	Code Value						
Table of contents (To be provided)							

Goal for the Subject or Learning Area

This course is designed to cover the theories, frameworks, and practices of computer – and web-based applications in various instructional settings, paradigms, and research regarding the use of technologies in teaching. It also aims to help the student teachers refine, redefine, and reshape their perspectives and views of technology as they relate to the society, teaching, learning, and training.

Key contextual factors

There is a high mobile communication device ownership in the Ghanaian society. Most students and teachers have interest and experience in using these devices for social and personal interactions. However, the integration of ICT into teaching and learning is low in Ghanaian schools. Ghanaian schools can be categorized as low technology-rich learning environment particularly in the public schools.

The following affect effective teaching and account for this low integration of ICT in teaching and learning:

- There is an intra-national digital divide (Rich/Poor, Male/Female, Urban/Rural, SEN/Typical)
- Generally, there is low internet connectivity especially in the rural communities.
- Most schools lack computing facilities.
- Some schools do not have electricity supply
- Existing facilities do not favour people with disability
- Student teachers will be prepared with technology integration strategies in the classroom as well as the theories thereof.

Course Description

This course is designed to deepen student teachers' awareness of technology concepts and provide experiences that facilitate individual thinking. The course also seeks to introduce student teachers to a range of approaches used to integrate ICT tools across the curriculum; focusing on classrooms that integrate technology into teaching and learning, and research. Student teachers will be equipped with knowledge and skills required for effective integration of educational and instructional technologies in teaching and learning. Interactive discussions will be used to critically examine the Current Technological trends shaping education. Interactive multimedia presentations and video analysis will be used to evaluate the Cognitive Science and Research-Based attributes of effective technology enabled learning environments. These strategies must respond to inclusivity and equity. Assessment will be done through, observation, Video Analysis, individual and group project to synthesize knowledge and concepts. Assessment will also evaluate student teachers' ability to use self-help features to learn use of hardware and software (*National Teachers' Standard: 1a, 1b, 2c, 2e, 3a, 3b, 3c, 3d, 3e, 3h, 3i, 3k, 3n, 3p/NTECF: Pillar 1, 2 & 3, crosscutting issues; Core skills, Professional values and attitudes, Assessment)*

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 Select and use appropriate tools and technology resources to accomplish a variety of tasks. (CLO 5).

Collaboration is fostered through assigning group projects and presentation of various topics across units and Participation in collaborative problem-solving activities(CLO 3)

Communicative skills of student teachers would be enhanced, present a project report on compliance with acceptable use policies and other guidelines (CLO 3)

Personal development & Enquiry skills in action research would be fostered acquiring skills for a variety of technologies for solving problems (CLO 2, CLO 4).

Respect for diversity and Individual differences would be engendered in student teachers by applying appropriate interventions, examining and reflecting their usefulness (CLO 1, CLO 2, CLO 5)

Honesty and Accountabilitywould be fostered bystating the regulations regarding fair use as well as, presentation of a project report on compliance with acceptable use policies and other guidelines.(CLO 5)

Course Learning Outcomes	Learning Indicators
Demonstrate proficiency in the use of educational/instructional technology NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1& 3	 Describe how technology impacts learning Explore software and hardware to illustrate them as an educational / instructional technology Describe compatibility issues between types of technology Use self-help features to learn the use of software
Demonstrate knowledge of ethical, cultural, and societal issues related to technology <i>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1, 3, & 4</i> Demonstrate knowledge and Practice responsible use of technology systems, information, and software. <i>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&3</i>	 Explain the current changes in information technologies List policy documents that govern technology in education Describe career opportunities in technology related systems State the regulations regarding fair use. Present a project report on compliance with acceptable use policies and other guidelines.
Demonstrate knowledge and skills in the use of technology to locate, evaluate, and collect information from a variety of sources NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&3	 Use spreadsheet to evaluate information Use internet and other electronic resources to locate information in real time
Demonstrate understanding and apply technology resources for solving educational problems, and making informed decisions. NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&3	 Employ technology in development strategies for solving problems Use variety of technologies for solving problems Use content-specific tools, software, and simulations such as environmental probes, graphic calculators, exploratory environments, and web tools. Participate in collaborative problem-solving activities Select and use appropriate tools and technology resources to accomplish a variety of tasks. Plan and implement lessons and strategies that integrate technology to meet the diverse needs of learners in a variety of educational settings

Course Content

Unit/ Week	Topic	Sub-topic (if any)	Teaching and learning activity to achieve the learning outcomes
1	Current Technological trends shaping education I	1.1 Introduction to the Course Manual 1.2 Current Trends Flipped learning/Blended Learning Remote learning	 Seminars (Talk for Learning)& interactive discussions (Games) to critically examine Current Technological trends shaping education, field trips, interactive multimedia presentations, video analysis (eg. From YouTube) to evaluate the Current Technological trends shaping education in educational institutions. These strategies must respond to inclusivity and equity (ie ICT as a tool for expanding learning to diverse learners eg. People with visual impairment, dyslexia, dysgraphia). Using Creative Approaches (such as, games, storytelling, role paly, songs and modelling) to stimulate and involve students when they interact with other students or to teach. PD Guide Themes 1,2,3,4,5 & 6
2	Current Technological trends shaping education II	2.1 Gamification2.2 Mind Mapping2.3 Digital Textbooks2.4 Big Data2.5 Social Media	 Seminars (Talk for Learning)& interactive discussions (Games) to critically examine Current Technological trends shaping education, field trips, interactive multimedia presentations, video analysis (eg. From YouTube) to evaluate the Current Technological trends shaping education in educational institutions. Using Creative Approaches (such as, games, storytelling, role paly, songs and modelling) to stimulate and involve students when they interact with other students or to teach. PD Guide Themes 1,2,3,4,5 & 6

3	Classroom technology integration I	2.1 Why integrate technology	1.	Inquiry-based learning (Questioning), seminars (Talk for Learning) interactive discussions (Games), interactive multimedia presentations to examine the Practical Classroom realities technology integration in Education, field trips to observe the practices, tutorial and practical sessions, video analysis eg YouTube to discuss Practical Classroom realities technology integration in education.
			2.	Using Creative Approaches (such as, games, storytelling, role paly, songs and modelling) to stimulate and involve students when they interact with other students or to teach. <i>PD Guide Themes</i> 1,2,3,4,5 & 6
4	Classroom technology integration II	1.1 Integrate technology in the classroom 1.2 Ways to integrate	1	Inquiry-based learning (Questioning), seminars (Talk for Learning) interactive discussions (Games), interactive multimediapresentations to examine the Practical Classroom realities technology integration in Education, field trips to observe the practices, tutorial and practical sessions, video analysiseg YouTube to discuss Practical Classroom realities technology integration in education.
			2	These strategies must respond to inclusivityand equity (ie ICT as a tool for expandinglearning to diverse learners eg. People withvisual impairment, dyslexia, dysgraphia). Identify the instances when personal, cultural, and institutionalized discriminationare creating and/ or sustaining disadvantagesfor some student-teachers.
			3	Using Creative Approaches (such as, games, storytelling, role paly, songs and modelling) to stimulate and involve students when theyinteract with other students or to teach. <i>PD Guide Themes</i> 1,2,3,4,5 & 6
5	Classroom technology integration III	5.1 Lesson plan that integrate technology	2	Inquiry-based learning (Questioning), seminars (Talk for Learning) interactive discussions (Games), interactive multimediapresentations to examine the PracticalClassroom realities technology integration inEducation, field trips to observe the practices, tutorial and practical sessions, video analysiseg YouTube to discuss Practical Classroomrealities technology integration in education. Using Creative Approaches (such as, games, storytelling, role paly, songs and modelling) to stimulate and involve students when theyinteract with other students or to
6	Classroom technology	6.1 Integrating	1	teach. PD Guide Themes 1,2,3,4,5 & 6 Inquiry-based learning (Questioning), seminars (Talk for
	integration IV	technology into teaching	3	Learning) interactive discussions (Games), interactive multimediapresentations to examine the PracticalClassroom realities technology integration inEducation, field trips to observe the practices,tutorial and practical sessions, video analysiseg YouTube to discuss Practical Classroomrealities technology integration in education. These strategies must respond to inclusivityand equity (ie ICT as a tool for expandinglearning to diverse learners eg. People withvisual impairment, dyslexia, dysgraphia).Identify the instances when personal,cultural, and institutionalized discriminationare creating and/ or sustaining disadvantagesfor some student-teachers. Using Creative Approaches (such as, games, storytelling,

				role paly, songs and modelling)to stimulate and involve students when theyinteract with other students or to teach. PD Guide Themes 1,2,3,4,5 & 6
7	Cognitive Science and Research-Based attributes of effective learning environments I	7.1 Learners and Learning 7.1 Development and Learning competencies 1.1 transfer of Learning 1.2 Competent and Expert performance	2	Project- and problem- Based (Group Work), and inquiry-based learning (Questioning) tolllustrate Cognitive Science and Research-Based attributes of effective learningenvironments, seminars (Talk for Learning), interactive discussions (Games), interactivemultimedia presentations, tutorial andpractical sessions, video analysis egYouTube to discuss the Cognitive Scienceand Research-Based attributes of effectivelearning environments. Using Creative Approaches (such as, games, storytelling, role paly, songs and modelling) to stimulate and involve students when theyinteract with other studentstoteachstudent teachers to create a wiki ofobservation of schools visit. <i>PD Guide Themes</i> 1,2,3,4,5 & 6
8	Cognitive Science and Research-Based attributes of effective learning environments II	1.1 Teachers and Teaching 1.2 Teaching for InDepth Learning 1.3 Expert Teachers	2	Project- and problem- Based (Group Work), and inquiry-based learning (Questioning) tolllustrate Cognitive Science and Research-Based attributes of effective learningenvironments, seminars (Talk for Learning), interactive discussions (Games), interactivemultimedia presentations, tutorial andpractical sessions, video analysis egYouTube to discuss the Cognitive Scienceand Research-Based attributes of effectivelearning environments. Using Creative Approaches (such as, games, storytelling, role paly, songs and modelling) to stimulate and involve students when theyinteract with other studentstoteachstudent teachers to create a wiki ofobservation of schools visit. PD Guide Themes 1,2,3,4,5 & 6
9	Cognitive Science and Research-Based attributes of effective learning environments III	1.1 Learning Environments 1.2 Tools of Technology 1.3 Assessment to support Learning 1.4 Learning and Connections to Community	2	Project- and problem- Based (Group Work), and inquiry-based learning (Questioning) tolllustrate Cognitive Science and Research-Based attributes of effective learningenvironments, seminars (Talk for Learning), interactive discussions (Games), interactivemultimedia presentations, tutorial andpractical sessions, video analysis egYouTube to discuss the Cognitive Scienceand Research-Based attributes of effectivelearning environments. Using Creative Approaches (such as, games, storytelling, role paly, songs and modelling) to stimulate and involve students when theyinteract with other studentstoteachstudent teachers to create a wiki ofobservation of schools visit. PD Guide Themes 1,2,3,4,5 & 6
10	Equity in Using Technology in the Classroom I	10.1 Issues relating to Equity: Standard Based Reforms Inclusion, Cultural and Linguistic Diversity 10.2 Instructional approaches that support Inclusion 10.3 Differentiated Instruction	2	Project- and problem- Based (Group Work) to apply Equity of Using Technology in the Classroom as it relates to socioeconomic, cultural and special needs differences in the classroom, and inquiry-based learning (Questioning), seminars (Talk for Learning) to , interactive discussions (Games), interactive multimedia presentations, tutorial and practical sessions, video analysis eg YouTube to identify and discuss and practice Equity of Using Technology in the Classroom as it relates to socioeconomic, cultural and special needs differences in the classroom. Identify the instances when personal, cultural, and institutionalized discrimination are creating and/ or

		10.4 Universal Design for Learning 10.5 Multicultural education 10.6 Sheltered Instruction		sustaining disadvantages for some student-teachers. Using Creative Approaches (such as, games, storytelling, role paly, songs and modelling) to stimulate and involve students when theyinteract with other students to teach. PD Guide Themes 1,2,3,4,5 & 6
11	Equity in Using Technology in the Classroom II	11.1 Available methods Methods of Instruction, Materials of Instruction, Environment of Instruction, Content of Instruction, Collaboration for Instruction, Assessment in Instruction	2	Project- and problem- Based (Group Work) to apply Equity of Using Technology in the Classroom as it relates to socioeconomic, cultural and special needs differences in the classroom, and inquiry-based learning (Questioning), seminars (Talk for Learning) to , interactive discussions (Games), interactive multimedia presentations, tutorial and practical sessions, video analysis eg YouTube to identify and discuss and practice Equity of Using Technology in the Classroom as it relates to socioeconomic, cultural and special needs differences in the classroom. Using Creative Approaches (such as, games, storytelling, role paly, songs and modelling) to stimulate and involve students when they Interact with other students to teach. PD Guide Themes 1,2,3,4,5 & 6
12	Issues in Digital Technology in education	12.1 Impact on Education 12.2 Issues and Implications 12.3 The Future	1	Project- and problem- Based learning andpractical sessions (Individual and GroupWork) to create educational artefacts like e-portfolios, seminars (Talk for Learning), and interactive multimedia presentations, videoanalysiseg YouTube to discuss projectartefacts.

Teaching and Learning Strategies

- Project- and problem- Based learning and practical sessions
- Individual and group presentations
- Concept cartoons and concept maps
- Cooperative learning
- Think-pair-share
- Talk for learning approaches- always, sometimes, never true, convince yourself, convince a friend; pyramid discussion etc

Course Assessment Components

Component 1: Portfolio Assessment: (30% overall score)

- Selected items of students work (3 of them 10% each)- 30%
- Midterm Assessment 20%
- Reflective Journal 40%
- Organisation of subject portfolio 10% (how it is presented/organized)

Summary of Assessment Method:

Create e-portfolios to contain

- a. Artefacts from practical work
- b. Reflective notes of their observation during school visit relating to the use and application of educational and instructional technologies.
- c. Presentation of Video Analysis, individual and group project to synthesize and evaluate student teachers' ability to use self-help features to learn use of hardware and software. Eg. Present a project report on compliance with acceptable use policies and other guidelines.
- d. Tests/quizzes and class exercises to examine student teachers' knowledge of current changes in information technologies. Eg. Describe how technology impacts learning, explore at least two (2) software and hardware and develop one (1) to illustrate educational / instructional technology, Describe three compatibility issues between types of technology
- e. One (1) test/ Assignment/group work/quiz/class exercise to evaluate their understanding of multimedia authoring concepts

Weighting: 30%

Assesses Learning Outcomes:

CLO3. CLO4. CLO5

NTS: 1a, 1b, 1d, 2c, 2e, 3b, 3c, 3i/NTECF: Pillar 1& 3

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%

Summary of Assessment Method:

a. Project-/problem-/inquiry-based assessment: Identify, investigate, propose and create solutions using the educational / instructional technologies (student Teachers) have been introduced to. E.g. explore the potential of the internet as a means of personal learning and the respectful exchange of ideas and production, employ technology in development strategies for solving problems.

Weighting: 30%

Assesses Learning Outcomes:

CLO3, CLO4, CLO5

NTS: 1a, 1b, 1d, 2c, 2e, 3b, 3c, 3h, 3i /NTECF: Pillar 1& 3

Component 3: End of Semester Examination – 40% overall

Summary of Assessment Method:

A combination of any of these assessment modes;

a. Written examination to evaluate student teachers' knowledge of the Essential concepts of Educational and Instructional technologies. Eg. Mention two (2) policy documents that govern technology, State two (2) current changes in information technologies, List five (5) career opportunities in technology related systems.

Weighting: 40 %

Assesses Learning Outcomes:

CLO1, CLO2, CLO3

NTS: 1a, 1b, 1d, 2c, 2e, 3b, 3c, 3h, 3i

- 1. a) Critically and collectively reflects to improve teaching and learning.
- 1. b) Improves personal and professional development through lifelong learning and Continuous Professional Development.
- 1. d) Is guided by legal and ethical teacher codes of conduct in his or herdevelopment as a professional teacher.
- 2.c) Has secure content knowledge, pedagogical knowledge and pedagogical

content knowledge for the school and grade they teach in.

2.e) Understands how children develop and learn in diverse contexts and applies

this in his or her teaching.

- 3.b) Carries out small-scale action research to improve practice.
- 3.c) Creates a safe, encouraging learning environment.
- 3.h) Sets meaningful tasks that encourages learner collaboration and leads to purposeful learning.
- 3.i) Explains concepts clearly using examples familiar to students.

Required Reading and Reference List

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Additional Reading List

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Moore, M. & Kearsley, G. (2005). Distance education: A systems view. Belmont, CA: Thomson Wadsworth.

Robertson, M., Webb, I., &Fluck, A. (2007). Seven steps to ICT integration. Camberwell, London: ACER

Teaching and Learning resources

- Smartphones
- Laptops
- Desktop computers
- Tablets
- TV and Radio
- Open Educational Resources (Including: YouTube, MOOCS-Udemy/coursera, khan academy,

- TESSA)
- The iBox (CENDLOS)
- Productivity tools
- Subject based application software
- Instructional Laboratories (with multimedia equipment and smartboards)
- Google Classroom

Course related professional development for tutors/ lecturers

- Development of Concept Maps/ Concept cartoons Charts/ technical/action research report writing.
- Appreciating the place of Cross cutting issues in the CLOs and Teaching -Learning Activities/ Assessment
 component requirement for active learning/ model teaching to reflect the desired PCK students teachers requires
 to learn for teaching.

Title of Lesson	Current Technological tre	nds shaping educa	tion Lesson D	Ouration 3	B Hours	
Lesson description Previous student teacher knowledge, prior learning (assumed) Possible barriers to learning in the lesson Lesson Delivery – chosen to support students in achieving the outcomes Lesson Delivery – main mode of delivery chosen to support	The lesson introduces student teachers to current e learning modes with further explanation of current changes in information technologies. Student teachers would be able to describe career opportunities in technology related systems. This first lesson introduces student teachers to the course learning outcomes and the 3 assessment components of the course. Student teachers have taken the course 'Information and Communications Technology' which exposed them to Computer-based systems and their applications, implications and issues surrounding their use. With a background information in the use of computers and serves to meet their general technology/computer literacy requirement Some student teachers might not have had knowledge and understanding of current technological trends shaping education. Face- Practical Work Seminars Independent Study [] Practicum opportunitie s [v] Face- Leaning [] Face-to-Face: lecturette, discussions and other talk for learning approaches should be					
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	employed Practical Activity: Individual and group activities involving surfing the internet for current technological trends shaping education. E-learning opportunities: information and other related material would be gleaned from the internet using their phones and other digital devices. Group work: put student teachers in small groups to examine various issues both in a face to face class and also online. Create a social media group for each group (e.g. Facebook, WhatsApp, Telegram) to enable them interact outside class using their mobile or any other suitable device Independent study: any of the above methods will include an element of independent study to enable student personally engage with relevant content. Tutors to direct student teachers to Open Educational Resources (e.g. YouTube, MOOCS-Udemy/coursera, khan academy, TESSA) to support independent study.					
Learning Outcomes for the lesson, picked and developed from the course specification Learning indicators for each learning outcome	Learning Outcomes Learning Indicators Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?					
	Demonstrate knowledge Practice responsible use of technology systems, information, and software NTS: 1a, 1d, 2c, 2e/NTEC Pillar 1& 3	technologin e-lear Explain r	ogy trends ning remote, and earning ish n flipped ided	equity (ie IO expanding diverse lead People with impairment dysgraphia Identify the	inclusivity and CT as a tool for learning to rners eg. n visual t, dyslexia,	

				and institutionalized discrimination are creating and/ or sustaining disadvantages for some student- teachers
Topic Title: Current Technological Trends shaping education I	Sub-topic	Time and stage		activities to achieve outcomes ry mode selected. Teacher-led
	Introduction to Course Manual	30 minutes	Teaching Activities: Face-to-face: Tutor discusses the course manual with student teachers through questioning after making student teachers aware of the transition from Year 2 semester 1 courses and later spells out some of the expectations of the course to them. Some of the expectations are as follows: That student teachers will be able to; Describe how technology impacts learning Explore software and hardware to illustrate them as an educational / instructional technology Describe compatibility issues between types of technology Use self-help features to learn the use of software among others.	Student Activity Face-to-Face Student teachers answer tutor's questions to be abreast with the expectations of the course, which includes modes of assessment and the week by week activities
	• Introduc tion	20 minutes	Face-to-face Tutor through questioning ask student teachers to mention some of the trends on technology in the 21 st century	Face-to-Face Student Teachers answer tutor's questions to set the pace for the week's lesson.
	• Current Trends	30minutes	Face-to-face: Tutor-led discussion on current Technological trends shaping education. Using Creative	Face-to-Face & e-learning Student teachers surf the internet with their mobile phones for relevant information on current Technological trends shaping education. Student teachers

		Approaches (such as, games, storytelling, role paly, songs and modelling) PD Guide Theme 1. Eg. What are the current trends shaping technology https://www.youtube.com/watch?v=Y7OCKDX3ylg	report their findings through small group presentations PD Guide Theme 4. Eg. What are the current trends shaping technology
Flipped learning/ Blended Learning	60 min	Face -to-Face & Seminar Shows student teachers short videos on Flipped learning/ Blended learning. Using Creative Approaches (such as, games, storytelling, role paly, songs and modelling). PD Guide Theme 1. Eg. 1. Is flipped learning blended learning? ps://www.youtube.com /watch?v=paQCE5833 4M	Face-to- Face & Seminar Student teachers watch videos, make notes and do group presentations in class. Eg. 1. Is flipped learning blended learning?
Remote learning	30 min	Practical activity Guides student teachers to discuss Remote learning and its importance. Using Creative Approaches (such as, games, storytelling, role paly, songs and modelling)PD Guide Theme 1 Eg. 1. What is the difference between Remote Learning and Classroom (Traditional Classroom) learning? 2. Merits and Demerits of Remote Learning https://www.youtube .com/watch?v=lburieq K9WU	Practical activity Student teachers exhibit and discuss Remote learning and make notes and do group presentations in class. Eg. 1. What is the difference between Remote Learning and Classroom (Traditional Classroom) learning? 2. Merits and Demerits of Remote Learning
Lesson Closure	10 Minutes	Guide student teachers to recap their discussion and the points identified in their discussions.	Student teachers recap the ideas/concepts learnt in the lesson

Lesson assessments –	In-lesson Assessment (Assessment of)
evaluation of learning: of, for	A combination of any of these assessment modes (Test/Assignment to go into Student
and as learning within the	teacher's portfolio);
lesson	Tests/quizzes and class exercises to examine student teachers' knowledge of
	current changes in information technologies. Eg. Describe how technology
	impacts learning, explore at least two (2) software and hardware and develop
	one (1) to illustrate educational / instructional technology, Describe three
	compatibility issues between types of technology
	Assignments, group work to analyse and evaluate the need for laws and policies
	to govern technology. Eg. Mention two (2) policy documents that govern
	technology, State two (2) current changes in information technologies, List five
	(5) career opportunities in technology related systems.
	Assesses Learning Outcomes: CLO1, CLO2, CLO3.NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1& 3
Instructional Resources	• Smartphones
mistractional Resources	• Laptops
	Desktop computers
	Tablets
	TV and Radio
	Open Educational Resources (Including: YouTube, MOOCS-Udemy/coursera,
	khan academy,
	• TESSA)
	The iBox (CENDLOS)
	Productivity tools
	Subject based application software
	Instructional Laboratories (with multimedia equipment and smartboards)
	xi. Google Classroom
Required Text (core)	Abbott, C. (2001). ICT: Changing education. London: Routledge-Falmer.
	Januszewski, A. (2001). Educational technology: The development of a concept.
	Englewood, CO: Libraries Unlimited.
	Jonassen, D. H., & Land, S. M. (1999). <i>Theoretical foundations of learning environments</i> . Mahwah, NJ: Lawrence Erlbaum.
Additional Reading List	Banks, J.A., & Banks, C.M. (2009). Multicultural education: Issues and perspectives.
Additional fiedding List	Indianapolis, IN: Wiley
	Gregory, G.H., &Chapman, C.M (2006). Differentiated instructional strategies: One size
	doesn't fit all.
	Thousand Oaks, CA: Corwin
	Monteith, M. (2004). ICT for curriculum enhancement. Bristol: Intellect.
	Moore, M. &Kearsley, G. (2005). Distance education: A systems view. Belmont, CA:
	Thomson Wadsworth.
	Robertson, M., Webb, I., &Fluck, A. (2007). Seven steps to ICT integration. Camberwell,
	London: ACER T.T. (2015) Questioning RD Guide for Tutors Handhook
	T-TEL (2015), Questioning, PD Guide for Tutors Handbook, T-TEL (2015), Creative Approaches, PD Guide for Tutors Handbook
	T-TEL (2016), Group Work, PD Guide for Tutors Handbook
CPD needs	Seminar on Current Technological trends shaping education
	Writing reflective notes
	Participating in a community of practice/conferences and accessing online
	magazines (E-zines) & journals to obtain up to date content.
	Team teaching and lesson observation to improve instructional strategies &
	practices.
	Supporting student teachers in collaborating in designing and developing a wiki.

Title of Lesson	Current Technolog	ical Trends sl	Lesson	Duration	3 Hours				
Lesson description	The lesson introduc	res student te	eachers to th	e description	of compatibility is	l sues hetween			
2000011 000011 pt.011	types of technology								
	illustrate them as a	=			="				
Previous student teacher	Student teachers h			_		cal Trends			
knowledge, prior learning	shaping education	•		·	J				
(assumed)			•						
Possible barriers to learning in	Some student teac	hers might no	t have had k	nowledge and	d understanding of	current			
the lesson	technological trend	ds shaping ed	ucation.						
Lesson Delivery – chosen to	Face- Practica								
support students in achieving	to-face Activity	Based	[]	nt Study []	opportunities				
the outcomes	[٧]	Leaning			[٧]				
Lesson Delivery – main mode	Face-to-face - Both	n teacher and	student-led	approaches s	uch as discussions	of varying			
of delivery chosen to support	kinds should be use	ed.							
student teachers in achieving	E-learning opportu	ı nities - Stude	nt teachers v	vould watch v	ideos on YouTube,	/videos about			
the learning outcomes.	compatibility issues	s between ty _l	oes of techno	ology.					
	Seminars – Both in					_			
	Practical Activity-			w work samp	les of other studer	nt teachers to			
	explain progress or		-						
	Group work: put st		_	-					
	to face class and al								
	WhatsApp, Telegra	m) to enable	them intera	ct outside clas	s using their mobil	e or any other			
	suitable device	6.1							
	Independent study	•				•			
	study to enable stu	-							
	teachers to Open E				JOCS-Udemy/coul	rsera, knan			
	academy, TESSA) to		ependent sti	iay.					
Overarching outcome,	Student teachers w		ico of oduco	tional/instruc	tional tachnalagu	NTC. 1 ~ 1 d			
what you want the	Demonstrate profice 2c, 2e/NTECF: Pilla		use or educa	tional/ instruc	tional technology	N13: 1a, 1a,			
students to achieve, serves as basis for the	20, 20/NTECF. Pillu	1105							
learning outcomes. An									
expanded version of the									
description.									
description.									
Write in full aspects of the									
NTS addressed									
Learning Outcome for the	Learning	Learnin	g Indicators	Iden	tify which cross cu	itting issues –			
lesson, picked and	Outcomes	20011111	J		and transferable				
developed from the					sivity, equity and				
course specification					rsity.				
Learning indicators for	Demonstrate	Describ	e how techn		These strategies w	ill respond to			
each learning outcome	proficiency in the		s learning		inclusivity and equ	•			
8	use of	· ·	_		tool for expanding				
	 use of educational/ Explore software and educational/ hardware to illustrate tool for expanding learning to diverse learners eg. People with 								
	instructional them as an educational / visual impairment, dyslexia,								
	technology NTS: instructional technology dysgraphia).								
	1a, 1d, 2c,	 Describ 	Identify the instan	ces when					
	2e/NTECF: Pillar		etween type	•	personal, cultural,				
	1& 3	techno			institutionalized di				
			f-help featur	es to	are creating and/ o	or sustaining			
			ne use of sof		disadvantages for				
	teachers								

Topic Title: Current Technological Trends	Sub-topic	Stage/time	Teaching and learning activit depending on the delivery m collaborative group work or i	ode selected. Teacher-led
shaping education II			Teacher Activity	Student Activity
	Introduction	10 mins	Face-to-face Tutor through brainstorming ask student teachers to describe some of the compatibility issues between types of	Face-to-Face Student Teachers answer tutor's questions to set the pace for the week's lesson.
	Gamification	30 min	technology Face-to-face:	Face-to-face
			Guides student teachers to explore what Gamification means and why it is relevant in the teaching and learning process and which lessons can be supported in school. https://www.youtube.com/watch?v=wfivasin9j4	Student teachers explain gamification and discuss its importance in the teaching and learning process and which lesson can be supported by games. https://www.youtube.com/watch?v=wfivasin9j4
	Mind	60 min	e-learning opportunities	E-learning opportunities -
	Mapping Digital Textbooks	1 hour 10	Guides student teachers to use their mobile phones to search the internet for examples of digital textbooks after an explanation on what digital textbooks are. And discuss its merits and demerits as well as how to create digital textbooks https://www.youtube.com/watch?v=LUrd6n8oDV0 e-learning opportunities	Student teachers surf the net and YouTube/videos for examples of digital textbooks after an explanation on what digital textbooks are. Practical Activity
	Social Media	min 10 Minutes	Guides student teachers to use their mobile phones to search the internet for examples of how social media and big data are used to support learning and discuss its merits and demerits of those technologies. Practical Activity Guides student teachers to review work samples of other student teachers to explain progress or barriers to learning. https://www.youtube.com/watch?v= DEB96yIKOU Guide student teachers to	Student teachers put together points to guide them in the search of work samples of other learners on social media and write reflective notes on how big data can support learning.
	Closure	TO MINITES	recap their discussion and the points identified in their discussions.	ideas/concepts learnt in the lesson

Lesson assessments –	In-lesson Assessment (Assessment of)							
evaluation of learning: of, for	A combination of any of these assessment modes (Test/Assignment to go into Student							
and as learning within the	teacher's portfolio);							
lesson	Tests/quizzes and class exercises to examine student teachers' knowledge of							
100001	current changes in information technologies. Eg. Describe how technology							
	impacts learning, explore at least two (2) software and hardware and develop one							
	(1) to illustrate educational / instructional technology, Describe three							
	compatibility issues between types of technology							
	Assignments, group work to analyse and evaluate the need for laws and policies							
	to govern technology. Eg. Mention two (2) policy documents that govern							
	technology, State two (2) current changes in information technologies, List five (5)							
	career opportunities in technology related systems.							
	Assesses Learning Outcomes:							
	CLO1, CLO2, CLO3.NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1& 3							
Instructional Resources	Smartphones							
	• Laptops							
	Desktop computers							
	• Tablets							
	TV and Radio TV and Radio							
	Open Educational Resources (Including: YouTube, MOOCS-Udemy/coursera, kha							
	academy, • TESSA)							
	• TESSA) • The iBox (CENDLOS)							
	Productivity tools							
	 Productivity tools Subject based application software 							
	 Subject based application software Instructional Laboratories (with multimedia equipment and smartboards) 							
	 Instructional Laboratories (with multimedia equipment and smartboards) xi. Google Classroom 							
Required Text (core)	Abbott, C. (2001). ICT: Changing education. London: Routledge-Falmer.							
Required Text (core)	Januszewski, A. (2001). Educational technology: The development of a concept. Englewood,							
	CO: Libraries Unlimited. Jonassen, D. H., & Land, S. M. (1999). <i>Theoretical foundations of learning environments</i> .							
	Mahwah, NJ: Lawrence Erlbaum.							
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	doesnot fit all.							
	Thousand Oaks, CA: Corwin							
	Monteith, M. (2004). ICT for curriculum enhancement. Bristol: Intellect.							
	Moore, M. &Kearsley, G. (2005). <i>Distance education: A systems view.</i> Belmont, CA: Thomson Wadsworth.							
	Robertson, M., Webb, I., &Fluck, A. (2007). Seven steps to ICT integration. Camberwell,							
	London: ACER							
	T-TEL (2015), Questioning, PD Guide for Tutors Handbook,							
	T-TEL (2015), Creative Approaches, PD Guide for Tutors Handbook							
	T-TEL (2016), Group Work, PD Guide for Tutors Handbook							
CPD needs	Seminar on the Use of Gamification in the teaching and learning process							
	Writing reflective notes							
	Participating in a community of practice/conferences and accessing online							
	magazines(E-zines) & journals to obtain up to date content.							
	Team teaching and lesson observation to improve instructional strategies &							
	practices.							
	Supporting student teachers in collaborating in designing and developing a wiki.							

Title of Lesson	Classroom technology integration I Lesson Duration									
Lesson description	The less	on introduces st	udent teacher	s to Demor	strate knowledg	ge and Practice re	esponsible			
_		echnology syster			_					
Previous student teacher	Student	teachers have b	een exposed	to some cu	rrent Technologi	cal Trends shapiı	ng			
knowledge, prior learning	educatio	on								
(assumed)										
Possible barriers to learning	Some st	Some student teachers might not have had knowledge and understanding of responsible use								
in the lesson	of techn	of technology systems, information, and software in the classroom.								
Lesson Delivery – chosen to	Face-	Practical	Work-	Seminar	Independent	e-learning	Practicum			
support students in	to-	Activity	Based	S	Study [√]	opportunitie				
achieving the outcomes	face [[٧]	Leaning	[\dagger]		S				
	√]					[\dagger]				
Lesson Delivery – main	Face-to-	face – Both tead	ther and stude	nt-led appr	oaches such as o	liscussions of var	ying kinds			
mode of delivery chosen to	should b	oe used.								
support student teachers in	E-learni	ng opportunities	s -Student tea	chers would	d watch videos o	n YouTube/video	s about			
achieving the learning	-	ible use of techn								
outcomes.				-		ould be encourag				
		=			ork samples of o	ther student tead	chers to			
		progress or barri		-						
	_	•		• .		ious issues both				
				_		oup (e.g. Facebo				
			enable them	interact ou	tside class using	their mobile or a	ny other			
	suitable		6.1							
	-					ment of indeper	-			
		-				s to direct studer				
					DOCS-Udemy/co	ursera, khan aca	demy,			
		o support indep	endent study.							
Overarching outcome,	Student	teachers will:								
what you want the	Domono	trata knowlodgo	and Dractice	rocnoncible	use of technolo	au sustams infa	mation			
students to achieve, serves as basis for the		ware. <i>NTS: 1a, 1</i>		-		gy systems, infor	mation,			
learning outcomes. An	and son	.ware. 1413. 14, 1	u, 20, 20, 1011	Cr. Fillal 10	x 3					
expanded version of the										
description.										
Write in full aspects of										
the NTS addressed										
Learning Outcome for	Learning	g Outcomes	Learning	Indicators	Identify which	ch cross cutting i	SSIIPS —			
the lesson, picked and	Learning	Guttomes	Learning	, illuicators		nsferable skills, i				
developed from the						ddressing divers	-			
course specification	Demons	trate	State the	<u> </u>		rategies will resp				
Learning indicators for	knowled		regulation			y and equity (ie				
each learning outcome		responsible	_	g fair use.		nding learning to				
		echnology	_	a project	•	eg. People with				
		, information,	report o			ent, dyslexia, dys				
	-	ware. NTS:	complia			the instances wh				
		2c, 2e/NTECF:	acceptal		1	, cultural, and				
	Pillar 18		-	and other	-	nalized discrimi	nation are			
			guidelin			and/ or sustainir				
			J			itages for some s				
					teachers	-				

Topic Title: Classroom technology integration I	Sub-topic	Stage/time	Teaching and learning activities to depending on the delivery mode	
	·		collaborative group work or indep	
			Teacher Activity	Student Activity
	Introduction	10 mins	Face-to-face Tutor through brainstorming ask student teachers to discuss classroom technology integration	Face-to-Face Student Teachers answer tutor's questions to set the pace for the week's lesson.
	Why integrate technology?	50 minutes	e-learning Shows short videos from YouTube on why the need for technology integration. Tutor discusses the lessons that could be drawn from the videos watched https://www.youtube.com/watc h?v=9cxyH1qgKZQ https://www.youtube.com/watc h?v=d59eG1 Tt-Q	e-learning Student teachers watch videos from YouTube on the need for technology integration in the classroom; make notes from the videos for small groups discussion.
		110 minutes	Face-to-face Guides student teachers to analyze short videos on the need for technology integration in the classroom. And discuss the need to integrate technology in the classroom	Face-to-Face Student teachers write comments on the need for technology integration in the classroom, and in groups do class presentations.
	Lesson Closure	10 Minutes	Guide student teachers to present their discussion and the points identified in their discussions through brainstorming.	Student teachers recap the ideas/concepts learnt in the lesson.
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	 Project: I instruction potential of ideas a 	dentify, investigonal technologie of the internet and production, s. A project repo	od: Assessment of gate, propose and create solutions uses (student Teachers) have been into as a means of personal learning and, employ technology in development to be written.	roduced to. E.g. explore the d the respectful exchange
		_	2c, 2e/NTECF: Pillar 1& 3	
Instructional Resources	 CLO3, CLO4, CLO5NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1& 3 Smartphones Laptops Desktop computers Tablets TV and Radio Open Educational Resources (Including: YouTube, MOOCS-Udemy/coursera, khan academy, TESSA) The iBox (CENDLOS) Productivity tools Subject based application software Instructional Laboratories (with multimedia equipment and smartboards) Google Classroom Abbott, C. (2001). ICT: Changing education. London: Routledge-Falmer. 			
Required Text (core)	Januszewski, A. CO: Libraries Un	(2001). <i>Educatio</i> limited.	g education. London: Routledge-Fair onal technology: The development o 1999). Theoretical foundations of lea	f a concept. Englewood,

	Mahwah, NJ: Lawrence Erlbaum.
Additional Reading List	Banks, J.A., & Banks, C.M. (2009). Multicultural education: Issues and perspectives. Indianapolis, IN: Wiley
	Gregory, G.H., &Chapman, C.M (2006). Differentiated instructional strategies: One size doesn't fit all.
	Thousand Oaks, CA: Corwin
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	Robertson, M., Webb, I., &Fluck, A. (2007). Seven steps to ICT integration. Camberwell, London: ACER
	T-TEL (2015), Questioning, PD Guide for Tutors Handbook,
	T-TEL (2015), Creative Approaches, PD Guide for Tutors Handbook
	T-TEL (2016), Group Work, PD Guide for Tutors Handbook
CPD needs	Seminar on the need for technology integration in the classroom
	Writing reflective notes
	Participating in a community of practice/conferences and accessing online magazines (E-
	zines) & journals to obtain up to date content.
	Team teaching and lesson observation to improve instructional strategies & practices.
	Supporting student teachers in collaborating in designing and developing a wiki.

Title of Lesson	Classroom techno	ology integration	n II		Lesson Duration	3 Hours				
Lesson description	The lesson introduces student teachers to Demonstrate knowledge and Practice responsible use of technology systems, information, and software in the classroom.									
Previous student teacher knowledge, prior learning (assumed)	Student teachers have been exposed to the need to integrate technology in the classroom									
Possible barriers to learning	Some student teachers might not have had knowledge and understanding of responsible use									
in the lesson	of technology systems, information, and software in the classroom.									
Lesson Delivery – chosen to		ace-to- Practical Work- Seminars Independent e-learning Pract ace [\forall] Activity Based [\forall] Study [\forall] opportunities								
support students in		-	[\(\)]	Study [v]	opportunities					
achieving the outcomes	[V]	Leaning	tudent led en	nranchas such	as discussions of va	mina kinda				
Lesson Delivery – main mode of delivery chosen to	should be used.	tii teather and s	тийент-тей ар	proacties such	as discussions of va	rying kinus				
support student teachers in		unities - Student	teachers wou	ıld watch video	os on YouTube/vide	os about				
achieving the learning	responsible use of			ila waten viaci	os on rourabe, viae	os about				
outcomes.	T			ion of projects	should be encoura	ged.				
		_			of other student tea	_				
	explain progress of	or barriers to lea	rning							
	Group work: put	student teacher	s in small grou	ps to examine	various issues both	in a face to				
					h group (e.g. Facebo					
		am) to enable t	nem interact o	outside class us	ing their mobile or	any other				
	suitable device									
	-	-			element of indepe	-				
					itors to direct stude					
	TESSA) to support			vioucs-udemy	ı/coursera, khan aca	ademy,				
Overarching outcome,	Student teachers		aay.							
what you want the	Stadent teachers	•••••								
students to achieve,	Demonstrate kno	wledge and Prac	tice responsib	le use of techr	nology systems, info	rmation,				
serves as basis for the	and software. NT :	_	-							
learning outcomes. An										
expanded version of										
the description.										
Write in full aspects of										
the NTS addressed										
Learning Outcome for	Learning Outcom	es Learn	ing Indicators		ntify which cross cu	_				
the lesson, picked and					ore and transferable					
developed from the					lusivity, equity and ersity.	addressing				
course specificationLearning indicators for	Demonstrate	State	the regulation		These strategies v	will recoond				
Learning indicators for each learning outcome	knowledge and		the regulation the the regulation that the the the the the the the the the th	115	to inclusivity and	•				
each learning outcome	Practice responsib	_	ent a project r	enort on	ICT as a tool for e					
	use of technology		oliance with	cport on	learning to divers					
	systems,		otable use pol	icies and	eg. People with vi					
	information, and		r guidelines.	-	impairment, dysle					
	software. NTS: 1a		-		dysgraphia).					
	1d, 2c, 2e/NTECF:	•		•	Identify the instar	nces when				
	Pillar 1& 3				personal, cultural	, and				
					institutionalized					
					discrimination are	_				
					and/ or sustaining					
					disadvantages for					
					student-teachers.					

Topic Title: Classroom technology integration II	Sub-topic	Stage/ time	Teaching and learning activi depending on the delivery n collaborative group work or Teacher Activity	node selected. Teacher-led	
	Introduction	10 mins	Face-to-face Tutor through questioning ask student teachers to discuss ways to integrate technology in the classroom	Face-to-Face Student Teachers answer tutor's questions to set the pace for the week's lesson.	
	Integrate technology in the classroom	50 minutes	e-learning Shows short videos from YouTube on why the need for technology integration.	e-learning & Seminar Student teachers watch videos from YouTube on the need for technology integration in the classroom; make notes from the videos for small groups' discussion and discuss why technology integration is important in their STS school.	
	Ways to integrate	110minutes	Face-to-face Guides student teachers to analyze the short videos on ways to integrate technology in the classroom. https://www.youtube.com/watch?v=AgLNRKQR3Al	Seminar Student teachers write comments on ways to integrate technology in the classroom and discuss the different ways that technology can be integrated in their STS school.	
	Lesson Closure	10 Minutes	Guide student teachers to recap their discussion and the points identified in their discussions through questioning.	Student teachers recap the ideas/concepts learnt in the lesson	
Lesson assessments –	Summary of A	ssessment Met	thod: Assessment of		
evaluation of learning: of, for and as learning within the lesson	ı	CT into lessons	in the STS school. Student to v	e, propose a means of integrating write a report for the project.	
		ning Outcomes LO5NTS: 1a. 1d	: l, 2c, 2e/NTECF: Pillar 1& 3		
Instructional Resources	SmartLaptoDesktoTabletTV and	phones os op computers is d Radio		100CS-Udemy/coursera khan	
	 Open Educational Resources (Including: YouTube, MOOCS-Udemy/coursera, khan academy, TESSA) The iBox (CENDLOS) Productivity tools Subject based application software Instructional Laboratories (with multimedia equipment and smartboards) Google Classroom 				
Required Text (core)	Abbott, C. (2001). <i>ICT: Changing education</i> . London: Routledge-Falmer. Januszewski, A. (2001). <i>Educational technology: The development of a concept</i> . Englewood, CO: Libraries Unlimited. Jonassen, D. H., & Land, S. M. (1999). <i>Theoretical foundations of learning environments</i> . Mahwah, NJ: Lawrence Erlbaum.				
Additional Reading List	Indianapolis, I	N: Wiley	09). Multicultural education: l		

	Thousand Oaks, CA: Corwin						
	Monteith, M. (2004). ICT for curriculum enhancement. Bristol: Intellect.						
	Moore, M. &Kearsley, G. (2005). Distance education: A systems view. Belmont, CA: Thomson						
	Wadsworth.						
	Robertson, M., Webb, I., &Fluck, A. (2007). Seven steps to ICT integration. Camberwell,						
	London: ACER						
	T-TEL (2015), Questioning, PD Guide for Tutors Handbook,						
	T-TEL (2015), Creative Approaches, PD Guide for Tutors Handbook						
	T-TEL (2016), Group Work, PD Guide for Tutors Handbook						
CPD needs	Seminar on technology integration in the classroomeg. Using the Google Classroom ,						
	TESSA MOOCs etc						
	Writing reflective notes						
	Participating in a community of practice/conferences and accessing online						
	magazines(E-zines) & journals to obtain up to date content.						
	Team teaching and lesson observation to improve instructional strategies & practices.						
	Supporting student teachers in collaborating in designing and developing a wiki.						

Titl	e of Lesson	Classroo	m technolo	gy integration	n III	Lesso	on Duration	3 Hours
	son description						wledge and Prac	
LCS	son acsemption						ftware in the clas	
Dro	vious student teacher						te technology in	
_		classroor		ve been expo	sed to the ne	eeu to iiitegia	te technology in	tile
	owledge, prior learning	Classiooi	11					
	sumed)							
	ssible barriers to learning in			_		_	understanding of	f responsible
	lesson					oftware in the		
	son Delivery – chosen to	Face-	Practical	Work-	Seminars	Independe	e-learning	Practicum
sup	port students in achieving the	to-	Activity	Based	[٧]	nt Study [opportunities	
out	comes	face	[\dagger]	Leaning		√]	[1]	
		[\dagger]						
Les	son Delivery – main mode of							
del	ivery chosen to support	Face-to-f	ace – Both	teacher and s	tudent-led a	pproaches su	ch as discussions	of varying
	dent teachers in achieving the		uld be used					
	rning outcomes.	E-learnin	g opportun	ities -Student	t teachers wo	ould watch vio	deos on YouTube	/videos
				se of technolo				•
			-			ation of proie	cts should be end	couraged.
							es of other stude	
			-	or barriers to		work sample	.5 of other stude	in teachers
		•	. •		•	uns to evami	ne various issues	hoth in a
							up for each group	
						_		
					to enable the	em interact ot	itside class using	their mobile
		-	her suitable					
							an element of in	
		-		-			ntent. Tutors to o	direct
				-		ces (e.g. YouT		
		·		•	TESSA) to su	pport indepe	ndent study.	
•	Overarching outcome, what	Student 1	eachers wil	l:				
	you want the students to							
	achieve, serves as basis for	Demonst	rate unders	tanding and a	apply techno	logy resource	s for solving edu	cational
	the learning outcomes. An	problems	s, and makir	ng informed d	lecisions. <i>NT</i> .	S: 1a, 1d, 2c,	2e/NTECF: Pillar	1& 3
	expanded version of the							
	description.							
•	Write in full aspects of the							
	NTS addressed							
•	Learning Outcome for the	Learning		Learning	g Indicators	Identi	fy which cross cu	ıtting issues
•	lesson, picked and	Outcome		Learning	5 maicators		and transferable	_
	developed from the course	Outcome	.3				ivity, equity and	
	specification						ity. How will the	_
	-						ssed or develope	
•	Learning indicators for each	Damana	unt n					
	learning outcome	Demonst			technology i		nese strategies w	-
		understa	_	-	ment strateg		inclusivity and e	
		and appl			ng problems		a tool for expan	_
		technolo		 Use vari 	-		arning to diverse	_
		resources for technologies for solving People with visual impairm						
		solving problems dyslexia, dysgraphia).						
		educational • Use content-specific • Identify the instances when						
		problems, and tools, software, and personal, cultural, and						
		making informed simulations such as institutionalized discri						
		decisions	s. NTS:	environi	mental probe	es, a	re creating and/ o	or sustaining
		1a, 1d, 2	с,		calculators,	-	sadvantages for	
		2e/NTEC		explorat			udent-teachers.	
		1& 3		-	ments, and w			
				tools.	235, 3114 1			

		collab	pate in orative problem-	
Topic Title: Classroom technology integration III	Sub-topic	Stage/time	_	g activities to achieve outcomes ivery mode selected. Teacher-led ork or independent.
			Teacher Activity	Student Activity
	Introduction	10 mins	Face-to-face Tutor through a checklist ask student teachers to discuss ways to integrate technology in the classroom	Face-to-Face Student Teachers answer tutor's questions to set the pace for the week's lesson.
	Lesson plan that integrate technology	2hrs 40 mins	Face-to-face Introduces the need for lesson plan for every lesson through lecturette. Seminar Guide student teachers to use role play, group discussions, and presentations, to discuss the lesson plan. Face-to-face Introduceslesson plan that integrates technology. Practical Activity Asks student teachers to plan lessons that integrate technology. Discuss ways to write lessons plans that integrate technologies like Eg. Web quest Create a blog Multimedia presentation Video clips https://www.youtu	Face-to-face In a whole class discussion, student teachers express their understanding of lesson plan in small groups and feedback session. Practical Activity Student teachers plan lessons that will integrate technology and teach in small groups for whole class discussions.
			be.com/watch?v=W 13cru6eA4g	
	Lesson Closure	10 Minutes	Guide student teachers to present their discussion and the points identified in their discussions.	Student teachers present the ideas/concepts learnt in the lesson

Lesson assessments – evaluation	Summary of Assessment Method:						
of learning: of, for and as	Project: based on the recommendations on "ways ICTs can be integrated in the STS						
learning within the lesson	school" in the last lesson, student teacher will plan lessons that will integrate technology						
	and teach in small groups for whole class discussions.						
	Assesses Learning Outcomes:						
	CLO3, CLO4, CLO5NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1& 3						
Instructional Resources	Smartphones						
	• Laptops						
	Desktop computers						
	Tablets						
	TV and Radio						
	Open Educational Resources (Including: YouTube, MOOCS-Udemy/coursera,						
	khan academy,						
	• TESSA)						
	The iBox (CENDLOS)						
	Productivity tools						
	Subject based application software						
	 Instructional Laboratories (with multimedia equipment and smartboards) 						
	xi. Google Classroom						
Required Text (core)	Abbott, C. (2001). ICT: Changing education. London: Routledge-Falmer.						
	Januszewski, A. (2001). Educational technology: The development of a concept.						
	Englewood, CO: Libraries Unlimited.						
	Jonassen, D. H., & Land, S. M. (1999). Theoretical foundations of learning environments.						
	Mahwah, NJ: Lawrence Erlbaum.						
Additional Reading List	Banks, J.A., & Banks, C.M. (2009). Multicultural education: Issues and perspectives.						
	Indianapolis, IN: Wiley						
	Gregory, G.H., &Chapman, C.M (2006). Differentiated instructional strategies: One size						
	doesn't fit all.						
	Thousand Oaks, CA: Corwin						
	Monteith, M. (2004). <i>ICT for curriculum enhancement</i> . Bristol: Intellect. Moore, M. &Kearsley, G. (2005). <i>Distance education: A systems view</i> . Belmont, CA:						
	Thomson Wadsworth.						
	Robertson, M., Webb, I., &Fluck, A. (2007). <i>Seven steps to ICT integration</i> . Camberwell,						
	London: ACER						
	T-TEL (2015), Questioning, PD Guide for Tutors Handbook,						
	T-TEL (2015), Creative Approaches, PD Guide for Tutors Handbook						
	T-TEL (2016), Group Work, PD Guide for Tutors Handbook						
CPD needs	Seminar on Lesson Plan that integrate technology						
	Writing reflective notes						
	Participating in a community of practice/conferences and accessing online						
	magazines(E-zines) & journals to obtain up to date content.						
	Team teaching and lesson observation to improve instructional strategies &						
	practices.						
	Supporting student teachers in collaborating in designing and developing a wiki.						

Title of Lesson	Classroom technology integration IV				esson Dur	ation	3 Hours		
Lesson description	The lesson introduces student teachers to Demonstrate knowledge and Practice responsible use of technology systems, information, and software in the classroom.								
Previous student teacher knowledge, prior learning (assumed)	Student teachers have been exposed to lesson plans that integrate technology.								
Possible barriers to learning in the lesson	Some student teachers might not have had knowledge and understanding of responsible use of								
Lesson Delivery – chosen	technology systems, information, and software in the classroom. Face- Practical Work- Seminars Independent e-learning Practicum								
to support students in	to-face Activity	Based	[1]	Study		opportu	_	riacticalli	
achieving the outcomes	[V] [V]	Leaning	1		,	[٧]			
Lesson Delivery – main	[1]								
mode of delivery chosen	Face-to-face - Both t	eacher and	student-led	approac	hes such	as discuss	sions of v	arying kinds	
to support student	should be used.			•				, 0	
teachers in achieving the	E-learning opportuni	ties - Stude	nt teachers w	ould wa	atch video	s on You	Γube/vide	eos about	
learning outcomes.	responsible use of te	chnology sy	/stems.						
	Seminars – Both indi							_	
	Practical Activity- stu		ers will revie	w work	samples o	of other st	udent te	achers to explain	
	progress or barriers t	_							
	Group work: put stud		_	-					
	class and also online. Create a social media group for each group (e.g. Facebook, WhatsApp, Telegram) to enable them interact outside class using their mobile or any other suitable device								
				_	_		-		
	Independent study: enable student perso	•					-	-	
	Open Educational Re								
	support independent	-	g. TouTube, N	/10003-0	ouerriy/ co	Jui sera, k	man acau	emy, ressay to	
Overarching	Student teachers will								
outcome, what you									
want the students to	Demonstrate knowle	dge and Pr	actice respon	sible use	e of techn	ology sys	tems, inf	ormation, and	
achieve, serves as	software. NTS: 1a, 1a	1, 2c, 2e/N	TECF: Pillar 1	& <i>3</i>					
basis for the learning									
outcomes. An									
expanded version of									
the description.									
Write in full aspects									
of the NTS addressed					1				
Learning Outcome	Learning Outcomes	Lear	ning Indicato	ors		-		utting issues –	
for the lesson, picked								skills, inclusivity,	
and developed from the course					_	-	_	diversity. How d or developed?	
specification	Demonstrate	Sele	ct and use ap	nronriat				vill respond to	
Learning indicators	knowledge and		ct and use ap s and technol				-	iity (ie ICT as a	
for each learning	Practice responsible		urces to acco	- .				learning to	
outcome	use of technology		ety of tasks.					g. People with	
	systems,		and impleme	ent				, dyslexia,	
	information, and		ons and strate			dysgraph		, ,	
	software. NTS: 1a,		grate technol	_			-	ces when	
	1d, 2c, 2e/NTECF:		t the diverse			personal,			
	Pillar 1& 3	lear	ners in a varie	ety of		-		iscrimination are	
		edu	cational settir	ngs.		creating a	and/ or su	ustaining	
							tages for	some student-	
						teachers			

Topic Title: Classroom technology	Sub-topic	Stage/time	Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.					
integration IV			Teacher Activity	Student Activity				
	Introduction	10 mins	Face-to-face Tutor through a checklist ask student teachers to discuss the practical ways to integrate technology in the classroom	Face-to-Face Student Teachers answer tutor's questions to set the pace for the week's lesson.				
	Integrating technology into teaching	50mins	Practical activity Demonstrates the use of technology in teaching for student teachers to observe. Eg. 1. Use google classroom 2. TESSA MOOCs http://www.open.e du/openlearncreate /course/view.php?i d=2745	Face-to-face Student teachers observe and make notes on how to integrate technology in their teaching.				
			Field Trip: Takes student teachers out to observe best practices in the use of technology in teaching.	Field Trip: Student teachers observe demonstration at school of visit and make notes for classroom discussion.				
	110		e-learning Shows short videos from YouTube on integration of technology in teaching. Practical Activity Guides student teachers to role play the integration of technology in teaching (small group activity).	e-learning Student teachers watch videos from YouTube and discuss the contents in whole class session. Practical Activity Student teachers use role play to demonstrate how to integrate technology in teaching				
	Lesson Closure	10 Minutes	Guide student teachers to present their discussion and the points identified in their discussions.	Student teachers present the ideas/concepts learnt in the lesson to the class				
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	Summary of Assessment Method: Student teacher in a presentation will demonstrate the delivery of their technology enabled lesson planned in the last lesson. Assesses Learning Outcomes: CLO3, CLO4, CLO5NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1& 3							
Instructional Resources	 Smartphones Laptops Desktop computers Tablets TV and Radio Open Educational Resources (Including: YouTube, MOOCS-Udemy/coursera, khan academy, TESSA) 							

	The iPer (CENDLOS)						
	The iBox (CENDLOS)						
	Productivity tools						
	Subject based application software						
	 Instructional Laboratories (with multimedia equipment and smartboards) 						
	xi. Google Classroom						
Required Text (core)	Abbott, C. (2001). ICT: Changing education. London: Routledge-Falmer.						
	Januszewski, A. (2001). Educational technology: The development of a concept. Englewood, CO:						
	Libraries Unlimited.						
	Jonassen, D. H., & Land, S. M. (1999). Theoretical foundations of learning environments. Mahwah,						
	NJ: Lawrence Erlbaum.						
Additional Reading List	Banks, J.A., & Banks, C.M. (2009). Multicultural education: Issues and perspectives. Indianapolis,						
_	IN: Wiley						
	Gregory, G.H., &Chapman, C.M (2006). Differentiated instructional strategies: One size doesn't fit						
	all.						
	Thousand Oaks, CA: Corwin						
	Monteith, M. (2004). <i>ICT for curriculum enhancement</i> . Bristol: Intellect.						
	Moore, M. &Kearsley, G. (2005). Distance education: A systems view. Belmont, CA: Thomson						
	Wadsworth.						
	Robertson, M., Webb, I., &Fluck, A. (2007). Seven steps to ICT integration. Camberwell, London:						
	ACER						
	T-TEL (2015), Questioning, PD Guide for Tutors Handbook,						
	T-TEL (2015), Creative Approaches, PD Guide for Tutors Handbook						
	T-TEL (2016), Group Work, PD Guide for Tutors Handbook						
CPD needs	Seminar on Integrating technology into teaching						
	Writing reflective notes						
	Participating in a community of practice/conferences and accessing online magazines (E-						
	,						
	zines) & journals to obtain up to date content.						

Title of Lesson	Cognitive Science and Research-Based attributes of effective learning environments I				outes	Lesson Duratio	n	3 Hours		
Lesson description	The lesson introduces student teachers to Demonstrate knowledge and Practice responsible use of technology systems, information, and software in the classroom.									
Previous student teacher knowledge, prior learning (assumed)	Student teachers have been exposed to some of the current trends shaping education.									
Possible barriers to learning in the lesson	Some student teachers might not have had knowledge and understanding of responsible use of technology systems, information, and software in the classroom.									
Lesson Delivery – chosen to support students in achieving	Face- Practical Work- Seminars Independent e-learning to-face Activity Based [\(\vert \) Study opportunities							Practicum		
the outcomes		[v]	Leaning		[v] [′]		[1]			
Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes. Overarching outcome, what you want the students to achieve, serves as basis for the learning outcomes. An	kinds shoul E-learning or responsible Seminars — Practical Are explain pro Group wor to face class WhatsApp, other suita Independe study to en teachers to academy, T Student tea	d be used. opportuni e use of tec Both indivictivity- stu ogress or be k: put stuc ss and also Telegram ble device nt study: hable stude Open Edu ressA) to s achers will	technology systems. dividual and group presentation of projects should be encouraged. student teachers will review work samples of other student teachers to barriers to learning tudent teachers in small groups to examine various issues both in a face so online. Create a social media group for each group (e.g. Facebook, im) to enable them interact outside class using their mobile or any ce y: any of the above methods will include an element of independent ident personally engage with relevant content. Tutors to direct student ducational Resources (e.g. YouTube, MOOCS-Udemy/coursera, khan o support independent study.							
expanded version of the description. • Write in full aspects of the NTS addressed										
Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for	Learning Learning Indicators Outcomes					Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?				
each learning outcome	Critically understand apply techr resources f solving pro and making informed decisions. <i>A</i> 1d, 2c, 2e/I Pillar 1& 3	d and nology for blems, g	develo for solv Use va techno proble Use co tools, s simula enviror graphic explora	ntent-specificoftware, and tions such as namental prolocolomy.	egies ns lving ic d s bes,	•	equity ar use ICT to inclusion thinking, creativity	nd gende pols to e , develo probler v, collab	equity and op critical on solving,	

Topic Title: Assistive devices	Sub-topic	Stage/time		ivities to achieve outcomes mode selected. Teacher-led or independent.	
			Teacher Activity	Student Activity	
	Introduction	10 mins	Face-to-face Tutor through questioning ask student teachers to discuss Cognitive Science and Research-Based attributes of effective learning environments	Face-to-Face Student Teachers answer tutor's questions to set the pace for the week's lesson.	
	Learners and Learning Development and Learning competencies	80 mins	Face-to-face Discusses with student teachers on the concepts learners and learning, and then development and learning competencies and allow class discussions Eg. 1. What is learning 2. Learning Theories (Behavourism, Cognitivism, and Constructivism theories) 3. Learning styles 4. Types of Learners etc	Practical Activity Student teachers discuss with theconcepts learners and learning, and then development and learning competencies and allow class discussions to relate it to what happens in school.	
	Transfer of Learning Competent and Expert performance	80mins	e-learning shows student teachers short videos from YouTube on transfer of learning https://www.youtube.co m/watch?v=hzvid3G6XT C	e-learning Student teachers watch short videos from YouTube on transfer of learning. Practical Activity Student teachers work in small groups demonstrating transfer of learning with	
			Practical Activity Demonstrate the transfer of learning with some ICT concepts treated in year one, through talk for learning, and questions and answers.	some ICT concepts treated in year one, through talk for learning, and questions and answers student teachers explore transfer of learning in practice in school.	
	Lesson Closure	10 Minutes	Guide student teachers to present their discussion and the points identified in their discussions.	Student teachers present the ideas/concepts learnt in the lesson	
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	Summary of Assessment Method: Assessment for Student teacher to write reflective notes on what is learning to go into their portfolio Assesses Learning Outcomes: CLO3, CLO4, CLO5NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1& 3				
Instructional Resources	• Smartp		20, 20, NIECE, FIIIdI 10, 3		

	• Laptops
	Desktop computers
	Tablets
	TV and Radio
	Open Educational Resources (Including: YouTube, MOOCS-Udemy/coursera, khan
	academy,
	• TESSA)
	The iBox (CENDLOS)
	Productivity tools
	Subject based application software
	Instructional Laboratories (with multimedia equipment and smartboards)
	Google Classroom
Required Text (core)	Abbott, C. (2001). ICT: Changing education. London: Routledge-Falmer.
Required Text (core)	Januszewski, A. (2001). Educational technology: The development of a concept.
	Englewood, CO: Libraries Unlimited.
	Jonassen, D. H., & Land, S. M. (1999). <i>Theoretical foundations of learning environments</i> .
	Mahwah, NJ: Lawrence Erlbaum.
Additional Reading List	Banks, J.A., & Banks, C.M. (2009). Multicultural education: Issues and perspectives.
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	doesn't fit all.
	Thousand Oaks, CA: Corwin
	Monteith, M. (2004). <i>ICT for curriculum enhancement</i> . Bristol: Intellect.
	Moore, M. &Kearsley, G. (2005). <i>Distance education: A systems view</i> . Belmont, CA:
	Thomson Wadsworth.
	Robertson, M., Webb, I., &Fluck, A. (2007). Seven steps to ICT integration. Camberwell,
	London: ACER
	T-TEL (2015), Questioning, PD Guide for Tutors Handbook,
	T-TEL (2015), Creative Approaches, PD Guide for Tutors Handbook
	T-TEL (2016), Group Work, PD Guide for Tutors Handbook
CPD needs	Seminar on the need for transfer of learning
	Writing reflective notes
	Participating in a community of practice/conferences and accessing online
	magazines (E-zines) & journals to obtain up to date content.
	Team teaching and lesson observation to improve instructional strategies &
	practices.
	 Supporting student teachers in collaborating in designing and developing a wiki.

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1234567 8 9101112
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Title of Lesson	Cognitive Science and Research-Based attributes of effective learning environments II Duration 3 Hours									
Lesson description	The lesson intro responsible use						-			
Previous student teacher knowledge, prior learning (assumed)	Student teache	Student teachers have been exposed to lesson plans that integrate technology.								
Possible barriers to learning in the lesson		Some student teachers might not have had knowledge and understanding of responsible use of technology systems, information, and software in the classroom.								
Lesson Delivery – chosen to support students in	Face- Praction to-face Activ	Face- Practical Work- Seminar Independent e-learning Practicum								
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes. Overarching outcome, what you want the students to achieve, serves as basis for the	Face-to-face – Both teacher and student-led approaches such as discussions of varying kinds should be used. E-learning opportunities -Student teachers would watch videos on YouTube/videos about responsible use of technology systems. Seminars – Both individual and group presentation of projects should be encouraged. Practical Activity- student teachers will review work samples of other student teachers to explain progress or barriers to learning Group work: put student teachers in small groups to examine various issues both in a face to face class and also online. Create a social media group for each group (e.g. Facebook, WhatsApp, Telegram) to enable them interact outside class using their mobile or any other suitable device Independent study: any of the above methods will include an element of independent study to enable student personally engage with relevant content. Tutors to direct student teachers to Open Educational Resources (e.g. YouTube, MOOCS-Udemy/coursera, khan academy, TESSA) to support independent study. Student teachers will: Demonstrate knowledge and Practice responsible use of technology systems, information,							rideos about uraged. teachers to oth in a face Facebook, or any other ependent rect student era, khan		
learning outcomes. An expanded version of the description. Write in full aspects of the NTS addressed										
Learning Outcome for the lesson, picked and developed from the course specification Learning indicators for each learning outcome	Learning Learning Indicators Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?							nsferable uity and How will		
	Critically understand and apply technolog resources for solving problems, and making informed decisions. NTS: 1a, 1d, 2c, 2e/NTECF: Pillo 1& 3	d •	develop solving use var for solv use con softwar such as probes, explora and we Particip	y technology oment strate problems lety of techning problem tent-specific e, and simule environmer graphic calcutory environ b tools. ate in collabor strates activing activity activit	ologies s tools, ations atal culators, ments,	The included	ese strategi lusivity and il for expan erse learne ual impairn graphia) . I tances whe tural, and i criminatior	d equity nding lears eg. F nent, dy Identify en perso nstituti n are cro disadva	People with yslexia, the conal, conalized eating and/ ntages for	

		tools a resour varietyPlan are and streeth or diverse	and use appropriate and technology ces to accomplish a y of tasks. and implement lessons rategies that integrate blogy to meet the e needs of learners in a y of educational		
Topic Title:				ctivities to achieve outcomes ery mode selected. Teacher-led	
	Sub-topic	Stage/time	collaborative group wor	-	
			Teacher Activity	Student Activity	
	Introduction	10 mins	Face-to-face Tutor through questioning ask student teachers to further discuss Cognitive Science and Research-Based attributes of effective learning environments	Face-to-Face Student Teachers answer tutor's questions to set the pace for the week's lesson.	
	Teachers and Teaching	50 minutes	Practical Activity Guides student teachers to role play teachers and teaching e-learning Shows videos from YouTube on teachers and teaching. https://www.youtube. com/watch?v=RN3iLeq 1828	Practical Activity Student teachers role play teachers and teaching to address a learning need in a classroom. Discussion of role play to enhance understanding. e-learning Student teachers s watch short videos and discuss the contents in small groups	
	Teaching for In-Depth Learning	60 minutes	e-learning Shows videos from YouTube on teaching for in-depth learning. Tutor leads a discussion of teaching methods using ICTs that enhance in-depth learning	e-learning Student teachers watch short videos and discuss the contents in small groups. They focus their discussion on teaching methods using ICTs that enhance in- depth learning	
	Expert Teachers Lesson Closure	50minutes 10 Minutes	Practical Activity Assign student teachers task to demonstrate the concept expert teachers Guide student teachers to present their discussion and	Practical Activity In small groups student teachers undertake a project using the concept expert teachers to address a learning need. Pictures of the project and records should be kept as part of their portfolio development. Student teachers present the ideas/concepts learnt in the lesson to the class in groups.	
			the points identified in their discussions to the class.	resson to the class in groups.	

Lesson assessments –	Summary of Assessment Method: Assessment for
evaluation of learning: of,	Student teachers to write reflective notes on teaching for in-depth learning to go into their
for and as learning within	portfolio
the lesson	
	Assesses Learning Outcomes:
	CLO3, CLO4, CLO5NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1& 3
Instructional Resources	Smartphones
	• Laptops
	Desktop computers
	• Tablets
	TV and Radio
	Open Educational Resources (Including: YouTube, MOOCS-Udemy/coursera, khan
	academy,
	• TESSA)
	The iBox (CENDLOS)
	Productivity tools
	Subject based application software
	Instructional Laboratories (with multimedia equipment and smartboards)
	Google Classroom
Required Text (core)	Abbott, C. (2001). ICT: Changing education. London: Routledge-Falmer.
Required Text (core)	Januszewski, A. (2001). Educational technology: The development of a concept. Englewood,
	CO: Libraries Unlimited.
	Jonassen, D. H., & Land, S. M. (1999). <i>Theoretical foundations of learning environments</i> .
	Mahwah, NJ: Lawrence Erlbaum.
Additional Reading List	Banks, J.A., & Banks, C.M. (2009). Multicultural education: Issues and perspectives.
Additional Reduing List	Indianapolis, IN: Wiley
	Gregory, G.H., &Chapman, C.M (2006). Differentiated instructional strategies: One size doesn't
	fit all.
	Thousand Oaks, CA: Corwin
	Monteith, M. (2004). <i>ICT for curriculum enhancement</i> . Bristol: Intellect.
	Moore, M. &Kearsley, G. (2005). <i>Distance education: A systems view</i> . Belmont, CA: Thomson
	Wadsworth.
	Robertson, M., Webb, I., &Fluck, A. (2007). Seven steps to ICT integration. Camberwell,
	London: ACER
	T-TEL (2015), Questioning, PD Guide for Tutors Handbook,
	T-TEL (2015), Creative Approaches, PD Guide for Tutors Handbook
	T-TEL (2016), Group Work, PD Guide for Tutors Handbook
CPD needs	Seminar on Expert Teachers and their characteristics
	Writing reflective notes
	Participating in a community of practice/conferences and accessing online magazines
	(E-zines) & journals to obtain up to date content.
	Team teaching and lesson observation to improve instructional strategies & practices.
	Supporting student teachers in collaborating in designing and developing a wiki.
	Tapporting officers in considerating in designing and developing a winti

Year of B.Ed. 2 Semester 1 Place of lesson in semester	12345678 9 101112
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Titl	le of Lesson	Cognitive Scien attributes of ef		search-Based arning environm		esson Duration 3 Hours						
	sson description	The lesson intro of technology s	The lesson introduces student teachers to Demonstrate knowledge and Practice responsible use of technology systems, information, and software in the classroom. Student teachers have been exposed to lesson plans that integrate technology.									
	owledge, prior rning (assumed)											
Pos	ssible barriers to	Some student t	ome student teachers might not have had knowledge and understanding of responsible use of									
	rning in the lesson			mation, and sof	tware in the							
	son Delivery – chosen		Practical	Work-Based	Seminars	Independent	e-learning	Practicum				
	support students in		Activity	Learning	[٧]	Study	opportunities	[]				
	nieving the outcomes		[v]	[]		[v]	[/]	1 . 1				
	son Delivery – main	should be used		ier and student-	ied approac	nes such as disci	ussions of varying	g kinas				
	ode of delivery chosen support student			-Student teache	rs would wa	atch videos on Vo	ouTube/videos al	hout				
	chers in achieving the	responsible use			is would we	iten viacos on re	od rabe, viacos ai	bout				
	rning outcomes.	•		·	sentation o	f projects should	be encouraged.					
	· ·						student teachei					
		progress or bar	rriers to lea	arning								
		-					issues both in a					
					_		(e.g. Facebook,					
							any other suitab					
							nt of independer					
							ect student teac , khan academy,					
		support indepe			e, MOOCS-	ouemy/coursera	, Kilali acadelliy,	1L33A) (0				
•	Overarching	Student teache		- 1 -								
	outcome, what you											
	want the students to	Demonstrate k	nowledge	and Practice res	ponsible us	e of technology s	systems, informa	tion, and				
	achieve, serves as	software. NTS:	1a, 1d, 2c,	2e/NTECF: Pillo	ır 1& 3							
	basis for the learning											
	outcomes. An											
	expanded version of											
	the description.											
•	Write in full aspects of the NTS addressed											
•	Learning Outcome	Learning Outco	omes	Learning	Indicators	Identi	fy which cross cu	utting				
	for the lesson,						- core and trans	_				
	picked and					skills,	inclusivity, equi	ty and				
	developed from the					addre	ssing diversity. I	low will				
	course specification						be addressed or	•				
•	Learning indicators					devel	•					
	for each learning	Critically under			echnology in		ctivities will insti					
	outcome	and apply techi	•	·	ent strateg		rtues such as ho	-				
		resources for so problems, and	_	solving p	oblems by of techno		ritical thinking as ocurately evaluat	-				
		informed decis			g problems		curately evaluate port on fair use					
		1a, 1d, 2c, 2e/l					chnology adopte					
		Pillar 1& 3	·		•	,	ddress diverse le					
					nvironment		eeds.	-				
				probes, g	raphic calcu	*	ney will learn to					
					ry environn	-	ases in favour of	_				
				and web	tools.	-	pecific gender, so					
		Religion and ethnicity.										

Topic Title:	Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led						
	Sub-topic	Stage/time	collaborative group work or i				
	Introduction	10 mins	Face-to-face Tutor through questioning ask student teachers to discuss Cognitive Science and Research-Based attributes of effective	Face-to-Face Student Teachers answer tutor's questions to set the pace for the week's lesson.			
	Learning Environments Tools of Technology	50 mins	learning environments Face-to-face Uses questions to explore student teachers' understanding of learning environments as well as tools of technology	Independent study & Seminar Student teachers surf the net using their mobile phones for further explanations of learning environment as well as tools of technology in the teaching and learning process. Student teachers share their notes from independent study in small groups.			
	Learning and Connections to Community	60 mins	Face-to-face Uses probing questions to discuss what learning and connections to community is about and its importance in the classroom.	Independent Study Student teachers make contributions and write down points about how learning in their STS school connects to the community in their Reflective Journal for reflection			
	Assessment to support Learning	50 mins	Seminar Discusses guidelines for writing to support learning with students.	Independent Study & Seminar Student teachers write discuss Assessment to support learning for small group discussion			
	Lesson Closure	10 Minutes	Give student teachers reading assignment.	Student teachers take note of the reading assignment			
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	Summary of Assessment Method: Assessment for Student teachers to do a project on the technology learning tools available in the STS school and how these can be used to enable learning and assessment. Student teachers to write a project report Assesses Learning Outcomes:						
Instructional Resources	CLO3, CLO4, CLO5NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1& 3 Smartphones Laptops Desktop computers Tablets TV and Radio Open Educational Resources (Including: YouTube, MOOCS-Udemy/coursera, khan academy, TESSA) The iBox (CENDLOS) Productivity tools Subject based application software Instructional Laboratories (with multimedia equipment and smartboards) Google Classroom						
Required Text (core)	Abbott, C. (2001). ICT: Changir (2001). Educat	ng education. London: Routledg ional technology: The developn	ge-Falmer. The section of a concept. Englewood, CO:			

	Jonassen, D. H., & Land, S. M. (1999). Theoretical foundations of learning environments.						
	Mahwah, NJ: Lawrence Erlbaum.						
Additional Reading List	Banks, J.A., & Banks, C.M. (2009). Multicultural education: Issues and perspectives. Indianapolis,						
	IN: Wiley						
	Gregory, G.H., &Chapman, C.M (2006). Differentiated instructional strategies: One size doesn't fit						
	all.						
	Thousand Oaks, CA: Corwin						
	Monteith, M. (2004). <i>ICT for curriculum enhancement</i> . Bristol: Intellect.						
	Moore, M. &Kearsley, G. (2005). Distance education: A systems view. Belmont, CA: Thomson						
	Wadsworth.						
	Robertson, M., Webb, I., &Fluck, A. (2007). Seven steps to ICT integration. Camberwell, London:						
	ACER						
	T-TEL (2015), Questioning, PD Guide for Tutors Handbook,						
	T-TEL (2015), Creative Approaches, PD Guide for Tutors Handbook						
	T-TEL (2016), Group Work, PD Guide for Tutors Handbook						
CPD needs	Seminar on Techniques in Assessment to support learning						
	Writing reflective notes						
	 Participating in a community of practice/conferences and accessing online magazines (E- 						
	zines) & journals to obtain up to date content.						
	Team teaching and lesson observation to improve instructional strategies & practices.						
	Supporting student teachers in collaborating in designing and developing a wiki.						

Year of B.Ed. 2 Semester 1 Place of lesson in semester 1 2 3 4 5 6 7 8 9 10 11 12

Title of Lesson	Equity in Using	Technology	in the Cla	ssroom I		Lesson Duration	3 Hours			
Lesson description		The lesson introduces student teachers to Demonstrate knowledge and Practice responsible use of technology systems, information, and software in the classroom.								
Previous student teacher knowledge, prior learning	Student teacher									
(assumed)										
Possible barriers to learning		Some student teachers might not have had knowledge and understanding of responsible use								
in the lesson	of technology sy						5			
Lesson Delivery – chosen to support students in	Face-to-face	Practical Activity	Work- Based	Seminars [√]	Independent Study [1/]	e-learning opportunities	Practicum			
achieving the outcomes	[[]	[V]	Leaning	[v]	Study [v]					
Lesson Delivery – main	Face-to-face – F			ent-led appr	oaches such as o	discussions of var	ving kinds			
mode of delivery chosen to	should be used.			one los app.			,gas			
support student teachers in	E-learning oppo	rtunities -S	tudent tea	chers would	watch videos o	n YouTube/video	s about			
achieving the learning	responsible use	of technolo	gy system	S.						
outcomes.			• .	•		ould be encourag				
		-			ork samples of o	ther student tead	chers to			
	explain progress			_	_					
						ious issues both				
						oup (e.g. Facebo their mobile or a				
	suitable device	grain) to er	iable them	interact out	side class using	their mobile or a	ny otner			
		udv: anv of	the above	methods w	ill include an ele	ement of indepen	dent study			
						s to direct studer				
						ursera, khan aca				
	TESSA) to suppo									
 Overarching outcome, 	Student teacher	s will:								
what you want the										
students to achieve,		_		-		gy systems, info	mation,			
serves as basis for the	and software. N	15: 1a, 1a,	2C, 2e/N1E	CF: Pillar 18	k 3					
learning outcomes. An expanded version of the										
description.										
Write in full aspects of										
the NTS addressed										
Learning Outcome for	Learning Outco	mes		Learning Inc	dicators	Identify which	cross			
the lesson, picked and						cutting issues -				
developed from the						transferable sk				
course specification						inclusivity, equ	-			
Learning indicators for						addressing dive	=			
each learning outcome						will these be a developed?	aaressea or			
	Critically unders	tand and	•	employ tech	nology in	-	p skills in			
	apply technolog			developmer			ation of			
	for solving prob	•		for solving p	•	_	llaboration			
	making informe			use variety		and				
	decisions. NTS: 1			technologie	s for solving		unication, edge on			
	2e/NTECF: Pilla	2e/NTECF: Pillar 1& 3 problems								
							, gender			
						and				
							on as well ection and			
							thinking			
						CITICA	i miniking			

Topic Title:	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	10 mins	Face-to-face Tutor through questioning ask student teachers to discuss Equity in using technology in the classroom	Face-to-Face Student Teachers answer tutor's questions to set the pace for the week's lesson.				
	Issues relating to Equity: Standard Based Reforms Inclusion, Cultural and Linguistic Diversity Instructional approaches that support Inclusion	50 mins	Face-to- face & e-learning Guides student teachers to watch short videos from YouTube on Instructional approaches that support Inclusion	Face-to-face & Practical Activity Student teachers share their views after watching short videos from YouTube on Instructional approaches that support Inclusion				
	Differentiated Instruction Universal Design for Learning	60 mins	e-learning Shows short videos from YouTube on Differentiated Instruction and Universal Design for Learning.	e-learning Student teachers share their views on Differentiated Instruction and Universal Design for Learning for their portfolio. They relate their views to the need for differentiated instruction in school noting the differences in pupils.				
	Multicultural education Sheltered Instruction	50 mins	Practical Activity. Guides student teachers in the use of their mobile phones to record classroom activities for their portfolio.	Independent Study & Seminar Student teachers share their views on types of videos to be included in a teaching portfolio. Based on the videos watched, student teachers discuss in groups, and justify the selection of the videos for portfolios using their STS school as a case.				
	Lesson Closure	10 Minutes	Guide student teachers to recap their discussion and the points identified in their discussions.	Student teachers recap the ideas/concepts learnt in the lesson				
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	Student teache school. The Wil	rs to develop a v ki is to go into th	od: Assessment As wiki in their groups on approached leir portfolio.	to enhance inclusivity in				
	Assesses Learning Outcomes: CLO3, CLO4, CLO5NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1& 3							

Instructional Resources	Smartphones					
	• Laptops					
	Desktop computers					
	Tablets					
	TV and Radio					
	Open Educational Resources (Including: YouTube, MOOCS-Udemy/coursera, khan					
	academy,					
	• TESSA)					
	The iBox (CENDLOS)					
	Productivity tools					
	Subject based application software					
	Instructional Laboratories (with multimedia equipment and smartboards)					
	Google Classroom					
Required Text (core)	Abbott, C. (2001). ICT: Changing education. London: Routledge-Falmer.					
	Januszewski, A. (2001). Educational technology: The development of a concept. Englewood,					
	CO: Libraries Unlimited.					
	Jonassen, D. H., & Land, S. M. (1999). Theoretical foundations of learning environments.					
	Mahwah, NJ: Lawrence Erlbaum.					
Additional Reading List	Banks, J.A., & Banks, C.M. (2009). Multicultural education: Issues and perspectives.					
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	Gregory, G.H., &Chapman, C.M (2006). Differentiated instructional strategies: One size					
	doesn't fit all.					
	Thousand Oaks, CA: Corwin					
	Monteith, M. (2004). <i>ICT for curriculum enhancement</i> . Bristol: Intellect.					
	Moore, M. &Kearsley, G. (2005). <i>Distance education: A systems view</i> . Belmont, CA: Thomson					
	Wadsworth. Robertson, M., Webb, I., &Fluck, A. (2007). Seven steps to ICT integration. Camberwell,					
	London: ACER					
	T-TEL (2015), Questioning, PD Guide for Tutors Handbook,					
	T-TEL (2015), Creative Approaches, PD Guide for Tutors Handbook					
	T-TEL (2016), Group Work, PD Guide for Tutors Handbook					
CPD needs	Workshops on planning and developing Portfolio (including E-portfolio)					
	Writing reflective notes					
	Participating in a community of practice/conferences and accessing online					
	magazines (E-zines) & journals to obtain up to date content.					
	Team teaching and lesson observation to improve instructional strategies &					
	practices.					
	Supporting student teachers in collaborating in designing and developing a wiki.					

Year of B.Ed. 2 Semester 1 Place of lesson in semester 1 2 3 4 5 6 7 8 9 10 11 12

Title of Lesson	Equity in	n Using Tech	nology in t	he Classrooi	m II	Lesson	Duration	3 Hou	ırs
Lesson description		The lesson introduces student teachers to Demonstrate knowledge and Practice responsible use of technology systems, information, and software in the classroom.							
Previous student teacher knowledge, prior learning (assumed)	Student	Student teachers have been exposed to lesson plans that integrate technology.							
Possible barriers to learning in	Somo st	udent teach	orc might n	ot have had	knowloda	ro and	undorstandi	ing of	
the lesson		ible use of te							oom.
Lesson Delivery – chosen to	Face-	Practical	Work-	Seminars			e-learning		Practicum
support students in achieving	to-face								racticain
the outcomes	[\(\)]	[1]	Leaning	[]	totaay		[1]		
Lesson Delivery – main mode o		face – Both		d student-led	d approac	ches su		sions o	f varving
delivery chosen to support		ould be used							, 6
student teachers in achieving t		ng opportun		ent teachers	would wa	atch vic	leos on You [·]	Tube/v	ideos
learning outcomes.		sponsible us						,	
J		s – Both ind				f proje	cts should b	e enco	uraged.
		I Activity - st							_
	to expla	in progress c	or barriers t	o learning					
	Group w	/ork: put stu	dent teach	ers in small g	groups to	examir	ne various is	sues b	oth in a
	face to f	ace class and	d also onlin	e. Create a s	ocial med	dia grou	រp for each ខ្	group (e.g.
	WhatsA	op, Telegram	n) to enable	them intera	act outsid	le class	using their i	mobile	or any
	other su	itable device	9						
		dent study:	-						-
		enable stud	-						ect
		student teachers to Open Educational Resources (e.g. YouTube, MOOCS-							
		Udemy/coursera, khan academy, TESSA) to support independent study.							
 Overarching outcome, what you want the students to 	t Student	Student teachers will:							
achieve, serves as basis for	Demons	Demonstrate knowledge and skills in the use of technology to locate, evaluate , and							
the learning outcomes. An	collect i	collect information from a variety of sources NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1& 3							
expanded version of the									
description.									
 Write in full aspects of the 									
NTS addressed									
Learning Outcome for the	Learning		Lear	ning Indicate	ors		ify which cr		_
lesson, picked and	Outcom	es					s – core and		
developed from the course						-	inclusivity,		
specification							essing diver	-	ow will
 Learning indicators for eac 	ו 📗						be address	ed or	
learning outcome	0 11						oped?		
	Critically		_	loy technolo			evelop skill		-
	understa			lopment str	_		of ICT, collab		
	resource	chnology os for		olving proble	ems		ommunicat		owiedge
		oroblems,		ariety of	ح مارين ح		n equity, ge		ll ac
	and mak	-		nologies for	solving		ndInclusion		
	informe	_		lems		l r	eflection an	u critic	ai tiilliking
		u s. NTS: 1a,	•						
		e/NTECF:							
	Pillar 18								
	Fillul 16	(J							

Topic Title:			Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led			
	Sub-topic	Stage/time	collaborative group work Teacher Activity	c or independent. Student Activity		
	Introduction	10 min	Face-to-face Tutor through questioning ask student teachers to discuss Equity in using technology in the classroom	Face-to-Face Student Teachers answer tutor's questions to set the pace for the week's lesson.		
	Available methods	20 min	Face-to- face & e- learning	Face-to-face & Practical Activity		
	Methods of Instruction		Guides student teachers to watch short videos from YouTube, on methods of Instruction.	Student teachers share their views on methods of Instruction and select samples of projects to be included in their portfolio.		
	Materials of Instruction Environment of Instruction	30 min	e-learning Shows short videos from YouTube, process in selecting Materials for Instruction as well as Environment of Instruction.	e-learning Student teachers share their views on process in selecting Materials for Instruction as well as Environment of Instruction. The share their views on their STS school as an environment and which materials are suitable		
	Content of Instruction Collaboration for Instruction	60 min	PracticalActivity. Guides student teachers in the use of their mobile phones to do activities on Content of Instruction and Collaboration for Instruction.	Independent Study & Seminar Student teachers share their views on Content of Instruction and Collaboration for Instruction. Based on the videos watched, student teachers discuss in groups, and justify the selection of Materials of Instruction as well as Collaboration for Instruction.		
	Assessment in Instruction	50 minutes	Face-to-face Guides student teachers to use concept mapping to discuss the relevance of Assessment in Instruction.	Practical Activity Through concept mapping, student teachers (in groups), discuss the need for Assessment in Instruction, and use PowerPoint to present their findings.		
	Lesson Closure	10 Minutes	Guides student teachers to recap their discussion and the points identified in their discussions.	Student teachers recap the ideas/concepts learnt in the lesson		
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	(collaboration/a	r to write refle assessment/co ing Outcomes:	ctive notes how any of the ntent/environment) and it	s impact on instruction		

Instructional Resources	Smartphones
	• Laptops
	Desktop computers
	Tablets
	TV and Radio
	Open Educational Resources (Including: YouTube, MOOCS-Udemy/coursera,
	khan academy,
	• TESSA)
	The iBox (CENDLOS)
	Productivity tools
	Subject based application software
	 Instructional Laboratories (with multimedia equipment and smartboards)
	Google Classroom
Required Text (core)	Abbott, C. (2001). ICT: Changing education. London: Routledge-Falmer.
	Januszewski, A. (2001). Educational technology: The development of a concept.
	Englewood, CO: Libraries Unlimited.
	1. Jonassen, D. H., & Land, S. M. (1999). Theoretical foundations of learning
	environments. Mahwah, NJ: Lawrence Erlbaum.
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	Indianapolis, IN: Wiley
	Gregory, G.H., &Chapman, C.M (2006). Differentiated instructional strategies: One size
	doesn't fit all.
	Thousand Oaks, CA: Corwin Monteith, M. (2004). ICT for curriculum enhancement. Bristol: Intellect.
	Moore, M. &Kearsley, G. (2005). <i>Distance education: A systems view.</i> Belmont, CA:
	Thomson Wadsworth.
	Robertson, M., Webb, I., &Fluck, A. (2007). Seven steps to ICT integration. Camberwell,
	London: ACER
	T-TEL (2015), Questioning, PD Guide for Tutors Handbook,
	T-TEL (2015), Creative Approaches, PD Guide for Tutors Handbook
	T-TEL (2016), Group Work, PD Guide for Tutors Handbook
CPD needs	Workshops on Content of Instruction and Collaboration for Instruction
	Writing reflective notes
	Participating in a community of practice/conferences and accessing online
	magazines (E-zines) & journals to obtain up to date content.
	Team teaching and lesson observation to improve instructional strategies &
	practices.
	 Supporting student teachers in collaborating in designing and developing a
	wiki.

Year of B.Ed. 2 Semester 1 Place of lesson in semester 1 2 3 4 5 6 7 8 9 10 11 12

Title of Lesson	Issues in	Digital Tech	nology in	education	Lessor	Duration 3	Hours		
Lesson description	The lesson introduces student teachers to Demonstrate knowledge and Practice								
	responsible use of technology systems, information, and software in the classroom.								
Previous student teacher	Student teachers have been exposed to lesson plans that integrate technology.								
knowledge, prior learning									
(assumed)									
Possible barriers to learning in	Some student teachers might not have had knowledge and understanding of responsible								
the lesson	use of technology systems, information, and software in the classroom.								
Lesson Delivery – chosen to	Face-								
support students in achieving	to-								
the outcomes	face	[🗸]	Leaning			[٧]			
	[🗸]								
Lesson Delivery – main mode									
of delivery chosen to support	Face-to-	Face-to-face – Both teacher and student-led approaches such as discussions of varying							
student teachers in achieving	kinds sh	ould be used.							
the learning outcomes.	E-learnii	ng opportuni	ties - Stude	nt teachers v	vould watch vid	eos on YouTube/\	videos about		
	-	ble use of te		•					
	Seminar	's – Both indi	idual and	group preser	ntation of projec	ts should be enco	ouraged.		
	Practica	I Activity - stu	dent teacl	ners will revie	w work sample:	s of other student	teachers to		
	explain p	progress or b	arriers to I	earning					
	Group w	ork: put stud	lent teach	ers in small g	roups to examin	e various issues b	oth in a face		
						each group (e.g.			
	Telegran	n) to enable t	hem inter	act outside cl	ass using their r	nobile or any oth	er suitable		
	device								
	_	Independent study: any of the above methods will include an element of independent							
			-			tent. Tutors to di			
	teachers to Open Educational Resources (e.g. YouTube, MOOCS-Udemy/coursera, khan								
	academy, TESSA) to support independent study.								
 Overarching outcome, 	Student teachers will:								
what you want the									
students to achieve,	Demonstrate understanding and apply technology resources for solving educational								
serves as basis for the	problems, and making informed decisions. NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1& 3								
learning outcomes. An									
expanded version of the									
description.									
Write in full aspects of the									
NTS addressed									
Learning Outcome for the	Learning	Outcomes	L	earning Indic	ators	Identify which o	_		
lesson, picked and						issues – core an			
developed from the						transferable ski	•		
course specification	inclusivity, equity and								
Learning indicators for	addressing diversity. How will these be addressed or								
each learning outcome							iaressea or		
	Domons	trata			-1	developed?	:11 - 1		
	Demons			mploy techno		Develop ski Integration			
		anding and chnology		•	strategies for	Integration collaboration			
		es for solving	l l	olving proble		communica			
		nal problems		•	technologies	knowledge			
		ing informed		or solving pro			inclusion as		
		s. <i>NTS: 1a, 10</i>		se content-s		well as refle			
		s. NT3. 10, 10 ITECF: Pillar	_	oftware, and		critical thin			
	1& 3	Ci . r illul		uch as enviro		CHUCAL HIIII	NIIIB		
	14.5		1		ic calculators,				
				xpioratory er nd web tools	vironments,				
•				THE WALLET TOTAL		i e e e e e e e e e e e e e e e e e e e			

	•		Participate in collaborative problem-solving activities				
				problem-solving activities			
Topic Title: Issues in Digital technology in education	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 10 min			Face-to-face Tutor through questioning ask student teachers to discuss Issues in digital Technology in Education	Face-to-Face Student Teachers answer tutor's questions to set the pace for the week's lesson.		
	Impact on Education	50 min		Face-to- face & e-learning Guides student teachers to watch show short videos from YouTube, on Issues in Digital technology in education as it Impacts on Education.	Face-to-face & Practical Activity Student teachers share their views on Issues in Digital technology in education as it Impacts on Education.		
	Issues and I hour Implications			e-learning Shows short videos from YouTube, on Issues in Digital technology in education, Issues and Implications	e-learning Student teachers share their views on Issues in Digital technology in education, Issues and Implications		
	The Future	50 min		PracticalActivity. Guides student teachers in the use of their mobile phones to on Issues in Digital technology in education: The Future.	Independent Study & Seminar Student teachers share their views on Issues in Digital technology in education: The Future.		
	Lesson Closure	10 Min	utes	Guide student teachers to recap their discussion and the points identified in their discussions.	Student teachers recap the ideas/concepts learnt in the lesson		
Lesson assessments – evaluation of learning: of, for and as learning within the lesson	Summary of Assessment Method: Assessment As Student teachers to write reflective notes on their views on the role of educational technologies in education and the future of those technologies. These are to go into their portfolios Assesses Learning Outcomes: CLO3, CLO4, CLO5NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1& 3						
Instructional Resources	 Laptop Deskto Tablets TV and Open B acader TESSA The iBo Product Subject 	op compu s I Radio Educatior my,) ox (CEND ctivity too t based a	nal Re LOS) ols pplica	sources (Including: YouTube, N ation software ratories (with multimedia equip	AOOCS-Udemy/coursera, khan oment and smartboards)		
Required Text (core)	Abbott, C. (200: Januszewski, A. Englewood, CO	1). <i>ICT: CI</i> (2001). <i>E</i> : Libraries	hangi duca s Unli	ng education. London: Routled tional technology: The develop	ge-Falmer. ment of a concept.		

	Mahwah, NJ: Lawrence Erlbaum.					
Additional Reading List	Banks, J.A., & Banks, C.M. (2009). Multicultural education: Issues and perspectives.					
	Indianapolis, IN: Wiley					
	egory, G.H., &Chapman, C.M (2006). Differentiated instructional strategies: One size					
	doesn't fit all.					
	Thousand Oaks, CA: Corwin					
	Monteith, M. (2004). <i>ICT for curriculum enhancement</i> . Bristol: Intellect.					
	Moore, M. &Kearsley, G. (2005). Distance education: A systems view. Belmont, CA:					
	Thomson Wadsworth.					
	Robertson, M., Webb, I., &Fluck, A. (2007). Seven steps to ICT integration. Camberwell,					
	London: ACER					
	T-TEL (2015), Questioning, PD Guide for Tutors Handbook,					
	T-TEL (2015), Creative Approaches , PD Guide for Tutors Handbook					
	T-TEL (2016), Group Work, PD Guide for Tutors Handbook					
CPD needs	Workshops on Issues in Digital technology in education: The Future.					
	Writing reflective notes					
	Participating in a community of practice/conferences and accessing online					
	magazines (E-zines) & journals to obtain up to date content.					
	Team teaching and lesson observation to improve instructional strategies &					
	practices.					
	Supporting student teachers in collaborating in designing and developing a wiki.					
Course Assessment	¹ Component 1: Portfolio Assessment: (30% overall score)					
	 Selected items of students work (3 of them – 10% each)- 30% 					
	Midterm Assessment – 20%					
	Reflective Journal – 40%					
	Organisation of subject portfolio – 10% (how it is presented/organized)					
	² 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%					
	Component 3: End of Semester Examination – 40% overall					

 $^{^{1}}$ See rubric on Subject Portfolio Assessment in Annex 6 of NTEAP 2 See rubric on Subject ProjectAssessment in Annex 6 of NTEAP

