

**YEAR 2**

**SEMESTER 1**

# Four-Year B.Ed. Course Manual

## ICT MULTIMEDIA AUTHORIZING IN EDUCATION





The Government of Ghana



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# FOREWORD

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

The course manuals have been produced for use as general guides for the delivery of the new four-year B.Ed. curriculum in Colleges of Education in collaboration with their affiliated universities. They are designed to support student teachers, tutors and lecturers in delivering a complete B.Ed. course for training student teachers which 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, NTECF, 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 .....

# A. Course Information

## Title Page

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

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

### ii. Course Details

<b>Course name</b>	<b>MULTIMEDIA AUTHORIZING IN EDUCATION</b>						
<b>Pre-requisite</b>	Student teachers have taken the course 'Introduction to 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 which serves to meet their general technology/computer literacy requirement						
<b>Course Level</b>	<b>200</b>	<b>Course Code</b>		<b>Credit Value</b>	<b>3</b>	<b>Semester</b>	<b>1</b>

### Table of contents

#### 1. Goal for the Subject or Learning Area

This course is designed for Student teachers to be able to examine the use of a variety of media, including audio, video, text, and graphics to produce instructional multimedia products. Emphasis will also be placed on understanding the problem-solving skills associated with production relating to educational multimedia tools reflecting a client's or target audience's needs. The course emphasizes the use of multimedia application in developing multimedia content. The course also aims to prepare student teachers to be able to develop multimedia driven lessons, support the development of multimedia TLMs in school and be able to support pupils to learn to develop multimedia tools (**National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes**).

#### 2. 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 categorised 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.

#### 3. Course Description

This course intends to introduce student teachers to the creation of educational material and interactive lessons using practical multimedia tools. Emphasis will be placed on the integration of a variety of delivery systems in the production of instructional products. (**National Teachers' Standard: 2c, 2e, 3a, 3e, 3h, 3i, 3k, 3p/ NTECF: Pillar 1, 2 & 3, crosscutting issues; Core skills, Assessment**). Student teachers will examine the use of a variety of media, including audio, video, text, and graphics to produce instructional multimedia tool to support learning. Emphasis will also be placed on understanding the problem-solving skills associated with production of educational products reflecting a client's or target audience's needs. The course emphasizes the use of multimedia application in developing multimedia content. (**National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes**).

This course will equip student teachers the opportunity to design and create multimedia tools for Web pages. It will also provide student teachers with first-hand experience in the methodologies of multimedia presentation development related to the educational setting as well as an opportunity to analyze and use a variety of techniques and methods to develop effective and relevant multimedia learning activities to suit the 21<sup>st</sup> century classroom. (**National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes**).

#### 4. 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 collect data, analyse and reflect on interventions (CLO 5).

**Collaboration** is fostered through assigning group projects and presentation of various topics across units and encouraging a healthy school-community relationship

**Communicative skills** of student teacher would be enhanced through the examination, interrogation and presentation of their misconceptions and philosophies (CLO 1, CLO 2, CLO 3)

<p><b>Personal development &amp; Enquiry skills in action research</b> would be fostered acquiring skills for collecting data, analysing and initiating interventions for individual children and small groups (CLO 2, CLO 4).</p> <p><b>Respect for diversity and Individual differences</b> would be engendered in student teachers by applying appropriate interventions, examining and reflecting their usefulness (CLO 1, CLO 2, CLO 5)</p> <p><b>Honesty and Accountability</b> (CLO 5)</p>			
<b>5. Course Learning Outcomes</b>			
CLO 1. Demonstrate knowledge and understanding of Authoring systems <i>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</i>		1.1 State at least five (5) advantages of Authoring systems  1.2 Describe how Authoring systems impact learning  1.3 Explain the evolution of Authoring systems	
CLO 2. Demonstrate knowledge, understanding and use of Design Metaphor/ Authoring paradigms <i>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1, 3, &amp; 4</i>		2.1 Explain scripting Paradigms 2.2 Use Card Based / Scripting Paradigms 2.3 Use Icon Based/ Flow control Paradigms 2.4 Use Frame Paradigms	
CLO 3. Demonstrate knowledge and understanding in Authoring Interface and then perform Authoring Interface using, slide show metaphor, etc.. <i>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</i>		3.1 Use Slide Show Metaphor 3.2 Use Book Metaphor 3.3 Use TimeLine Metaphor 3.4 Use Icon Metaphor	
CLO 4. Demonstrate intermediate knowledge and understanding in Courseware in teaching. <i>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</i>		4.1 Explain and use Course tutorials 4.2 Explain and use Drill and Practice 4.3 Explain and use Problem Solving in the classroom	
CLO5. Demonstrate understanding and apply technology resources for solving educational problems, and making informed decisions. <i>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</i>		5.1 Use Visual and Object Oriented Authoring Environment 5.2 Explain and use Reusability / Object Oriented Icons 5.3 Explain and use multimedia and graphics 5.4 Explain and use reusability templates 5.5 Explain and use Multimedia Databases	
<b>6. Course Content</b>			
Unit/ Week	Topic	Sub-topic (if any)	Teaching and learning activity to achieve the learning outcomes
1	Courseware I	1.1 Course tutorials 1.2 Drill and Practice	Project- and problem- Based (Group Work), and inquiry-based learning (Questioning) to Illustrate Course tutorials and Drill and Practice, seminars (Talk for Learning), interactive discussions (Games), interactive multimedia presentations, tutorial and practical sessions, video analysis eg YouTube to discuss Course tutorials and Drill and Practice under courseware. 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 student teachers to create a wiki of observation of schools visit. <b>PD Guide Themes 1,2,3,4,5 &amp; 6</b>
2	Courseware II	2.1 Problem Solving 2.2 Simulation 2.3 Gaming	Project- and problem- Based (Group Work), and inquiry-based learning (Questioning) to Illustrate Problem Solving, Simulation, and Gaming, seminars (Talk for Learning), interactive discussions (Games), interactive multimedia presentations, tutorial and practical sessions, video analysis eg YouTube to discuss Problem Solving, Simulation, and Gaming. 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 student teachers to create a wiki of observation of schools visit. <b>PD Guide Themes 1,2,3,4,5 &amp; 6</b>
3	Introduction to Authoring Systems I	3.1 meaning and introduction	Seminars (Talk for Learning) & interactive discussions (Games) to introduce Authoring Systems, field trips, interactive multimedia presentations, video analysis (eg. From YouTube) to bring out the meaning of Authoring Systems. 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. <b>PD Guide Themes 1,2,3,4,5 &amp; 6</b>

4	<b>Introduction to Authoring Systems II</b>	4.1 evolution of Authoring systems 4.2 advantages of Authoring systems	Seminars (Talk for Learning) & interactive discussions (Games) to critically examine <i>evolution of Authoring Systems</i> , field trips, interactive multimedia presentations, video analysis (eg. From YouTube) to evaluate the <i>evolution of Authoring Systems and its advantages</i> . Using Creative Approaches (such as, games, storytelling, role play, songs and modelling) to stimulate and involve students when they interact with other students or to teach. <b>PD Guide Themes 1,2,3,4,5 &amp; 6</b>
5	<b>Authoring Interface</b>	5.1 Slide Show Metaphor 5.2 Book Metaphor 5.3 Timeline Metaphor 5.4 Icon Metaphor	Inquiry-based learning (Questioning), seminars (Talk for Learning) interactive discussions (Games), interactive multimedia presentations to examine the Slide Show Metaphor, field trips to observe the practices, tutorial and practical sessions, video analysis eg YouTube to discuss Book Metaphor, Timeline Metaphor, and Icon Metaphor. Using Creative Approaches (such as, games, storytelling, role play, songs and modelling) to stimulate and involve students when they interact with other students or to teach. <b>PD Guide Themes 1,2,3,4,5 &amp; 6</b>
6	<b>Special Features of the Authoring Systems I</b>	6.1 Visual and Object Oriented 6.2 Authoring Environment 6.3 Reusability / Object Oriented Icons	Project- and problem- Based (Group Work), and inquiry-based learning (Questioning) to illustrate Visual and Object Oriented, seminars (Talk for Learning), interactive discussions (Games), interactive multimedia presentations, tutorial and practical sessions, video analysis eg YouTube to discuss Authoring Environment, and Reusability / Object Oriented Icons. Using Creative Approaches (such as, games, storytelling, role play, songs and modelling) to stimulate and involve students when they interact with other students to teach student teachers to create a wiki of observation of schools visit. <b>PD Guide Themes 1,2,3,4,5 &amp; 6</b>
7	<b>Special Features of the Authoring Systems II</b>	7.1 Multimedia and graphics 7.2 Reusability templates	Project- and problem- Based (Group Work) to apply Multimedia and graphics, 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 Multimedia and graphics and then Reusability templates in the Classroom as it relates to socioeconomic, cultural and special needs differences in the classroom. Using Creative Approaches (such as, games, storytelling, role play, songs and modelling) to stimulate and involve students when they interact with other students to teach. <b>PD Guide Themes 1,2,3,4,5 &amp; 6</b>
8	<b>Special Features of the Authoring Systems III</b>	8.1 Multimedia Databases 8.2 Separation of Interface Design and Content Design	Project- and problem- Based (Group Work) to apply Multimedia Databases, Separation of Interface Design and Content Design 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 Multimedia Databases, Separation of Interface Design and Content Design. Using Creative Approaches (such as, games, storytelling, role play, songs and modelling) to stimulate and involve students when they interact with other students to teach. <b>PD Guide Themes 1,2,3,4,5 &amp; 6</b>
9	<b>Special Features of the Authoring Systems IV</b>	9.1 Internet Access 9.2 Button Based Interactivity 9.3 Question and Answer Correction and timer	Project- and problem- Based learning and practical sessions (Individual and Group Work) to create educational artefacts like e-portfolios, seminars (Talk for Learning), and interactive multimedia presentations, video analysis eg YouTube to discuss Internet Access, Button Based Interactivity, Question and Answer Correction and timer. <b>PD Guide Themes 1,2,3,4,5 &amp; 6</b>
10	<b>Design Metaphor/</b>	10.1 scripting Paradigms	Inquiry-based learning (Questioning), seminars (Talk for Learning) interactive

	<b>Authoring paradigms I</b>	10.2 Card Based / Scripting Paradigms	discussions (Games), interactive multimedia presentations to explain some examples of Design Metaphor such as scripting paradigms, field trips to observe the practices, tutorial and practical sessions, video analysis eg YouTube to discuss examples of design metaphor such as scripting paradigms. 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. <b>PD Guide Themes 1,2,3,4,5 &amp; 6</b>
11	<b>Design Metaphor/ Authoring paradigms II</b>	11.1Icon Based/ Flow control Paradigms 11.2Frame Paradigms 11.3 Cast/ Score/ Scrip Paradigms	Inquiry-based learning (Questioning), seminars (Talk for Learning) interactive discussions (Games), interactive multimedia presentations to examine the Icon Based/ Flow control Paradigms under design metaphor, field trips to observe the practices, tutorial and practical sessions, video analysis eg YouTube to discuss Icon Based/ Flow control Paradigms, as well as frame paradigms. 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. <b>PD Guide Themes 1,2,3,4,5 &amp; 6</b>
12	<b>Design Metaphor/ Authoring paradigms III</b>	12.1 Hierarchical Object Paradigms 12.2tagging Paradigms 12.3time-based Paradigms	Inquiry-based learning (Questioning), seminars (Talk for Learning) interactive discussions (Games), interactive multimedia presentations to examine the Hierarchical Object Paradigms, field trips to observe the practices, tutorial and practical sessions, video analysis eg YouTube to discuss tagging Paradigms and time-based Paradigms. 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. <b>PDGuideThemes 1,2,3,4,5 &amp; 6</b>

### 7. Teaching and Learning Strategies

- 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

### 8. 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
  - artefacts from practical work
  - reports of observation of schools visit etc.
  - reflective notes on various Authoringmultimedia authoring concepts from video analysis etc
  - Presentations from Video Analysis, individual and group work onmultimedia authoring concepts.
  - One (1) test/ Assignment/group work/quiz/class exercise to evaluate their understanding of Educational and Instructional technology concepts

#### Weighting: 30%

**CLO3:** Demonstrate knowledge and understanding in Authoring Interface and then perform Authoring Interface using, slide show metaphor, etc.

**CLO4:** Demonstrate intermediate knowledge and understanding in Courseware in teaching.

**CLO5:** Demonstrate intermediate knowledge and understanding of Special Features of Authoring Systems and perform multimedia Authoring using e.g. Reusability / Object Oriented Icons

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

- Project-/problem-/inquiry-based assessment: Identify, investigate, propose and create solutions using the TimeLine Metaphor, Icon Metaphor, Course tutorials ,Drill and Practice, (student Teachers) have been introduced to. E.g. explore the potential of the Visual and Object Oriented Authoring Environment as a means of personal learning and the respectful exchange of ideas and production

**Weighting: 40%**

Assesses Learning Outcomes:

**CLO3:** Demonstrate knowledge and understanding in Authoring Interface and then perform Authoring Interface using, slide show metaphor, etc.

**CLO4:** Demonstrate intermediate knowledge and understanding in Courseware in teaching.

**CLO5:** Demonstrate intermediate knowledge and understanding of Special Features of Authoring Systems and perform multimedia Authoring using e.g. Reusability / Object Oriented Icons

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

**Component 3: End of Semester Examination – 40% overall**

**Summary of Assessment Method:**

- Written tests/quizzes to examine their knowledge of Authoring systems, Design Metaphor/ Authoring paradigms (Weighting 20%).
- Practical examination to test student teacher’s knowledge of Authoring systems, Design Metaphor/ Authoring paradigms (Weighting 20%).

**Weighting: 40 %**

Assesses Learning Outcomes:

**CLO1:** Demonstrate knowledge and understanding of Authoring systems

**CLO2:** Demonstrate knowledge and understanding of Design Metaphor/ Authoring paradigms

**S: 1a, 1b, 1d, 2c, 2e, 3a, 3e, 3h, 3i, 3k, 3p**

- Critically and collectively reflects to improve teaching and learning.
  - Improves personal and professional development through lifelong learning and Continuous Professional Development.
  - Is guided by legal and ethical teacher codes of conduct in his or her development as a professional teacher.
- Has secure content knowledge, pedagogical knowledge and pedagogical content knowledge for the school and grade they teach in.
  - Understands how children develop and learn in diverse contexts and applies this in his or her teaching.
- Carries out small-scale action research to improve practice.
  - Creates a safe, encouraging learning environment.
  - Sets meaningful tasks that encourages learner collaboration and leads to purposeful learning.
  - Explains concepts clearly using examples familiar to students.

**9. Required Reading and Reference List**

- Arch, C.L (1994). Authoring interactive multimedia. AP Professional
- Koumi, J. (2006). *Designing Video and Multimedia for Open and Flexible Learning*. Hilton Park, New York: Routledge Falmer.
- Mayer, R. E. (2001). *Multimedia learning*. Cambridge, New York: Cambridge University Press.

**10. Additional Reading List**

- Shank, P. (2007). *The online learning idea book: 95 proven ways to enhance technology-based and blended learning*. San Francisco: Pfeiffer.
- Selected articles and online resources (youtube.com, MOOCs: Khan Academy, TESSA, Udemy etc)
- Professional Development Guide (PDG) for Tutors (All Themes)

**11. Teaching and Learning resources**

- Smartphones
- Laptops
- Desktop computers
- Tablets
- TV and Radio
- Open Educational Resources (Including: YouTube, MOOCs-Udemy/coursea, khan academy,
- TESSA)
- The iBox (CENDLOS)

- Productivity tools
- Subject based application software
- Instructional Laboratories (with multimedia equipment and smartboards)

#### **12. 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.

# Lesson 1

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Courseware I	Lesson Duration	3 Hours				
<b>Lesson description</b>	In this lesson, Student teachers will examine various software purposely developed for educational use. It will focus on understanding the nature of tutorial, problem solving and drill and practice software. The lesson emphasizes the use of multimedia courseware. Multimedia will include a variety of media, including audio, video, text, and graphics used in instructional multimedia products. This first lesson introduces student teachers to the course learning outcomes and the 3 assessment components of the course. <b>(National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</b>						
<b>Previous student teacher knowledge, prior learning (assumed)</b>	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						
<b>Possible barriers to learning in the lesson</b>	Some student teachers might not have had knowledge and understanding of Authoring Systems education in the 21 <sup>st</sup> century.						
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	<b>Face-to-face</b> [ v ]	<b>Practical Activity</b> [ v ]	<b>Work-Based Learning</b> [ v ]	<b>Seminars</b> [ v ]	<b>Independent Study</b> [ v ]	<b>e-learning opportunities</b> [ v ]	<b>Practicum</b>
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	<p><b>Face-to-face</b> – discussions of varying kinds should be used.</p> <p><b>e-learning opportunities</b> -Student teachers would watch videos on YouTube/videos about responsible use of technology systems.</p> <p><b>Seminars</b> – Both individual and group presentation of projects should be encouraged.</p> <p><b>Practical Activity</b>- student teachers will review work samples of other student teachers to explain progress or barriers to learning</p> <p><b>Group work:</b> 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</p> <p><b>Independent study:</b> 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/coursea, khan academy, TESSA) to support independent study.</p>						
<ul style="list-style-type: none"> <li><b>Overarching outcome, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</b></li> <li><b>Write in full aspects of the NTS addressed</b></li> </ul>	<p>Student Teachers will ;</p> <p>Demonstrate intermediate knowledge and understanding in Courseware in teaching. <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b></p>						
<ul style="list-style-type: none"> <li><b>Learning Outcome for the lesson, picked and developed from the course specification</b></li> <li><b>Learning indicators for each learning outcome</b></li> </ul>	<b>Learning Outcomes</b>	<b>Learning Indicators</b>		Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?			
	Demonstrate intermediate knowledge and understanding in Courseware in teaching. <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b>	1. Explain and use "Course tutorials" 2. Explain and use "Drill and Practice"		Acquire skills in addressing equity and gender issues, use ICT tools to equity and inclusion, develop critical thinking, problem solving, creativity, collaboration skills and reflective practice.			



Topic Title: Assistive devices	Sub-topic	Stage/time	Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.	
			Teacher Activity	Student Activity
	Introduction to Course Manual	30 minutes	<b>Teaching Activities:</b> <b>Face-to-face:</b> Tutor discusses the course manual with student teachers through questioning after review of Relevant Student Teacher prior Knowledge, 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; <ul style="list-style-type: none"> <li>• State at least five (5) advantages of Authoring systems</li> <li>• Describe how Authoring systems impact learning</li> <li>• Explain the evolution of Authoring systems. Among others</li> </ul>	<b>Student Activity</b> <b>Face-to-Face</b> 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 <b>activities</b>
	Introduction	20 mins	<b>Questioning:</b> Tutor uses questioning to review student teacher's experience with a computer software used in learning. (PDG Theme 2)	<b>Questioning:</b> Student teacher answers questions and explores their experience on how they have used software in the past to support their learning.
	Introduction to Courseware	30 Mins	<b>e-learning &amp; group work</b> Tutor shows student teachers short videos from YouTube explaining what a courseware is. Class is then put into small diverse groups to discuss how software can support learning.	<b>e-learning &amp; group work</b> Student teachers watch videos from YouTube explaining what a courseware is. They then discuss in their groups how software can support learning drawing from their own experiences and how software can support learning in their STS visit.
	Tutorials	40Mins	<b>e-learning &amp; Face-to-face</b> Tutor shows a video on what a tutorial is and how Information and communications technologies are used to develop tutorials. Student teachers then discuss in their groups the use of computer based tutorials in school and under which circumstances they will be effective.	<b>e-learning &amp; Face-to-face</b> Student teacher watches a video on what a tutorial is and how Information and communications technologies are used to develop tutorials. Student teachers then discuss in their groups the use of computer based tutorials in school, drawing from their experiences in the school. They also discuss and suggest which circumstances they will be effective. Student teachers then

				develop a wiki on “how computer-based tutorials can support learning and used in school.”
	Drill and Practice	40 Mins	<b>e-learning &amp; Face-to-face</b> Tutor shows a video on what a drill and practice is and how Information and communications technologies are used to develop drill and practice. Student teachers then discuss in their groups the use of computer-based drill and practice in school and suggest which circumstances they will be effective in supporting learning.	<b>e-learning &amp; Face-to-face</b> Student teacher watches a video on what a drill and practice is and how Information and communications technologies are used to develop drill and practices. Student teachers then discuss in their groups the use of computer-based drill and practice in school drawing from their experiences in the school. They also discuss and suggest which circumstances they will be effective. Student teachers then develop a wiki on “how computer-based drill and practice can support learning and used in school.”
	Lesson Closure	20 Mins	<b>Questioning:</b> Tutor uses questioning to summarise and recap the concepts covered for the day	<b>Questioning:</b> Student teacher responds to questions to summarise and recap the concepts covered for the day
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson</b>	<p><b>Summary of Assessment Method:</b></p> <p><b>Assessment as learning:</b> Wiki on “how computer-based tutorials can support learning and used in school” Wiki on “how computer-based drill and practice can support learning and used in school”. Wiki to go into Student teacher’s portfolio.</p> <p>Assesses Learning Outcomes:</p> <p><b>CLO4:</b> Demonstrate intermediate knowledge and understanding in Courseware in teaching.</p> <p><b>NTS: 1a, 1d, 2e, 3a, 3h, 3k, 3p/ NTECF: Pillar 1, 2 &amp; 3</b></p>			
<b>Instructional Resources</b>	<ul style="list-style-type: none"> <li>• Smartphones</li> <li>• Laptops</li> <li>• Desktop computers</li> <li>• Tablets</li> <li>• TV and Radio</li> <li>• Open Educational Resources (Including: YouTube, MOOCs-Udemy/courseera, khan academy,TESSA)</li> <li>• The iBox (CENDLOS)</li> <li>• Productivity tools</li> <li>• Subject based application software</li> <li>• Instructional Laboratories (with multimedia equipment and smartboards)</li> </ul>			
<b>Required Text (core)</b>	<ol style="list-style-type: none"> <li>1. Arch, C.L (2011). Authoring interactive multimedia. AP Professional</li> <li>2. Koumi, J. (2006). <i>Designing Video and Multimedia for Open and Flexible Learning</i>. Hilton Park, New York: Routledge Falmer.</li> <li>3. Mayer, R. E. (2001). <i>Multimedia learning</i>. Cambridge, New York: Cambridge University Press.</li> </ol>			
<b>Additional Reading List</b>	<ol style="list-style-type: none"> <li>1. <i>Shank, P. (2007). The online learning idea book: 95 proven ways to enhance technology-based and blended learning</i>. San Francisco: Pfeiffer.</li> <li>2. Selected articles and online resources (youtube.com, MOOCs: Khan Academy, TESSA, Udemy etc)</li> </ol>			

	3. Professional Development Guide (PDG) for Tutors (All Themes)
<b>CPD needs</b>	<p>Need for transfer of learning on course tutorials</p> <p>Writing reflective notes</p> <p>Participating in a community of practice/conferences and accessing online magazines (E-zines) &amp; journals to obtain up to date content.</p> <p>Team teaching and lesson observation to improve instructional strategies &amp; practices.</p> <p>Supporting student teachers in collaborating in designing and developing a wiki.</p>

# Lesson 2

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Courseware II				Lesson Duration	3 Hours	
Lesson description	In this lesson, Student teachers will examine various software purposely developed for educational use. It will focus on understanding the nature of Problem Solving, Simulation and Gaming software in education. The lesson emphasizes the use of multimedia courseware. Multimedia will include a variety of media, including audio, video, text, and graphics used in instructional multimedia products. <b>(National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</b>						
Previous student teacher knowledge, prior learning (assumed)	Student teachers have been introduced to Courseware 1, which exposed them to use of tutorials						
Possible barriers to learning in the lesson	Some student teachers might not have had knowledge and understanding of Authoring Systems education in the 21 <sup>st</sup> century.						
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face [ ✓ ]	Practical Activity [ ✓ ]	Work-Based Learning	Seminars [ ✓ ]	Independent Study [ ✓ ]	e-learning opportunities [ ✓ ]	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<p><b>Face-to-face</b> – Both teacher and student-led approaches such as discussions of varying kinds should be used.</p> <p><b>e-learning opportunities</b> -Student teachers would watch videos on YouTube/videos about responsible use of technology systems.</p> <p><b>Seminars</b> – Both individual and group presentation of projects should be encouraged.</p> <p><b>Practical Activity</b>- student teachers will review work samples of other student teachers to explain progress or barriers to learning</p> <p><b>Group work:</b> 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</p> <p><b>Independent study:</b> 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/coursea, khan academy, TESSA) to support independent study.</p>						
<ul style="list-style-type: none"> <li>Overarching outcome, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</li> <li>Write in full aspects of the NTS addressed</li> </ul>	<p>Student Teachers will :</p> <p>Demonstrate intermediate knowledge and understanding in Courseware in teaching.<b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b></p>						
<ul style="list-style-type: none"> <li>Learning Outcome for the lesson, picked and developed from the course specification</li> <li>Learning indicators for each learning outcome</li> </ul>	Learning Outcomes		Learning Indicators		Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?		
	Demonstrate intermediate knowledge and understanding in Courseware in teaching. <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b>		<ol style="list-style-type: none"> <li>Explain and use Simulation</li> <li>Explain and use educational Gaming</li> <li>Explain and use Problem Solving for learning</li> </ol>		These strategies will respond to inclusivity and equity (ie ICT as a tool for expanding learning to diverse learners eg. People with visual impairment, dyslexia, dysgraphia). Identify the instances when personal, cultural, and institutionalized discrimination are creating and/ or sustaining disadvantages for some student-teachers		

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
	Recap of previous week	20 Mins	<b>Face-to-Face:</b> Discussion of wikis developed from the previous lesson. Tutor leads brain storming session to identify the key advantages of the types of courseware discussed in the previous week.	<b>Face-to-Face:</b> Student teachers present the wikis developed from the previous lesson. They take part in the brain storming session to identify the key advantages of the types of courseware discussed in the previous week.
	Educational Problem-Solving software	40 Mins	<b>e-learning &amp; Face-to-face</b> Tutor shows a video on what a problem-solving software is and how Information and communications technologies are used to develop educational problem-solving software. Student teachers then discuss in their groups the use of problem-solving software in school and under which circumstances they will be effective in supporting learning.	<b>e-learning &amp; Face-to-face</b> Student teacher watches a video on what problem-solving is and how Information and communications technologies are used to develop problem-solving software to support learning. Student teachers then discuss in their groups the use of problem-solving software in school drawing from their experiences in the school. They also discuss and under which circumstances they will be effective. Student teachers then develop a wiki on “how problem-solving software can be used to support learning in school and when is best used in school to support learning.”
	Computer based Simulation	50 Mins	<b>e-learning &amp; Face-to-face</b> Tutor shows a video on what a simulation is and how Information and communications technologies are used to simulate real world situations. Student teachers then discuss in their groups the use of simulation software in school and under which circumstances they will be effective in supporting learning.	<b>e-learning &amp; Face-to-face</b> Student teacher watches a video on what simulation is and how Information and communications technologies are used to develop simulated environments to support learning. Student teachers then discuss in their groups the use of computer-based simulation in school drawing from their experiences in the school. They also discuss and under which circumstances they will be effective. Student teachers then develop a wiki on “when computer-based simulation is best used in school to support learning.”
	Serious Games	50 Mins	<b>e-learning &amp; Face-to-face</b> Tutor shows a video on what a drill and practice is, the history of serious game and how Information and communications technologies	<b>e-learning &amp; Face-to-face</b> Student teacher watches a video on what a serious game is and how Information and communications technologies are used to develop serious

			are used to develop serious games. Student teachers then discuss in their groups the use of gaming software in school and under which circumstances they will be effective in supporting learning.	game. Student teachers then discuss in their groups the use of computer-based educational games in school drawing from their experiences in the school. They also discuss and under which circumstances they will be effective. Student teachers then develop a wiki on “how serious games can be used to support learning in school.”
	Lesson Closure	20 Mins	<b>Group presentations:</b> Tutor moderates student teacher groups presentation to recap the concepts covered for the day	<b>Questioning:</b> Student teacher do presentations to recap the concepts covered for the day
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson</b>	<p><b>Summary of Assessment Method:</b>  <b>Assessment for Learning:</b> Group presentations of on problem solving, the computer-based simulation and serious gamesto go into portfolio.</p> <p>Assesses Learning Outcomes:  <b>CLO3:</b> Demonstrate knowledge and understanding in Authoring Interface and then perform Authoring Interface using, slide show metaphor, etc.  <b>CLO4:</b> Demonstrate intermediate knowledge and understanding in Courseware in teaching.  <b>CLO5:</b> Demonstrate intermediate knowledge and understanding of Special Features of Authoring Systems and perform multimedia Authoring using e.g. Reusability / Object Oriented Icons  <b>NTS: 1a, 1d, 2e, 3a, 3h, 3k, 3p/ NTECF: Pillar 1, 2 &amp; 3</b></p>			
<b>Instructional Resources</b>	<ul style="list-style-type: none"> <li>• Smartphones</li> <li>• Laptops</li> <li>• Desktop computers</li> <li>• Tablets</li> <li>• TV and Radio</li> <li>• Open Educational Resources (Including: YouTube, MOOCS-Udemy/courseera, khan academy,TESSA)</li> <li>• The iBox (CENDLOS)</li> <li>• Productivity tools</li> <li>• Subject based application software</li> <li>• Instructional Laboratories (with multimedia equipment and smartboards)</li> </ul>			
<b>Required Text (core)</b>	<ol style="list-style-type: none"> <li>1. Arch, C.L (1994). Authoring interactive multimedia. AP Professional</li> <li>2. Koumi, J. (2006). <i>Designing Video and Multimedia for Open and Flexible Learning</i>. Hilton Park, New York: Routledge Falmer.</li> <li>3. Mayer, R. E. (2001). <i>Multimedia learning</i>. Cambridge, New York: Cambridge University Press.</li> </ol>			
<b>Additional Reading List</b>	<ol style="list-style-type: none"> <li>1. <i>Shank, P. (2007). The online learning idea book: 95 proven ways to enhance technology-based and blended learning</i>. San Francisco: Pfeiffer.</li> <li>2. Selected articles and online resources (youtube.com, MOOCs: Khan Academy, TESSA, Udemy etc)</li> <li>3. Professional Development Guide (PDG) for Tutors (All Themes)</li> </ol>			
<b>CPD needs</b>	<p>Need for transfer of learning on courseware  Writing reflective notes  Participating in a community of practice/conferences and accessing online magazines (E-zines) &amp; journals to obtain up to date content.  Team teaching and lesson observation to improve instructional strategies &amp; practices.  Supporting student teachers in collaborating in designing and developing a wiki.</p>			

# Lesson 3

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 <b>3</b> 4 5 6 7 8 9 10 11 12
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<b>Title of Lesson</b>	Introduction to Authoring Systems I				<b>Lesson Duration</b>	<b>3 Hours</b>	
<b>Lesson description</b>	In this lesson Student teachers will examine the concept of multimedia. Emphasis will also be placed on understanding the problem-solving skills associated with production relating to business and/or educational products reflecting a client’s or target audience’s needs. The course emphasizes the use of multimedia application in developing multimedia content. <b>(National Teachers’ Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</b>						
<b>Previous student teacher knowledge, prior learning (assumed)</b>	Student teachers have been introduced to Courseware II, which exposed them to Educational Problem-Solving software						
<b>Possible barriers to learning in the lesson</b>	Some student teachers might not have had knowledge and understanding of Authoring Systems education in the 21 <sup>st</sup> century.						
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	<b>Face-to-Face</b> [ v ]	<b>Practical work</b> [v]	<b>Work Based Learning</b> [ ]	<b>Seminars</b> [ v ]	<b>Independent Study</b> [ ]	<b>e-learning opportunities</b> [v]	<b>Practicum</b> [ ]
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	<p><b>Face-to-Face:</b> lecturette, discussions and other talk for learning approaches should be employed</p> <p><b>Practical Activity:</b> Individual and group activities involving surfing the internet for current technological trends shaping education.</p> <p><b>E-learning opportunities:</b> information and other related material would be gleaned from the internet using their phones and other digital devices.</p> <p><b>Group work:</b> 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</p> <p><b>Independent study:</b> 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/coursea, khan academy, TESSA) to support independent study.</p>						
<ul style="list-style-type: none"> <li>Overarching outcome, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</li> <li>Write in full aspects of the NTS addressed</li> </ul>	<p><b>Student teachers will:</b></p> <p>Demonstrate knowledge and understanding of Authoring systems <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b></p>						
<ul style="list-style-type: none"> <li>Learning Outcomes for the lesson, picked and developed from the course specification</li> <li>Learning indicators for each learning outcome</li> </ul>	<b>Learning Outcomes</b>	<b>Learning Indicators</b>				<b>Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?</b>	
	Demonstrate knowledge and understanding of Authoring systems <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b>	1. Explain the concept of media and multimedia	2. Explain the features of Authoring systems	3. Describe the differences in at least three (3) multimedia Authoring systems	These strategies will respond to inclusivity and equity (ie ICT as a tool for expanding learning to diverse learners eg. People with visual		

			impairment, dyslexia, dysgraphia) . Identify the instances when personal, cultural, and institutionalized discrimination are creating and/ or sustaining disadvantages for some student-teachers	
<b>Week 1</b>  <b>Topic Title:</b>	<b>Sub-topic</b>	<b>Time and stage</b>	<b>Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.</b>	
			<b>Teaching Activities:</b>	
			<b>Student Activity</b>	
	Recap of previous week	20 Mins	<b>Face-to-Face:</b> Discussion of wikis developed from the previous lesson. Tutor leads brain storming session to identify the key advantages of the types of courseware discussed in the previous week.	<b>Face-to-Face:</b> Student teachers present the wikis developed from the previous lesson. They take part in the brain storming session to identify the key advantages of the types of courseware discussed in the previous week.
	Introduction to multimedia	<b>20 mins</b>	<b>E learning and Face to face:</b> Tutor shows images and videos and draws from the knowledge obtained from the introduction to information and communications technology course to lead a discussion of to identify and examine the different types of media are, how different medium impacts learning drawing on their experiences on how media influences learning in school. Discussion then examines what multimedia is and multimedia authoring is.	<b>E learning and Face to face:</b> Student teacher watches videos and images etc, analyses them and engage in the discussion to identify and examine different types of media and how they impact learning drawing on their experiences in school. They will then examine what multimedia and multimedia authoring.
Meaning and introduction to Authoring Systems	<b>40mins</b>	<b>Face-to-face&amp; E Learning:</b> Tutor shows student teachers short videos on Meaning and introduction to Authoring Systems using Creative Approaches (such as, games, storytelling, role play, songs and modelling).  <b>Seminar:</b> Tutor-led students to discussion on Meaning and introduction to Authoring Systems in small groups	<b>Face-to-Face &amp; e-learning</b> Students watch and analyse videos then surf the internet with their mobile phones for Meaning and introduction to Authoring Systems.  <b>Seminar:</b> Students report their findings through small group presentations	
Meaning and introduction to Authoring Systems menus	<b>40 mins</b>	<b>E-learning:</b> Tutor shows a video tutorial on how to use various relevant menus and features of some popular multimedia authoring systems.  <b>Seminar:</b> tutor then leads the groups to identify and discuss	<b>E-learning: Student teacher watches</b> video on the features of some popular multimedia authoring systems.  <b>Seminar:</b> Student teacher engages in a discussion to identify and the features and	



			the differences and how these can support teaching and learning.	differences of the various multimedia authoring systems and how these features can be used to create and support the creation of learning materials for use in school.
	Meaning and introduction to Authoring Systems UI layout	40 min	<b>Practical activity</b> Tutor guides student teachers to explore an interface of one Authoring Systems. Teacher shares a video tutorial introducing the menus and interface layout of the authoring system with students either to the whole class or to them via their mobile devices	<b>Practical activity</b> Student teachers watches the video tutorial and explores the user interface layout and menus of the Authoring Systems. They then make reflective notes on how these menus are used.
	Lesson Closure	20 Mins	<b>Questioning:</b> Tutor uses questioning to summarise and recap the concepts of authoring systems covered for the day	<b>Questioning:</b> Student teacher responds to questions to summarise and recap the concepts of authoring systems covered for the day
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson</b>	<p><b>In-lesson and Formative Assessment:</b> (Individual and Group Presentation). (NTS 1E, 2C, 3B)  <b>Assessment for learning:</b> Individual class engagement and group presentations on the meaning of multimedia, multimedia authoring and multimedia authoring systems and their uses in school in Particular. Presentation to go into Student teacher’s portfolio.</p> <p><b>Assessment as Learning:</b> Presentation of individual reflective notes on the menus and features of a multimedia authoring system. Presentation to go into Student teacher’s portfolio.</p> <p><b>core skills to be developed:</b> critical thinking, collaboration and communicative skills, personal development</p> <p>Assesses Learning Outcomes:  <b>CLO1:</b> Demonstrate knowledge and understanding of Authoring systems  <b>CLO2:</b> Demonstrate knowledge and understanding of Design Metaphor/ Authoring paradigms  <b>NTS: 1a, 1d, 2e, 3a, 3h, 3k, 3p/ NTECF: Pillar 1, 2 &amp; 3</b></p>			
<b>Instructional Resources</b>	<ul style="list-style-type: none"> <li>• Smartphones</li> <li>• Laptops</li> <li>• Desktop computers</li> <li>• Tablets</li> <li>• TV and Radio</li> <li>• Open Educational Resources (Including: YouTube, MOOCS-Udemy/courseera, khan academy, TESSA)</li> <li>• The iBox (CENDLOS)</li> <li>• Productivity tools</li> <li>• Subject based application software</li> <li>• x. Instructional Laboratories (with multimedia equipment and smartboards)</li> </ul>			
<b>Required Text (core)</b>	<ol style="list-style-type: none"> <li>1. Arch, C.L (1994). Authoring interactive multimedia. AP Professional</li> <li>2. Koumi, J. (2006). <i>Designing Video and Multimedia for Open and Flexible Learning</i>. Hilton Park, New York: Routledge Falmer.</li> <li>3. Mayer, R. E. (2001). <i>Multimedia learning</i>. Cambridge, New York: Cambridge University Press.</li> </ol>			
<b>Additional Reading List</b>	<ol style="list-style-type: none"> <li>1. Shank, P. (2007). <i>The online learning idea book: 95 proven ways to enhance technology-based and blended learning</i>. San Francisco: Pfeiffer.</li> <li>2. Selected articles and online resources (youtube.com, MOOCs: Khan Academy, TESSA, Udemy etc)</li> <li>3. Professional Development Guide (PDG) for Tutors (All Themes)</li> </ol>			
<b>CPD needs</b>	Accessing online resources in magazines(E-zines) & journals to obtain up to date content on the evolution of Authoring systems			

	<p>Writing reflective notes</p> <p>Participating in a community of practice/conferences and accessing online magazines (E-zines) &amp; journals to obtain up to date content.</p> <p>Team teaching and lesson observation to improve instructional strategies &amp; practices.</p> <p>Supporting student teachers in collaborating in designing and developing a wiki.</p>
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# Lesson 4

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 <b>4</b> 5 6 7 8 9 10 11 12
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<b>Title of Lesson</b>	Introduction to Authoring Systems II				<b>Lesson Duration</b>	<b>3 Hours</b>	
<b>Lesson description</b>	Student teachers will examine the evolution of Authoring systems from earlier multimedia authoring methods using programming languages to the current environments. Given the evolution student teachers will also examine the advantages of Authoring systems and discuss the how Authoring systems can impact teaching learning making it easy to combine a variety of media, including audio, video, text, and graphics to produce instructional multimedia products. <b>(National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</b>						
<b>Previous student teacher knowledge, prior learning (assumed)</b>	Student teachers have been introduced to the Meaning of Authoring Systems						
<b>Possible barriers to learning in the lesson</b>	Some student teachers might not have had knowledge and understanding of Authoring Systems education in the 21 <sup>st</sup> century.						
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	<b>Face-to-face</b> [ v ]	<b>Practical Activity</b> [ v ]	<b>Work-Based Learning</b>	<b>Seminars</b> [ ]	<b>Independent Study</b> [ ]	<b>e-learning opportunities</b> [ v ]	<b>Practicum</b>
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	<p><b>Face-to-face</b> – Both teacher and student-led approaches such as discussions of varying kinds should be used.</p> <p><b>E-learning opportunities</b> -Student teachers would watch videos on YouTube/videos about compatibility issues between types of technology.</p> <p><b>Seminars</b> – Both individual and group presentation of projects should be encouraged.</p> <p><b>Practical Activity</b>- student teachers will review work samples of other student teachers to explain progress or barriers to learning</p> <p><b>Group work:</b> 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</p> <p><b>Independent study:</b> 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.</p>						
<ul style="list-style-type: none"> <li><b>Overarching outcome, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</b></li> <li><b>Write in full aspects of the NTS addressed</b></li> </ul>	<p>Student teachers will:</p> <p>Demonstrate knowledge and understanding of Authoring systems <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b></p>						
<ul style="list-style-type: none"> <li><b>Learning Outcome for the lesson, picked and developed from the course specification</b></li> <li><b>Learning indicators for each learning outcome</b></li> </ul>	<b>Learning Outcomes</b>	<b>Learning Indicators</b>			<b>Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity.</b>		
	Demonstrate knowledge and understanding of Authoring systems <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b>	<ol style="list-style-type: none"> <li>1. Explain the evolution of Authoring systems</li> <li>2. State at least five (5) advantages of Authoring systems</li> <li>3. Describe how Authoring systems impact learning</li> </ol>			<p>These strategies will respond to inclusivity and equity (ie ICT as a tool for expanding learning to diverse learners eg. People with visual impairment, dyslexia, dysgraphia) . Identify the instances when personal, cultural, and institutionalized discrimination are creating and/ or sustaining disadvantages for some student-teachers</p>		

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
	Recap of previous lessons and RPK	15 mins	<b>Face to face:</b> Tutor guides student teacher to discuss their reflection notes on the menu of authoring systems and how it facilitates the creation of learning materials	<b>Face to face:</b> Student teacher presents and discusses their own and others reflective notes on authoring systems menu and how it facilitates the creation of learning materials
	Evolution of Authoring systems	60 min	<p><b>e-learning opportunities:</b> Tutor shows a video on how multimedia authoring was done using computer programming languages and distinguishes it from how multimedia authoring is done using multimedia authoring systems.</p> <p><b>Group Work:</b> Tutor breaks class into small diverse groups to analyse the video identifying how Authoring systems evolved and how this is relevant in the teaching and learning process.</p>	<p><b>e-learning opportunities:</b> Student teachers watch video on how multimedia authoring was done using computer programming languages and distinguishes it from how multimedia authoring is done using multimedia authoring systems.</p> <p><b>Group Work:</b> Student teachers participates in group discussions to analyse the video identifying how Authoring systems evolved and how this is relevant in the teaching and learning drawing on their observations in school and personal experiences</p>
	Advantages of Authoring systems	30 mins	<b>Questioning:</b> Tutor guides student teachers to bring to the fore Advantages of Authoring systems using questioning.	<b>Questioning:</b> Students answer questions to bring out the advantages of Authoring systems. Student teachers put together points to guide them in the search for Advantages of Authoring systems.
	Impact of Authoring systems on learning	60 mins	<b>Group discussion &amp; Seminar:</b> Tutor breaks class into their small diverse groups to discuss impact of authoring systems in developing teaching and learning materials considering their advantages and how they have evolved from earlier multimedia authoring methods.	<b>Group discussion &amp; Seminar:</b> Student teachers discuss in their groups how authoring systems aids teaching and learning considering the advantages and how they have evolved from earlier multimedia authoring methods. Groups make presentations on their findings.
	Closure	15 mins	<p><b>Closure:</b> Tutor guide the student teacher to recap the discussions for the day on the evolution, advantages and the impact of Multimedia authoring systems in school and on learning (PDG Theme 3).</p> <p>Tutor gives an assignment for student teachers to observe and write notes on the use of multimedia authoring systems in the classroom.</p>	<p><b>Closure:</b> Tutor guide the student teacher to recap the discussions for the day on the evolution, advantages and the impact of Multimedia authoring systems in school and on learning (PDG Theme 3).</p> <p>Tutor gives an assignment for student teachers to observe and write notes on the use of multimedia authoring systems in the classroom.</p>

<p><b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson</b></p>	<p><b>In-lesson Assessment</b>  <b>Summary of Assessment Method:</b>  <b>Assessment of Learning:</b> Tests/quizzes and class exercises to examine student teachers' knowledge of evolution of authoring systems. Eg. State at least five (5) advantages of Authoring systems, , Explain the evolution of Authoring systems. Test to go into Student teacher's portfolio.</p> <p>Assesses Learning Outcomes:  <b>CLO1:</b> Demonstrate knowledge and understanding of Authoring systems  <b>CLO2:</b> Demonstrate knowledge and understanding of Design Metaphor/ Authoring paradigms  <b>NTS: 1a, 1d, 2e, 3a, 3h, 3k, 3p/ NTECF: Pillar 1, 2 &amp; 3</b></p>
<p><b>Instructional Resources</b></p>	<ul style="list-style-type: none"> <li>• Smartphones</li> <li>• Laptops</li> <li>• Desktop computers</li> <li>• Tablets</li> <li>• TV and Radio</li> <li>• Open Educational Resources (Including: YouTube, MOOCS-Udemy/courseera, khan academy,TESSA)</li> <li>• The iBox (CENDLOS)</li> <li>• Productivity tools</li> <li>• Subject based application software</li> <li>• Instructional Laboratories (with multimedia equipment and smartboards)</li> </ul>
<p><b>Required Text (core)</b></p>	<ol style="list-style-type: none"> <li>1. Arch, C.L (1994). <i>Authoring interactive multimedia</i>. AP Professional</li> <li>2. Koumi, J. (2006). <i>Designing Video and Multimedia for Open and Flexible Learning</i>. Hilton Park, New York: Routledge Falmer.</li> <li>3. Mayer, R. E. (2001). <i>Multimedia learning</i>. Cambridge, New York: Cambridge University Press.</li> </ol>
<p><b>Additional Reading List</b></p>	<ol style="list-style-type: none"> <li>1. Shank, P. (2007). <i>The online learning idea book: 95 proven ways to enhance technology-based and blended learning</i>. San Francisco: Pfeiffer.</li> <li>2. Selected articles and online resources (youtube.com, MOOCs: Khan Academy, TESSA, Udemy etc)</li> <li>3. Professional Development Guide (PDG) for Tutors (All Themes)</li> </ol>
<p><b>CPD needs</b></p>	<p>How Authoring systems impact learning  Writing reflective notes  Participating in a community of practice/conferences and accessing online magazines (E-zines) &amp; journals to obtain up to date content.  Team teaching and lesson observation to improve instructional strategies &amp; practices.  Supporting student teachers in collaborating in designing and developing a wiki.</p>

# Lesson 5

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 <b>5</b> 6 7 8 9 10 11 12
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<b>Title of Lesson</b>	Authoring Interface				<b>Lesson Duration</b>	<b>3 Hours</b>	
<b>Lesson description</b>	In this lesson, Student teachers will examine the multimedia authoring interface. They will examine and understand how user interfaces of multimedia authoring tools have been designed to meet the needs of various metaphors including Slide Show Metaphor, Book Metaphor, TimeLine Metaphor and Icon Metaphor used in multimedia tools. They will also examine the various design issues that need to be considered in when using authoring tools to design multimedia tools to solve instructional problems. <b>(National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</b>						
<b>Previous student teacher knowledge, prior learning (assumed)</b>	Student teachers have been introduced to Evolution of Authoring systems						
<b>Possible barriers to learning in the lesson</b>	Some student teachers might not have had knowledge and understanding of Authoring Systems education in the 21 <sup>st</sup> century.						
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	<b>Face-to-face [ v ]</b>	<b>Practical Activity [ v ]</b>	<b>Work-Based Learning</b>	<b>Seminars [ v ]</b>	<b>Independent Study [ v ]</b>	<b>e-learning opportunities [ v ]</b>	<b>Practicum</b>
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	<p><b>Face-to-face</b> – Both teacher and student-led approaches such as discussions of varying kinds should be used.</p> <p><b>e-learning opportunities</b> -Student teachers would watch videos on YouTube/videos about responsible use of technology systems.</p> <p><b>Seminars</b> – Both individual and group presentation of projects should be encouraged.</p> <p><b>Practical Activity</b>- student teachers will review work samples of other student teachers to explain progress or barriers to learning.</p> <p><b>Group work:</b> 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</p> <p><b>Independent study:</b> 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/courseera, khan academy, TESSA) to support independent study.</p>						
<ul style="list-style-type: none"> <li><b>Overarching outcome, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</b></li> <li><b>Write in full aspects of the NTS addressed</b></li> </ul>	<p>Student teachers will:</p> <p>Demonstrate knowledge and understanding in <b>Authoring</b> Interface and the suitability of authoring interfaces for various metaphors. <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b></p>						
<ul style="list-style-type: none"> <li><b>Learning Outcome for the lesson, picked and developed from the course specification</b></li> <li><b>Learning indicators for each learning outcome</b></li> </ul>	<b>Learning Outcomes</b>	<b>Learning Indicators</b>			Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?		
	Demonstrate knowledge and understanding in Authoring Interface and	1. Explain the nature of a multimedia user authoring system interface			These strategies will respond to inclusivity and equity (ie ICT as a tool for expanding		

	then perform Authoring Interface using, slide show metaphor, etc.. <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b>	2. Explain the relation between authoring interface and Slide Show Metaphor,,Book Metaphor, TimeLine Metaphor and Icon Metaphor	learning to diverse learners eg. People with visual impairment, dyslexia, dysgraphia). Identify the instances when personal, cultural, and institutionalized discrimination are creating and/ or sustaining disadvantages for some student-teachers
<b>Topic Title:</b>	<b>Sub-topic</b>	<b>Stage/time</b>	<b>Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.</b>
			<b>Teacher Activity</b>
			<b>Student Activity</b>
	Recap of previous lessons and RPK	20 mins	<b>Questioning:</b> Tutor uses questioning to do a recap of the previous lesson and link it to the design issues in multimedia authoring.
Design issues in multimedia authoring	60 Mins	<b>E-learning &amp; face to face:</b> Tutor shows a video to explain the design issues that will be encountered including Display resolution, Data formats for captured data, Compression issues and Storage formats. These issues are discussed with respect appropriate configurations for using multimedia tools in the classroom.	<b>E-learning &amp; face to face:</b> Student teacher watches a video explaining the design issues that will be encountered including Display resolution, Data formats for captured data, Compression and Storage formats. These issues are discussed with respect appropriate configurations for using multimedia tools in the classroom considering their observations in school.
Multimedia authoring system interfaces	80 Mins	<b>E-learning &amp; face to face:</b> Tutor shows a video to briefly the key components of a various authoring system interfaces and how they have been designed to create various metaphors. Tutor then leads class in a discussion on how user interfaces presents a window to the user to control and specify where to insert and combine multimedia elements and to also control storage and retrieval, rules for playback and their suitability of an interface and Slide Show Metaphor, Book Metaphor, TimeLine Metaphor and Icon Metaphor. These issues are discussed with respect choosing the appropriate authoring system for developing multimedia tools for use in the classroom.	<b>E-learning &amp; face to face:</b> Student teacher watches a video on explaining the various authoring system interfaces and how they have been designed to work with specific metaphors. Tutor then leads class in a discussion how user interfaces presents a window to the user to control and specify where to insert and combine multimedia elements and to also control storage and retrieval, rules for playback and their suitability of an interface and Slide Show Metaphor, Book Metaphor, TimeLine Metaphor and Icon Metaphor. These issues are discussed with respect choosing the appropriate authoring system for developing multimedia tools for use in the classroom considering their observations in school.

	Lesson Closure	20 Mins	<b>Questioning:</b> Tutor uses questioning to summarise and recap the concepts covered for the day and tasks students to write reflective notes on the design issues relating to multimedia authoring	<b>Questioning:</b> Student teacher responds to questions to summarise and recap the concepts covered for the day write reflective notes on the design issues relating to multimedia authoring
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson</b>	<p><b>Summary of Assessment Method:</b>  <b>Assessment as learning:</b> Student teachers write reflective notes of design in using multimedia authoring tools in designing educational artefacts. Reflective notes to go into Student teacher’s portfolio.</p> <p><b>Assesses Learning Outcomes:</b>  <b>CLO1:</b> Demonstrate knowledge and understanding of Authoring systems  <b>CLO2:</b> Demonstrate knowledge and understanding of Design Metaphor/ Authoring paradigms  <b>NTS: 1a, 1d, 2e, 3a, 3h, 3k, 3p/ NTECF: Pillar 1, 2 &amp; 3</b></p>			
<b>Instructional Resources</b>	<ul style="list-style-type: none"> <li>• Smartphones</li> <li>• Laptops</li> <li>• Desktop computers</li> <li>• Tablets</li> <li>• TV and Radio</li> <li>• Open Educational Resources (Including: YouTube, MOOCS-Udemy/courseera, khan academy,TESSA)</li> <li>• The iBox (CENDLOS)</li> <li>• Productivity tools</li> <li>• Subject based application software</li> <li>• x. Instructional Laboratories (with multimedia equipment and smartboards)</li> </ul>			
<b>Required Text (core)</b>	<ol style="list-style-type: none"> <li>1. Arch, C.L (1994). Authoring interactive multimedia. AP Professional</li> <li>2. Koumi, J. (2006). <i>Designing Video and Multimedia for Open and Flexible Learning</i>. Hilton Park, New York: Routledge Falmer.</li> <li>3. Mayer, R. E. (2001). <i>Multimedia learning</i>. Cambridge, New York: Cambridge University Press.</li> </ol>			
<b>Additional Reading List</b>	<ol style="list-style-type: none"> <li>1. Shank, P. (2007). <i>The online learning idea book: 95 proven ways to enhance technology-based and blended learning</i>. San Francisco: Pfeiffer.</li> <li>1. Selected articles and online resources (youtube.com, MOOCs: Khan Academy, TESSA, Udemy etc)</li> <li>2. Professional Development Guide (PDG) for Tutors (All Themes)</li> </ol>			
<b>CPD needs</b>	<p>Need for how Book Metaphor impacts learning  Writing reflective notes  Participating in a community of practice/conferences and accessing online magazines (E-zines) &amp; journals to obtain up to date content.  Team teaching and lesson observation to improve instructional strategies &amp; practices.  Supporting student teachers in collaborating in designing and developing a wiki.</p>			



# Lesson 6

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 <b>6</b> 7 8 9 10 11 12
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<b>Title of Lesson</b>	Special Features of the Authoring Systems I				<b>Lesson Duration</b>	<b>3 Hours</b>	
<b>Lesson description</b>	In this lesson, Student teachers will examine the various features that make Multimedia Authoring Systems easy to use. It will focus on the use Visual and Object-Oriented Authoring Environment, Reusability / Object Oriented Icons and multimedia and graphics. <b>(National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</b>						
<b>Previous student teacher knowledge, prior learning (assumed)</b>	Student teachers have been introduced to Design issues in multimedia authoring						
<b>Possible barriers to learning in the lesson</b>	Some student teachers might not have had knowledge and understanding of Authoring Systems education in the 21 <sup>st</sup> century.						
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	<b>Face-to-face</b> [v]	<b>Practical Activity</b> [v]	<b>Work-Based Learning</b> [ ]	<b>Seminars</b> [v]	<b>Independent Study</b> [v]	<b>e-learning opportunities</b> [v]	<b>Practicum</b> [ ]
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	<p><b>Face-to-face</b> – Both teacher and student-led approaches such as discussions of varying kinds should be used.</p> <p><b>e-learning opportunities</b> -Student teachers would watch videos on YouTube/videos about responsible use of technology systems.</p> <p><b>Seminars</b> – Both individual and group presentation of projects should be encouraged.</p> <p><b>Practical Activity</b>- student teachers will review work samples of other student teachers to explain progress or barriers to learning</p> <p><b>Group work:</b> 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</p> <p><b>Independent study:</b> 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/courseera, khan academy, TESSA) to support independent study.</p>						
<ul style="list-style-type: none"> <li>Overarching outcome, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</li> <li>Write in full aspects of the NTS addressed</li> </ul>	<p>Student teachers will: Demonstrate intermediate knowledge and understanding in Courseware in teaching.<b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b></p>						
<ul style="list-style-type: none"> <li>Learning Outcome for the lesson, picked and developed from the course specification</li> <li>Learning indicators for each learning outcome</li> </ul>	<b>Learning Outcomes</b>	<b>Learning Indicators</b>			<b>Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?</b>		
	Demonstrate understanding and apply technology resources for solving educational problems, and making informed decisions. <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b>	<ol style="list-style-type: none"> <li>Use Visual and Object Oriented Authoring Environment</li> <li>Explain and use Reusability / Object Oriented Icons</li> </ol>			Activities will instil in student virtues such as honesty and critical thinking as they accurately evaluate and report on fair use of tools of technology adopted to address diverse learning needs. They will learn to avoid biases in favour of or against		

			3. Explain and use multimedia and graphics	specific gender, social class. Religion and ethnicity.
<b>Topic Title:</b>	<b>Sub-topic</b>	<b>Stage/time</b>	<b>Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.</b>	
			<b>Teacher Activity</b>	<b>Student Activity</b>
	Recap of previous lessons and RPK	20 mins	<b>Face to face:</b> Tutor guides student teacher to discuss their reflection notes on design issues in multimedia authoring.	<b>Face to face:</b> Student teacher presents and discusses their own and others reflective notes on design issues in multimedia authoring.
	Visual and object oriented paradigms	<b>30 Mins</b>	<b>Face-to-face</b> Uses questions to explore the concepts of Visual and Object-Oriented paradigms and reusability helping the student teachers build an understanding.	<b>Face-to-face</b> Student teachers answer questions to explore the concepts of Visual and Object-Oriented paradigms and reusability and build an understanding of the paradigms.
	Visual and Object Oriented Authoring Environment	<b>60 min</b>	<b>Interactive lecturette:</b> Tutor uses an interactive lecturette to explain how these paradigms relate to authoring environments and how they are used to develop multimedia tools. Using videos Tutor will explain how visual and object oriented environment work. Tutor leads a discussion of how visual and object oriented environment can enhance creation of teaching and learning materials	<b>Independent study &amp; Seminar</b> Student teachers participate in the interactive lecturette and watch videos to build an understanding of Visual and Object Oriented authoring environment. Student teachers engage in a discussion of how visual and object oriented environment can enhance creation of teaching and learning materials
	Reusability / Object Oriented Icons	<b>60 min</b>	<b>Interactive lecturette with video:</b> Tutor uses an interactive lecturette to explain how Reusability / Object Oriented Icons are used to develop multimedia tools. Using videos Tutor will explain how Reusability / Object Oriented Icons work. Tutor leads a discussion of how Reusability / Object Oriented Icons can enhance creation of teaching and learning materials	<b>Interactive lecturette with video:</b> Student teachers participate in the interactive lecturette and watch videos to build an understanding of Reusability / Object Oriented Icons. Student teachers engage in a discussion of how Reusability / Object Oriented Icons can enhance creation of teaching and learning materials
	Lesson Closure	<b>10 mins</b>	Tutor engages student teachers to recap lesson and tasks the students to produce a wiki on “the use of Visual and Object Oriented Authoring Environment, Reusability	Student tutor engages in a discussion to recap the key points of the lesson. Student teacher create wiki on “the use of Visual and Object Oriented Authoring Environment,

			/ Object Oriented Icons, Explain and use multimedia and graphics, reusability templates, multimedia and graphics in school". Wiki to be created before the next lesson.	Reusability / Object Oriented Icons, Explain and use multimedia and graphics, reusability templates, multimedia and graphics in school". Wiki to be created and presented during the next lesson.
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson</b>	<p><b>Summary of Assessment Method:</b></p> <p><b>Assessment as Learning:</b> Student teacher creates a wiki on “the use of Visual and Object-Oriented Authoring Environment, Reusability / Object Oriented Icons, Explain and use multimedia and graphics, reusability templates, multimedia and graphics in school”. Wiki to go into Student teacher’s portfolio.</p> <p>Assesses Learning Outcomes:</p> <p><b>CLO3:</b> Demonstrate knowledge and understanding in Authoring Interface and then perform Authoring Interface using, slide show metaphor, etc.</p> <p><b>CLO4:</b> Demonstrate intermediate knowledge and understanding in Courseware in teaching.</p> <p><b>CLO5:</b> Demonstrate intermediate knowledge and understanding of Special Features of Authoring Systems and perform multimedia Authoring using e.g. Reusability / Object Oriented Icons</p> <p><b>NTS: 1a, 1d, 2e, 3a, 3h, 3k, 3p/ NTECF: Pillar 1, 2 &amp; 3</b></p>			
<b>Instructional Resources</b>	<ul style="list-style-type: none"> <li>• Smartphones</li> <li>• Laptops</li> <li>• Desktop computers</li> <li>• Tablets</li> <li>• TV and Radio</li> <li>• Open Educational Resources (Including: YouTube, MOOCs-Udemy/courseera, khan academy, TESSA)</li> <li>• The iBox (CENDLOS)</li> <li>• Productivity tools</li> <li>• Subject based application software</li> <li>• Instructional Laboratories (with multimedia equipment and smartboards)</li> </ul>			
<b>Required Text (core)</b>	<ol style="list-style-type: none"> <li>1. Arch, C.L (1994). Authoring interactive multimedia. AP Professional</li> <li>2. Koumi, J. (2006). <i>Designing Video and Multimedia for Open and Flexible Learning</i>. Hilton Park, New York: Routledge Falmer.</li> <li>3. Mayer, R. E. (2001). <i>Multimedia learning</i>. Cambridge, New York: Cambridge University Press.</li> </ol>			
<b>Additional Reading List</b>	<ol style="list-style-type: none"> <li>1. Shank, P. (2007). <i>The online learning idea book: 95 proven ways to enhance technology-based and blended learning</i>. San Francisco: Pfeiffer.</li> <li>2. Selected articles and online resources (youtube.com, MOOCs: Khan Academy, TESSA, Udemey etc)</li> <li>3. Professional Development Guide (PDG) for Tutors (All Themes)</li> </ol>			
<b>CPD needs</b>	<p>Need for object oriented icons usage</p> <p>Writing reflective notes</p> <p>Participating in a community of practice/conferences and accessing online magazines (E-zines) &amp; journals to obtain up to date content.</p> <p>Team teaching and lesson observation to improve instructional strategies &amp; practices.</p> <p>Supporting student teachers in collaborating in designing and developing a wiki.</p>			

# Lesson 7

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 <b>7</b> 8 9 10 11 12
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<b>Title of Lesson</b>	Special Features of the Authoring Systems II				<b>Lesson Duration</b>	<b>3 Hours</b>	
<b>Lesson description</b>	1. In this lesson, Student teachers will examine the various features that make Multimedia Authoring Systems easy to use. It will focus on exploring the use of multimedia, graphics and reusability templates. <b>(National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</b>						
<b>Previous student teacher knowledge, prior learning (assumed)</b>	Student teachers have been introduced to Visual and object oriented paradigms						
<b>Possible barriers to learning in the lesson</b>	Some student teachers might not have had knowledge and understanding of Authoring Systems education in the 21 <sup>st</sup> century.						
<b>Lesson Delivery – chosen to support students in achieving the outcomes</b>	<b>Face-to-face</b> [ v ]	<b>Practical Activity</b> [ v ]	<b>Work-Based Learning</b>	<b>Seminars</b> [ v ]	<b>Independent Study</b> [ v ]	<b>e-learning opportunities</b> [ v ]	<b>Practicum</b>
<b>Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.</b>	<p><b>Face-to-face</b> – Both teacher and student-led approaches such as discussions of varying kinds should be used.</p> <p><b>e-learning opportunities</b> -Student teachers would watch videos on YouTube/videos about responsible use of technology systems.</p> <p><b>Seminars</b> – Both individual and group presentation of projects should be encouraged.</p> <p><b>Practical Activity</b>- student teachers will review work samples of other student teachers to explain progress or barriers to learning</p> <p><b>Group work:</b> 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</p> <p><b>Independent study:</b> 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/courseera, khan academy, TESSA) to support independent study.</p>						
<ul style="list-style-type: none"> <li><b>Overarching outcome, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</b></li> <li><b>Write in full aspects of the NTS addressed</b></li> </ul>	<p>Student Teachers will:</p> <p>Demonstrate understanding and apply technology resources for solving educational problems, and making informed decisions. <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b></p>						
<ul style="list-style-type: none"> <li><b>Learning Outcome for the lesson, picked and developed from the course specification</b></li> <li><b>Learning indicators for each learning outcome</b></li> </ul>	<b>Learning Outcomes</b>	<b>Learning Indicators</b>			Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?		
	Demonstrate understanding and apply technology resources for solving educational problems, and making informed decisions. <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b>	<ol style="list-style-type: none"> <li>1. Explain and use multimedia and graphics</li> <li>2. Explain and use reusability templates</li> </ol>			Develop skills in Integration of ICT, collaboration and communication, knowledge on equity, gender and Inclusion as well as reflection and critical thinking		

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
	Recap of previous lesson	30 mins	<b>Face-to-Face:</b> Discussion of wikis of “the use of Visual and Object-Oriented Authoring Environment, Reusability / Object Oriented Icons, Explain and use multimedia and graphics, reusability templates, multimedia and graphics in school” developed after the previous lesson and using that to introduce the use of reusable templates and multimedia and graphics. Tutor leads brain storming session to define and identify the key points in defining computer software and hardware. Use a concepts maps to link the key points.	<b>Face-to-Face:</b> Student teacher presents wikis on “the use of Visual and Object-Oriented Authoring Environment, Reusability / Object Oriented Icons, Explain and use multimedia and graphics, reusability templates, multimedia and graphics in school” developed after the previous lesson and using materials from the wiki to introduce the use of reusable templates and multimedia and graphics. Tutor leads brain storming session to define and identify the key points in defining computer software and hardware. Use a concepts maps to link the key points.
	Multimedia and graphics	70 min	<b>Interactive lecturette with video:</b> Tutor uses an interactive lecturette to explain how Multimedia and graphics are used to develop multimedia tools. Using videos Tutor will explain how Multimedia and graphics. Tutor leads a discussion of how Multimedia and graphics can enhance creation of other Multimedia teaching and learning materials	<b>Interactive lecturette with video:</b> Student teachers participate in the interactive lecturette and watch videos build an understanding of Multimedia and graphics. Student teachers engage in a discussion of how Multimedia and graphics can enhance creation of teaching and learning materials
	Reusability templates	70 min	<b>Interactive lecturette with video:</b> Tutor uses an interactive lecturette to explain how Reusability templates are used to develop multimedia tools. Using videos Tutor will explain how Reusability templates work. Tutor leads a discussion of how Reusability templates can enhance creation of teaching and learning materials	<b>Interactive lecturette with video:</b> Student teachers participate in the interacting and watch videos build an understanding of Reusability templates. Student teachers engage in a discussion of how Reusability templates can enhance creation of teaching and learning materials
	Lesson Closure	10 Mins	<b>Questioning:</b> Tutor uses questioning to summarise and recap the concepts covered for the day	<b>Questioning:</b> Student teacher responds to questions to summarise and recap the concepts covered for the day
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson</b>	<b>Summary of Assessment Method:</b> <b>Assessment of Learning:</b> Tests/quizzes and class exercises to examine student teachers’ knowledge of multimedia and graphics reusable templates and multimedia paradigms in education. Eg. State at least five (5) ways multimedia can enhance teaching and learning, Explain the advantages of multimedia over text based course materials. Test to go into Student teacher’s portfolio.  Assesses Learning Outcomes:			

	<p><b>CLO3:</b> Demonstrate knowledge and understanding in Authoring Interface and then perform Authoring Interface using, slide show metaphor, etc.</p> <p><b>CLO4:</b> Demonstrate intermediate knowledge and understanding in Courseware in teaching.</p> <p><b>CLO5:</b> Demonstrate intermediate knowledge and understanding of Special Features of Authoring Systems and perform multimedia Authoring using e.g. Reusability / Object Oriented Icons</p> <p><b>NTS: 1a, 1d, 2e, 3a, 3h, 3k, 3p/ NTECF: Pillar 1, 2 &amp; 3</b></p>
<b>Instructional Resources</b>	<ul style="list-style-type: none"> <li>• Smartphones</li> <li>• Laptops</li> <li>• Desktop computers</li> <li>• Tablets</li> <li>• TV and Radio</li> <li>• Open Educational Resources (Including: YouTube, MOOCS-Udemy/courseera, khan academy, TESSA)</li> <li>• The iBox (CENDLOS)</li> <li>• Productivity tools</li> <li>• Subject based application software</li> <li>• Instructional Laboratories (with multimedia equipment and smartboards)</li> </ul>
<b>Required Text (core)</b>	<ol style="list-style-type: none"> <li>1. Arch, C.L (1994). Authoring interactive multimedia. AP Professional</li> <li>2. Koumi, J. (2006). <i>Designing Video and Multimedia for Open and Flexible Learning</i>. Hilton Park, New York: Routledge Falmer.</li> <li>4. Mayer, R. E. (2001). <i>Multimedia learning</i>. Cambridge, New York: Cambridge University Press.</li> </ol>
<b>Additional Reading List</b>	<ol style="list-style-type: none"> <li>1. Shank, P. (2007). <i>The online learning idea book: 95 proven ways to enhance technology-based and blended learning</i>. San Francisco: Pfeiffer.</li> <li>2. Selected articles and online resources (youtube.com, MOOCs: Khan Academy, TESSA, Udemy etc)</li> <li>3. Professional Development Guide (PDG) for Tutors (All Themes)</li> </ol>
<b>CPD needs</b>	<p>Workshops on planning and developing Portfolio (including E-portfolio)including Multimedia and graphics</p> <p>Writing reflective notes</p> <p>Participating in a community of practice/conferences and accessing online magazines (E-zines) &amp; journals to obtain up to date content.</p> <p>Team teaching and lesson observation to improve instructional strategies &amp; practices.</p> <p>Supporting student teachers in collaborating in designing and developing a wiki.</p>

# Lesson 8

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 <b>8</b> 9 10 11 12
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Title of Lesson	Special Features of the Authoring Systems III	Lesson Duration	3 Hours
Lesson description	Student teachers will examine the use of a variety of media, including audio, video, text, and graphics to produce instructional multimedia products. Emphasis will also be placed on understanding the problem-solving skills associated with production relating to business and/or educational products reflecting a client's or target audience's needs. The course emphasizes the use of multimedia application in developing multimedia content. <b>(National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</b>		
Previous student teacher knowledge, prior learning (assumed)	Student teachers have been introduced to Multimedia and graphics		
Possible barriers to learning in the lesson	Some student teachers might not have had knowledge and understanding of Authoring Systems education in the 21 <sup>st</sup> century.		
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face [ v ]	Practical Activity [ v ]	Work-Based Learning [ v ]
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<p><b>Face-to-face</b> – Both teacher and student-led approaches such as discussions of varying kinds should be used.</p> <p><b>e-learning opportunities</b> -Student teachers would watch videos on YouTube/videos about responsible use of technology systems.</p> <p><b>Seminars</b> – Both individual and group presentation of projects should be encouraged.</p> <p><b>Practical Activity</b>- student teachers will review work samples of other student teachers to explain progress or barriers to learning.</p> <p><b>Group work:</b> 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.</p> <p><b>Independent study:</b> 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/courseera, khan academy, TESSA) to support independent study.</p>	Independent Study [ v ]	e-learning opportunities [ v ]
<ul style="list-style-type: none"> <li>Overarching outcome, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</li> <li>Write in full aspects of the NTS addressed</li> </ul>	<p>Student Teachers will:</p> <p>Demonstrate understanding and apply technology resources for solving educational problems, and making informed decisions. <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b></p>		
<ul style="list-style-type: none"> <li>Learning Outcome for the lesson, picked and developed from the course specification</li> <li>Learning indicators for each learning outcome</li> </ul>	Learning Outcomes	Learning Indicators	Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?
	Demonstrate understanding and apply technology resources for solving educational problems, and making informed decisions. <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b>	Explain and use Multimedia Databases	Develop skills in Integration of ICT, collaboration and communication, knowledge on equity, gender and Inclusion as well as reflection and critical thinking

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
	Recap of previous lessons	15 mins	<b>Face to face:</b> Tutor guides student teacher to discuss and recap their knowledge in Multimedia graphics and reusable templates.	<b>Face to face:</b> Student teacher is guided to discuss and recap their knowledge in Multimedia graphics and reusable templates
	Multimedia Databases	75 min	<p><b>Face-to- face &amp; e-learning</b> Guides student teachers to watch short videos from YouTube, on Multimedia Databases.</p> <p><b>e-learning</b> Shows short videos from YouTube, process in selecting Multimedia Databases</p>	<p><b>Face-to-face &amp; Practical Activity</b> Student teachers share their views on Multimedia Databases and select samples of Multimedia Databases to be included in their portfolio.</p> <p><b>e-learning</b> Student teachers share their views on process in selecting Multimedia Databases and how they contribute to creating multimedia tools for learning.</p>
	Separation of Interface Design and Content Design	75 min	<p><b>Practical Activity.</b> Guides student teachers in the use of their mobile phones to do activities on separation of interface design and content design for Instruction.</p> <p><b>Face-to-face</b> Guides student teachers to use concept mapping to discuss the separation of interface design and content design in Instruction.</p>	<p><b>Independent Study &amp; Seminar</b> Student teachers share their views on separation of interface design and content design for Instruction.</p> <p>Based on the videos watched, student teachers discuss in groups, and justify the separation of interface design and content design for Instruction.</p> <p><b>Practical Activity</b> Through concept mapping, student teachers (in groups), discuss the separation of interface design and content design for Instruction and use PowerPoint to present their findings.</p>
	Lesson Closure	15 Mins	<b>Questioning:</b> Tutor uses questioning to summarise and recap the concepts covered for the day	<b>Questioning:</b> Student teacher responds to questions to summarise and recap the concepts covered for the day



<p><b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson</b></p>	<p><b>Summary of Assessment Method:</b>  <b>Assessment of Learning:</b>develop artefact and write technical report on it. Student teacher to add artefacts from practical work including presentation slides to e-portfolios</p> <p>Assesses Learning Outcomes:  <b>CLO3:</b> Demonstrate knowledge and understanding in Authoring Interface and then perform Authoring Interface using, slide show metaphor, etc.  <b>CLO4:</b> Demonstrate intermediate knowledge and understanding in Courseware in teaching.  <b>CLO5:</b> Demonstrate intermediate knowledge and understanding of Special Features of Authoring Systems and perform multimedia Authoring using e.g. Reusability / Object Oriented Icons  <b>NTS: 1a, 1d, 2e, 3a, 3h, 3k, 3p/ NTECF: Pillar 1, 2 &amp; 3</b></p>
<p><b>Instructional Resources</b></p>	<ul style="list-style-type: none"> <li>• Smartphones</li> <li>• Laptops</li> <li>• Desktop computers</li> <li>• Tablets</li> <li>• TV and Radio</li> <li>• Open Educational Resources (Including: YouTube, MOOCS-Udemy/courseera, khan academy,TESSA)</li> <li>• The iBox (CENDLOS)</li> <li>• Productivity tools</li> <li>• Subject based application software</li> <li>• Instructional Laboratories (with multimedia equipment and smartboards)</li> </ul>
<p><b>Required Text (core)</b></p>	<ol style="list-style-type: none"> <li>1. Arch, C.L (1994). Authoring interactive multimedia. AP Professional</li> <li>2. Koumi, J. (2006). <i>Designing Video and Multimedia for Open and Flexible Learning</i>. Hilton Park, New York: Routledge Falmer.</li> <li>3. Mayer, R. E. (2001). <i>Multimedia learning</i>. Cambridge, New York: Cambridge University Press.</li> </ol>
<p><b>Additional Reading List</b></p>	<ol style="list-style-type: none"> <li>1. <i>Shank, P. (2007). The online learning idea book: 95 proven ways to enhance technology-based and blended learning</i>. San Francisco: Pfeiffer.</li> <li>2. Selected articles and online resources (youtube.com, MOOCs: Khan Academy, TESSA, Udemy etc)</li> <li>3. Professional Development Guide (PDG) for Tutors (All Themes)</li> </ol>
<p><b>CPD needs</b></p>	<p>Workshop on Special Features of the Authoring Systems  Writing reflective notes  Participating in a community of practice/conferences and accessing online magazines (E-zines) &amp; journals to obtain up to date content.  Team teaching and lesson observation to improve instructional strategies &amp; practices.  Supporting student teachers in collaborating in designing and developing a wiki.</p>

# Lesson 9

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 <b>9</b> 10 11 12
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Title of Lesson	Special Features of the Authoring Systems IV			Lesson Duration	3 Hours	
Lesson description	Student teachers will examine the use of a variety of media, including audio, video, text, and graphics to produce instructional multimedia products. Emphasis will also be placed on understanding the problem solving skills associated with production relating to business and/or educational products reflecting a client's or target audience's needs. The course emphasizes the use of multimedia application in developing multimedia content. <b>(National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</b>					
Previous student teacher knowledge, prior learning (assumed)	Student teachers have been introduced to Multimedia Databases					
Possible barriers to learning in the lesson	Some student teachers might not have had knowledge and understanding of Authoring Systems education in the 21 <sup>st</sup> century.					
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face [v]	Practical Activity [v]	Work-Based Learning	Seminars [v]	Independent Study [v]	e-learning opportunities [v] Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<p><b>Face-to-face</b> – Both teacher and student-led approaches such as discussions of varying kinds should be used.</p> <p><b>e-learning opportunities</b> -Student teachers would watch videos on YouTube/videos about responsible use of technology systems.</p> <p><b>Seminars</b> – Both individual and group presentation of projects should be encouraged.</p> <p><b>Practical Activity</b>- student teachers will review work samples of other student teachers to explain progress or barriers to learning</p> <p><b>Group work:</b> 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</p> <p><b>Independent study:</b> 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.</p>					
<ul style="list-style-type: none"> <li>Overarching outcome, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</li> <li>Write in full aspects of the NTS addressed</li> </ul>	<p>Student teachers will:</p> <p>Demonstrate understanding and apply technology resources for solving educational problems, and making informed decisions. <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b></p>					
<ul style="list-style-type: none"> <li>Learning Outcome for the lesson, picked and developed from the course specification</li> <li>Learning indicators for each learning outcome</li> </ul>	Learning Outcomes		Learning Indicators		Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?	
	Demonstrate understanding and apply technology resources for solving educational problems, and making informed decisions. <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b>		3. Internet Access 4. Button Based Interactivity 5. Question and Answer Correction and timer		Develop skills in Integration of ICT, collaboration and communication, knowledge on equity, gender and Inclusion as well as reflection and critical thinking.	

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
	Recap of previous lessons	15 mins	<b>Face to face:</b> Tutor guides student teacher to recap concepts on design and content from previous lesson	<b>Face to face:</b> Student teacher is guided to recap concepts on design and content from previous lesson
	Internet Access	<b>55 Mins</b>	<b>Face-to-face &amp; e-learning</b> Guides student teachers to watch short videos from YouTube, on Internet Access in education as it impacts on Education. Tutor guides students to interactively an analysis of the video	<b>Face-to-face &amp; Practical Activity</b> Student teachers share their views on Internet Access in education as it impacts on Education. Student teacher do a video analysis
	Button Based Interactivity	<b>55 Mins</b>	<b>e-learning</b> Shows short videos from YouTube, on Button Based Interactivity, Issues and Implications. Tutor guides students to do an analysis of the videos	<b>e-learning</b> Student teachers share their views on Button Based Interactivity, Issues and Implications. Student teacher do an analysis of the videos
	Question and Answer Correction and timer	<b>45 min</b>	<b>PracticalActivity.</b> Guides student teachers in the use of their mobile phones to on Question and Answer Correction and timer	<b>Independent Study &amp; Seminar</b> Student teachers share their views on Question and Answer Correction and timer.
	Lesson Closure	10 Mins	<b>Questioning:</b> Tutor uses questioning to summarise and recap the concepts covered for the day and tasks students to write reflective notes on interactivity, button-based activity question & answer, correction and timer.	<b>Questioning:</b> Student teacher responds to questions to summarise and recap the concepts covered for the day write reflective notes on interactivity, button-based activity question & answer, correction and timer.
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson</b>	<p><b>Summary of Assessment Method:</b></p> <p><b>Assessment as learning:</b> Reflective notes on interactivity, button-based activity question &amp; answer, correction and timer. Reflective notes to go into Student teacher's portfolio.</p> <p>Assesses Learning Outcomes:</p> <p><b>CLO3:</b> Demonstrate knowledge and understanding in Authoring Interface and then perform Authoring Interface using, slide show metaphor, etc.</p> <p><b>CLO4:</b> Demonstrate intermediate knowledge and understanding in Courseware in teaching.</p> <p><b>CLO5:</b> Demonstrate intermediate knowledge and understanding of Special Features of Authoring Systems and perform multimedia Authoring using e.g. Reusability / Object Oriented Icons</p> <p><b>NTS: 1a, 1d, 2e, 3a, 3h, 3k, 3p/ NTECF: Pillar 1, 2 &amp; 3</b></p>			

<b>Instructional Resources</b>	<ul style="list-style-type: none"> <li>• Smartphones</li> <li>• Laptops</li> <li>• Desktop computers</li> <li>• Tablets</li> <li>• TV and Radio</li> <li>• Open Educational Resources (Including: YouTube, MOOCS-Udemy/courseera, khan academy,TESSA)</li> <li>• The iBox (CENDLOS)</li> <li>• Productivity tools</li> <li>• Subject based application software</li> <li>• x. Instructional Laboratories (with multimedia equipment and smartboards)</li> </ul>
<b>Required Text (core)</b>	<ol style="list-style-type: none"> <li>1. Arch, C.L (1994). <i>Authoring interactive multimedia</i>. AP Professional</li> <li>2. Koumi, J. (2006). <i>Designing Video and Multimedia for Open and Flexible Learning</i>. Hilton Park, New York: Routledge Falmer.</li> <li>3. Mayer, R. E. (2001). <i>Multimedia learning</i>. Cambridge, New York: Cambridge University Press.</li> </ol>
<b>Additional Reading List</b>	<ol style="list-style-type: none"> <li>1. Shank, P. (2007). <i>The online learning idea book: 95 proven ways to enhance technology-based and blended learning</i>. San Francisco: Pfeiffer.</li> <li>2. Selected articles and online resources (youtube.com, MOOCS: Khan Academy, TESSA, Udemy etc)</li> <li>3. Professional Development Guide (PDG) for Tutors (All Themes)</li> </ol>
<b>CPD needs</b>	<p>Workshop on Special Features of the Authoring Systems</p> <p>Writing reflective notes</p> <p>Participating in a community of practice/conferences and accessing online magazines (E-zines) &amp; journals to obtain up to date content.</p> <p>Team teaching and lesson observation to improve instructional strategies &amp; practices.</p> <p>Supporting student teachers in collaborating in designing and developing a wiki.</p>

# Lesson 10

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 <b>10</b> 11 12
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Title of Lesson	Design Metaphor/ Authoring paradigms I				Lesson Duration	3 Hours	
Lesson description	Student teachers will examine the use of a variety of media, including audio, video, text, and graphics to produce instructional multimedia products. Emphasis will also be placed on understanding the problem solving skills associated with production relating to business and/or educational products reflecting a client's or target audience's needs. The course emphasizes the use of multimedia application in developing multimedia content. <b>(National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</b>						
Previous student teacher knowledge, prior learning (assumed)	Student teachers have been introduced to Button Based Interactivity						
Possible barriers to learning in the lesson	Some student teachers might not have had knowledge and understanding of Authoring Systems education in the 21 <sup>st</sup> century.						
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face [ v ]	Practical Activity [ v ]	Work-Based Learning	Seminars [ v ]	Independent Study [ v ]	e-learning opportunities [ v ]	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<p><b>Face-to-face</b> – Both teacher and student-led approaches such as discussions of varying kinds should be used.</p> <p><b>e-learning opportunities</b> -Student teachers would watch videos on YouTube/videos about responsible use of technology systems.</p> <p><b>Seminars</b> – Both individual and group presentation of projects should be encouraged.</p> <p><b>Practical Activity</b>- student teachers will review work samples of other student teachers to explain progress or barriers to learning</p> <p><b>Group work:</b> 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</p> <p><b>Independent study:</b> 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/courseera, khan academy, TESSA) to support independent study.</p>						
<ul style="list-style-type: none"> <li>Overarching outcome, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</li> <li>Write in full aspects of the NTS addressed</li> </ul>	<p>Student teachers will:</p> <p>Demonstrate knowledge and understanding of Authoring systems <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b></p>						
<ul style="list-style-type: none"> <li>Learning Outcome for the lesson, picked and developed from the course specification</li> <li>Learning indicators for each learning outcome</li> </ul>	Learning Outcomes	Learning Indicators			Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity.		
	Demonstrate knowledge and understanding and use of Design Metaphor/ Authoring <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1&amp; 3</b>	<ul style="list-style-type: none"> <li>Explain authoring metaphors</li> <li>Explain and use scripting Paradigms</li> <li>Explain and Use Card Based / Scripting Paradigms</li> </ul>			These strategies will respond to inclusivity and equity (ie ICT as a tool for expanding learning to diverse learners eg. People with visual impairment,		

			dyslexia, dysgraphia). Identify the instances when personal, cultural, and institutionalized discrimination are creating and/ or sustaining disadvantages for some student-teachers
	<b>Sub-topic</b>	<b>Stage/time</b>	<b>Teaching and learning activities to achieve outcomes depending on the delivery mode selected. Teacher-led collaborative group work or independent.</b>
			<b>Teacher Activity</b>
			<b>Student Activity</b>
	Recap of previous week	10 Mins	<b>Face-to-Face:</b> Tutor leads brain storming session to identify and recap the key concepts of interactivity, button-based activity question & answer, correction and timer.
	Multimedia Authoring metaphors	25 mins	<b>Lecturette &amp; Questioning:</b> Tutor gives a brief interactive lecturette on what multimedia authoring means and uses question to elicit answers to draw out meaning of multimedia authoring metaphors
	Types of Multimedia Authoring metaphors	30 mins	<b>e-learning and discussion:</b> Tutor Shows short videos introducing students to the types of authoring metaphors/paradigms. Tutor then leads a discussion on how these methods can be applied to develop teaching and learning materials.
	scripting Paradigms	25 minutes	<b>e-learning</b> Shows short videos from YouTube on scripting paradigm the need, uses for scripting paradigms and how to use scripting paradigms in the classroom.
		30 Mins	<b>Practical session:</b> Tutor leads student teachers to create a basic educational multimedia artefact using a script language.
	Card Based Paradigms	25 Mins	<b>e-learning</b> Shows short videos from YouTube on scripting paradigm
			<b>e-learning &amp; Seminar</b> Student teachers watch videos from YouTube on what scripting are and how they are paradigms in the classroom; make notes from the videos for small group's discussion.
			<b>Practical session:</b> Student teacher develops a basic educational multimedia using a script based metaphor for a lesson student teacher has observed in school.
			<b>e-learning &amp; Seminar</b> Student teachers watch videos from YouTube on

			the need, uses for scripting paradigms and how to use card based paradigms in the classroom.	what card based are and how they are paradigms in the classroom; make notes from the videos for small group's discussion.
		30 Mins	<b>Practical session:</b> Tutor leads student teachers to create a basic educational multimedia artefact using a card based metaphor. PowerPoint could be used to create the artefact.	<b>Practical session:</b> Student teacher develops a basic educational multimedia artefact using a suitable software card based metaphor for a lesson student teacher has observed in school.
	Lesson Closure	5 Mins	<b>Questioning:</b> Tutor uses questioning to briefly summarise and recap the concepts covered for the day	<b>Questioning:</b> Student teacher responds to questions to summarise and recap the concepts covered for the day
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson</b>	<p><b>Summary of Assessment Method:</b></p> <p><b>Assessment of Learning:</b> Multimedia teaching and learning (TLM) produced by Student teachers and a technical report written on the development. The artefact should be added to e-portfolio. (NTS 2C, 2D, 3J)</p> <p>Assesses Learning Outcomes:  <b>CLO1:</b> Demonstrate knowledge and understanding of Authoring systems  <b>CLO2:</b> Demonstrate knowledge and understanding of Design Metaphor/ Authoring paradigms  <b>NTS: 1a, 1d, 2e, 3a, 3h, 3k, 3p/ NTECF: Pillar 1, 2 &amp; 3</b></p>			
<b>Instructional Resources</b>	<ul style="list-style-type: none"> <li>• Smartphones</li> <li>• Laptops</li> <li>• Desktop computers</li> <li>• Tablets</li> <li>• TV and Radio</li> <li>• Open Educational Resources (Including: YouTube, MOOCS-Udemy/courseera, khan academy,TESSA)</li> <li>• The iBox (CENDLOS)</li> <li>• Productivity tools</li> <li>• Subject based application software</li> <li>• Instructional Laboratories (with multimedia equipment and smartboards)</li> </ul>			
<b>Required Text (core)</b>	<ol style="list-style-type: none"> <li>1. Arch, C.L (1994). Authoring interactive multimedia. AP Professional</li> <li>2. Koumi, J. (2006). <i>Designing Video and Multimedia for Open and Flexible Learning</i>. Hilton Park, New York: Routledge Falmer.</li> <li>3. Mayer, R. E. (2001). <i>Multimedia learning</i>. Cambridge, New York: Cambridge University Press.</li> </ol>			
<b>Additional Reading List</b>	<ol style="list-style-type: none"> <li>1. Shank, P. (2007). <i>The online learning idea book: 95 proven ways to enhance technology-based and blended learning</i>. San Francisco: Pfeiffer.</li> <li>2. Selected articles and online resources (youtube.com, MOOCs: Khan Academy, TESSA, Udemy etc)</li> <li>3. Professional Development Guide (PDG) for Tutors (All Themes)</li> </ol>			
<b>CPD needs</b>	<p>Need for how Authoring systems impact learning</p> <p>Writing reflective notes</p> <p>Participating in a community of practice/conferences and accessing online magazines (E-zines) &amp; journals to obtain up to date content.</p> <p>Team teaching and lesson observation to improve instructional strategies &amp; practices.</p> <p>Supporting student teachers in collaborating in designing and developing a wiki.</p>			

# Lesson 11

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 <b>11</b> 12
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Title of Lesson	Design Metaphor/ Authoring paradigms II				Lesson Duration	3 Hours	
Lesson description	Student teachers will examine the use of a variety of media, including audio, video, text, and graphics to produce instructional multimedia products. Emphasis will also be placed on understanding the problem solving skills associated with production relating to business and/or educational products reflecting a client's or target audience's needs. The course emphasizes the use of multimedia application in developing multimedia content. <b>(National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</b>						
Previous student teacher knowledge, prior learning (assumed)	Student teachers have been introduced to Types of Multimedia Authoring metaphors						
Possible barriers to learning in the lesson	Some student teachers might not have had knowledge and understanding of Authoring Systems education in the 21 <sup>st</sup> century.						
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face [ ✓ ]	Practical Activity [ ✓ ]	Work-Based Learning	Seminars [ ✓ ]	Independent Study [ ✓ ]	e-learning opportunities [ ✓ ]	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<p><b>Face-to-face</b> – Both teacher and student-led approaches such as discussions of varying kinds should be used.</p> <p><b>e-learning opportunities</b> -Student teachers would watch videos on YouTube/videos about responsible use of technology systems.</p> <p><b>Seminars</b> – Both individual and group presentation of projects should be encouraged.</p> <p><b>Practical Activity</b>- student teachers will review work samples of other student teachers to explain progress or barriers to learning</p> <p><b>Group work:</b> 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</p> <p><b>Independent study:</b> 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/courseera, khan academy, TESSA) to support independent study.</p>						
<ul style="list-style-type: none"> <li>Overarching outcome, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</li> <li>Write in full aspects of the NTS addressed</li> </ul>	<p>Student teachers will:</p> <p>Demonstrate knowledge and understanding and use of Design Metaphor/ Authoring paradigms <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1, 3, &amp; 4</b></p>						
<ul style="list-style-type: none"> <li>Learning Outcome for the lesson, picked and developed from the course specification</li> <li>Learning indicators for each learning outcome</li> </ul>	<p><b>Learning Outcomes</b></p> <p>Demonstrate knowledge and understanding and use of Design Metaphor/ Authoring paradigms <b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1, 3, &amp; 4</b></p>	<p><b>Learning Indicators</b></p> <ol style="list-style-type: none"> <li>1. Explain and Use Icon Based/ Flow control Paradigms</li> <li>2. Explain and Use Frame Paradigms</li> <li>3. Explain and Use Cast/ Score Paradigms</li> </ol>	<p>Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity.</p> <p>These strategies will respond to inclusivity and equity (ie ICT as a tool for expanding learning to diverse learners eg. People with visual impairment, dyslexia, dysgraphia) . Identify the instances when personal, cultural, and institutionalized discrimination are creating and/ or sustaining disadvantages for some student-teachers.</p>				



Topic Title: Classroom technology integration II	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
	Recap lesson on Multimedia Authoring Paradigms	15 min	<b>Face-to-face:</b> Tutor/lecturer recaps previous lesson on multimedia authoring paradigms and scripting and reviews student teacher's multimedia artefact it to the Icon Based/ Flow control Paradigms, Frame Paradigms and Cast/ Score Paradigms. (PDG Theme 2)	<b>e-learning &amp; Seminar</b> Student teachers discuss the previous lesson and present multimedia artefact developed using scripting.
	Icon Based/ Flow control Paradigms	25 Mins	<b>e-learning</b> Shows short videos from YouTube on Icon Based/ Flow control Paradigms paradigm the need, uses for Icon Based/ Flow control Paradigms paradigms and how to use Icon Based/ Flow control paradigms in the classroom.	<b>e-learning &amp; Seminar</b> Student teachers watch videos from YouTube on what Icon Based/ Flow control paradigms are and how they are in the classroom; make notes from the videos for small group's discussion.
		30 Mins	<b>Practical session:</b> Tutor leads student teachers to create a basic educational multimedia artefact using alcon Based/ Flow control metaphor. Software like Authorware can be used to create the artefact.	<b>Practical session:</b> Student teacher develops a basic educational multimedia artefact using alcon Based/ Flow control metaphor using a suitable software for a lesson student teacher has observed in school.
	Frame Paradigms	25 Mins	<b>e-learning</b> Shows short videos from YouTube on Frame paradigm the need, uses and how to use Frame paradigms in the classroom.	<b>e-learning &amp; Seminar</b> Student teachers watch videos from YouTube on what Frame paradigms are and how they are in the classroom; make notes from the videos for small group's discussion.
		30 Mins	<b>Practical session:</b> Tutor leads student teachers to create a basic educational multimedia artefact using a Frame metaphor.	<b>Practical session:</b> Student teacher develops a basic educational multimedia artefact using a Frame metaphor for a lesson student teacher has observed in school.
	Cast/ Score Paradigms	25 Mins	<b>e-learning</b> Shows short videos from YouTube on scripting paradigm the need, uses for Cast/ Score paradigms and how to use Cast/ Score paradigms in the classroom.	<b>e-learning &amp; Seminar</b> Student teachers watch videos from YouTube on what Cast/ Score are and how they are paradigms in the classroom; make notes from the videos for small group's discussion.
		30 Mins	<b>Practical session:</b> Tutor leads student teachers to create a basic educational multimedia artefact using a Cast/ Score metaphor.	<b>Practical session:</b> Student teacher develops a basic educational multimedia artefact using a Cast/ Score metaphor for a lesson student teacher has observed in school.

	Lesson Closure	15 Mins	<b>Questioning:</b> Tutor uses questioning to summarise and recap the concepts covered for the day	<b>Questioning:</b> Student teacher responds to questions to summarise and recap the concepts covered for the day
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson</b>	<p><b>Summary of Assessment Method:</b></p> <p><b>Assessment of learning:</b></p> <ol style="list-style-type: none"> <li>i. Tests/quizzes and class exercises to examine student teachers' knowledge Icon Based/ Flow control Paradigms, Frame Paradigms and Cast/ Score authoring paradigms. Eg. Describe the differences between Icon Based/ Flow control Paradigms, Frame Paradigms and Cast/ Score Paradigms. Test to go into Student teacher's portfolio.</li> <li>ii. Multimedia teaching and learning (TLM) produced by Student teachers using Icon Based/ Flow control Paradigms, Frame Paradigms and Cast/ Score Paradigms as a project and a technical report written on the development. Artefact should be added to e-portfolio. (NTS 2C, 2D, 3J)</li> </ol> <p>Assesses Learning Outcomes:</p> <p><b>CLO1:</b> Demonstrate knowledge and understanding of Authoring systems</p> <p><b>CLO2:</b> Demonstrate knowledge and understanding of Design Metaphor/ Authoring paradigms</p> <p><b>NTS: 1a, 1d, 2e, 3a, 3h, 3k, 3p/ NTECF: Pillar 1, 2 &amp; 3</b></p>			
<b>Instructional Resources</b>	<ul style="list-style-type: none"> <li>• Smartphones</li> <li>• Laptops</li> <li>• Desktop computers</li> <li>• Tablets</li> <li>• TV and Radio</li> <li>• Open Educational Resources (Including: YouTube, MOOCS-Udemy/courseera, khan academy, TESSA)</li> <li>• The iBox (CENDLOS)</li> <li>• Productivity tools</li> <li>• Subject based application software</li> <li>• x. Instructional Laboratories (with multimedia equipment and smartboards)</li> </ul>			
<b>Required Text (core)</b>	<ol style="list-style-type: none"> <li>1. Arch, C.L (1994). <i>Authoring interactive multimedia</i>. AP Professional</li> <li>2. Koumi, J. (2006). <i>Designing Video and Multimedia for Open and Flexible Learning</i>. Hilton Park, New York: Routledge Falmer.</li> <li>3. Mayer, R. E. (2001). <i>Multimedia learning</i>. Cambridge, New York: Cambridge University Press.</li> </ol>			
<b>Additional Reading List</b>	<ol style="list-style-type: none"> <li>1. Shank, P. (2007). <i>The online learning idea book: 95 proven ways to enhance technology-based and blended learning</i>. San Francisco: Pfeiffer.</li> <li>2. Selected articles and online resources (youtube.com, MOOCs: Khan Academy, TESSA, Udemy etc)</li> <li>3. Professional Development Guide (PDG) for Tutors (All Themes)</li> </ol>			
<b>CPD needs</b>	<p>Need for how Authoring systems impact learning</p> <p>Writing reflective notes</p> <p>Participating in a community of practice/conferences and accessing online magazines (E-zines) &amp; journals to obtain up to date content.</p> <p>Team teaching and lesson observation to improve instructional strategies &amp; practices.</p> <p>Supporting student teachers in collaborating in designing and developing a wiki.</p>			

# Lesson 12

Year of B.Ed.	2	Semester	1	Place of lesson in semester	1 2 3 4 5 6 7 8 9 10 11 12
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Title of Lesson	Design Metaphor/ Authoring paradigms III				Lesson Duration	3 Hours	
Lesson description	Student teachers will examine the use of a variety of media, including audio, video, text, and graphics to produce instructional multimedia products. Emphasis will also be placed on understanding the problem solving skills associated with production relating to business and/or educational products reflecting a client's or target audience's needs. The course emphasizes the use of multimedia application in developing multimedia content. <b>(National Teachers' Standard: 1a, 1b, 3b, 3c, 3e, 3d, 3n/NTECF: Pillar crosscutting issues; Core skills, Professional values and attitudes).</b>						
Previous student teacher knowledge, prior learning (assumed)	Student teachers have been introduced to Icon Based/ Flow control Paradigms						
Possible barriers to learning in the lesson	Some student teachers might not have had knowledge and understanding of Authoring Systems education in the 21 <sup>st</sup> century.						
Lesson Delivery – chosen to support students in achieving the outcomes	Face-to-face [ v ]	Practical Activity [ v ]	Work-Based Learning	Seminars [ v ]	Independent Study [ v ]	e-learning opportunities [ v ]	Practicum
Lesson Delivery – main mode of delivery chosen to support student teachers in achieving the learning outcomes.	<p><b>Face-to-face</b> – Both teacher and student-led approaches such as discussions of varying kinds should be used.</p> <p><b>e-learning opportunities</b> -Student teachers would watch videos on YouTube/videos about responsible use of technology systems.</p> <p><b>Seminars</b> – Both individual and group presentation of projects should be encouraged.</p> <p><b>Practical Activity</b>- student teachers will review work samples of other student teachers to explain progress or barriers to learning</p> <p><b>Group work:</b> 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</p> <p><b>Independent study:</b> 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/courseera, khan academy, TESSA) to support independent study.</p>						
<ul style="list-style-type: none"> <li>Overarching outcome, what you want the students to achieve, serves as basis for the learning outcomes. An expanded version of the description.</li> <li>Write in full aspects of the NTS addressed</li> </ul>	<p>Student teachers will:</p> <p>Demonstrate knowledge and understanding in Authoring Interface and then perform Authoring Interface using, slide show metaphor, etc..<b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1 &amp; 3</b></p>						
<ul style="list-style-type: none"> <li>Learning Outcome for the lesson, picked and developed from the course specification</li> <li>Learning indicators for each learning outcome</li> </ul>	<p><b>Learning Outcomes</b></p> <p>Demonstrate knowledge and understanding in <b>Authoring</b> Interface and then perform Authoring Interface using, slide show metaphor, etc..<b>NTS: 1a, 1d, 2c, 2e/NTECF: Pillar 1 &amp; 3</b></p>	<p><b>Learning Indicators</b></p> <ol style="list-style-type: none"> <li>1. Explain and use Hierarchical Object Paradigms</li> <li>2. Explain and use tagging Paradigms</li> <li>3. Explain and use time-based Paradigms</li> </ol>	<p>Identify which cross cutting issues – core and transferable skills, inclusivity, equity and addressing diversity. How will these be addressed or developed?</p> <p>These strategies will respond to inclusivity and equity (ie ICT as a tool for expanding learning to diverse learners eg. People with visual impairment, dyslexia, dysgraphia). Identify the instances when personal, cultural, and institutionalized discrimination are creating and/ or sustaining disadvantages for some student-teachers</p>				

Topic Title: Classroom technology integration III	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
			Recap lesson on Icon Based/ Flow control Paradigms, Frame Paradigms and Cast/ Score	15min
Hierarchical Object Paradigms	25 Mins	<b>e-learning</b> Shows short videos from YouTube on Hierarchical Object Paradigms the need, uses and how to use Icon Hierarchical Object Paradigms in the classroom.	<b>e-learning &amp; Seminar</b> Student teachers watch videos from YouTube on what Hierarchical Object Paradigms are and how they are in the classroom; make notes from the videos for small group's discussion.	
	30 Mins	<b>Practical session:</b> Tutor leads student teachers to create a basic educational multimedia artefact using a Hierarchical Object Paradigms.	<b>Practical session:</b> Student teacher develops a basic educational multimedia artefact using Hierarchical Object Paradigms for a lesson student teacher has observed in school.	
tagging Paradigms	25 Mins	<b>e-learning</b> Shows short videos from YouTube on tagging paradigm the need, uses and how to use tagging paradigms in the classroom.	<b>e-learning &amp; Seminar</b> Student teachers watch videos from YouTube on what tagging paradigms are and how they are in the classroom; make notes from the videos for small group's discussion.	
	30 Mins	<b>Practical session:</b> Tutor leads student teachers to create a basic educational multimedia artefact using a tagging metaphor.	<b>Practical session:</b> Student teacher develops a basic educational multimedia artefact using a tagging metaphor for a lesson student teacher has observed in school.	
time-based Paradigms	25 Mins	<b>e-learning</b> Shows short videos from YouTube on time-based paradigm the need, uses and how to use time-based paradigms in the classroom.	<b>e-learning &amp; Seminar</b> Student teachers watch videos from YouTube on what time-based are and how they are paradigms in the classroom; make notes from the videos for small group's discussion.	
	30 Mins	<b>Practical session:</b> Tutor leads student teachers to create a basic educational multimedia artefact using a time-based metaphor.	<b>Practical session:</b> Student teacher develops a basic educational multimedia artefact using a time-based metaphor for a lesson student teacher has observed in school.	

	Lesson Closure	15 Mins	<b>Questioning:</b> Tutor uses questioning to summarise and recap the concepts covered for the day	<b>Questioning:</b> Student teacher responds to questions to summarise and recap the concepts covered for the day
<b>Lesson assessments – evaluation of learning: of, for and as learning within the lesson</b>	<p><b>Summary of Assessment Method:</b></p> <p><b>Assessment of Learning:</b></p> <ol style="list-style-type: none"> <li>i. Tests/quizzes and class exercises to examine student teachers’ knowledge Icon Based/ Flow control Paradigms, Frame Paradigms and Cast/ Score authoring paradigms. Eg. Describe the differences between Icon Based/ Flow control Paradigms, Frame Paradigms and Cast/ Score Paradigms. Test to go into Student teacher’s portfolio.</li> <li>ii. Multimedia teaching and learning (TLM) produced by Student teachers using Icon Based/ Flow control Paradigms, Frame Paradigms and Cast/ Score Paradigms as a project and a technical report written on the development. Artefact should be added to e-portfolio. (NTS 2C, 2D, 3J)</li> </ol> <p><b>Weighting: 8 %</b></p> <p>Assesses Learning Outcomes:</p> <p><b>CLO1:</b> Demonstrate knowledge and understanding of Authoring systems</p> <p><b>CLO2:</b> Demonstrate knowledge and understanding of Design Metaphor/ Authoring paradigms</p> <p><b>NTS: 1a, 1d, 2e, 3a, 3h, 3k, 3p/ NTECF: Pillar 1, 2 &amp; 3</b></p>			
<b>Instructional Resources</b>	<ul style="list-style-type: none"> <li>• Smartphones</li> <li>• Laptops</li> <li>• Desktop computers</li> <li>• Tablets</li> <li>• TV and Radio</li> <li>• Open Educational Resources (Including: YouTube, MOOCS-Udemy/coursea, khan academy, TESSA)</li> <li>• The iBox (CENDLOS)</li> <li>• Productivity tools</li> <li>• Subject based application software</li> <li>• x. Instructional Laboratories (with multimedia equipment and smartboards)</li> </ul>			
<b>Required Text (core)</b>	<ol style="list-style-type: none"> <li>1. Arch, C.L (1994). <i>Authoring interactive multimedia</i>. AP Professional</li> <li>2. Koumi, J. (2006). <i>Designing Video and Multimedia for Open and Flexible Learning</i>. Hilton Park, New York: Routledge Falmer.</li> <li>3. Mayer, R. E. (2001). <i>Multimedia learning</i>. Cambridge, New York: Cambridge University Press.</li> </ol>			
<b>Additional Reading List</b>	<ol style="list-style-type: none"> <li>1. Shank, P. (2007). <i>The online learning idea book: 95 proven ways to enhance technology-based and blended learning</i>. San Francisco: Pfeiffer.</li> <li>1. Selected articles and online resources (youtube.com, MOOCs: Khan Academy, TESSA, Udemy etc)</li> <li>2. Professional Development Guide (PDG) for Tutors (All Themes)</li> </ol>			
<b>CPD needs</b>	<p>Need for how Book Metaphor impacts learning</p> <p>Writing reflective notes</p> <p>Participating in a community of practice/conferences and accessing online magazines (E-zines) &amp; journals to obtain up to date content.</p> <p>Team teaching and lesson observation to improve instructional strategies &amp; practices.</p> <p>Supporting student teachers in collaborating in designing and developing a wiki.</p>			
<b>Course Assessment</b>	<p><sup>1</sup><b>Component 1:</b> Portfolio Assessment: (30% overall score)</p> <ul style="list-style-type: none"> <li>• Selected items of students work (3 of them – 10% each)- 30%</li> <li>• Midterm Assessment – 20%</li> <li>• Reflective Journal – 40%</li> <li>• Organisation of subject portfolio – 10% (how it is presented/organized)</li> </ul> <p><sup>2</sup><b>Component 2: Subject Project (30% overall semester score)</b></p> <ul style="list-style-type: none"> <li>• Introduction a clear statement of aim and purpose of the project – 10%</li> <li>• Methodology: what the student teacher has done and why to achieve the purpose of the</li> </ul>			

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

<sup>2</sup> See rubric on Subject Project Assessment in Annex 6 of NTEAP

project – 20%

- Substantive or main section – 40%
- Conclusion – 30%

**Component 3: End of Semester Examination – 40% overall**

