KENYA INSTITUTE OF CURRICULUM DEVELOPMENT
A Skilled and Ethical Society

DIPLOMA IN TEACHER EDUCATION

RESEARCH SKILLS
CURRICULUM DESIGN

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INTRODUCTION

The development of the curriculum for Diploma in Teacher Education for the Pre-Primary and Primary level **(DTE–PP&P)** is a critical milestone in the implementation of Competency Based Curriculum (CBC) in Kenya. The curriculum designs herein have been developed to prepare the teacher trainee to be able to effectively guide the learners at the Pre-Primary and Primary School level; that is from Pre-Primary One (PP1) to Grade Six (G6) in Basic Education.

It is envisaged that the teacher educator will guide the teacher trainees appropriately to embrace the shift from the Objective-Based to the Competency Based Curriculum which is hinged on use of learner-centred pedagogy for realisation of the stated expected learning outcomes. In addition, the emphasis on formative assessment to facilitate learning should be underscored as the basis for determining learner aptitude and performance. Other key aspects that have been introduced include structured micro-teaching, a longer period for the practicum and the introduction of specific Professional Courses that ensure congruence with the CBC vision, mission, pillars and guiding principles as enshrined in the *Basic Education Curriculum Framework* (KICD, 2017).

The DTE-PP&P curriculum seeks to develop the teacher to act as a facilitator in the learning process taking into consideration the different abilities and learning styles of individual target learners. The curriculum has been designed with emphasis on experiential and reflective learning to develop appropriate Pedagogical Content Knowledge (PCK); hence, the emphasis on integrated content and pedagogy for the student teachers while at college. This is to ensure that the student teacher is given adequate time to practice how to facilitate learning of the different strands prescribed in the curriculum designs.

The Curriculum designs for the DTE-PP&P are packaged according to courses of training as follows:

Professional Learning areas
1. Child Development and Psychology
2. Curriculum Studies
3. Educational Resources
4. ICT Integration in Education
5. Educational Assessment

6. Research Skills
7. Inclusive Education
8. Educational Leadership and Management
9. Sociological and Philosophical Foundations of Education
10. Historical and Comparative Foundations of Education
11. Micro Teaching
12. Practicum

Integrated Content and Pedagogy Learning areas
1. English
2. Kiswahili
3. Mathematics
4. Science and Technology
5. Agriculture
6. Home Science
7. Religious Education: CRE/IRE/HRE
8. Social Studies
9. Physical and Health Education
10. Art and Craft
11. Music
12. Indigenous Language
13. Foreign Languages: French/ Arabic/ German/ Mandarin (Chinese)/ KSL

REGULATIONS FOR DIPLOMA IN TEACHER EDUCATION -PRE-PRIMARY AND PRIMARY (DTE-PP&P)

Entry Requirements
The entry requirements for the Diploma in Teacher Education – Pre-Primary and Primary shall be **C Plain** Mean Grade in the Kenya Certificate of Secondary Education examination (KCSE) or its equivalent (as equated by the Kenya National Examinations Council (KNEC). The Special Needs Candidates (SNE) could be admitted with **C Minus (-)** Grade in KCSE or equivalent

Duration of Training
The duration for the Diploma in Teacher Education – Pre-Primary and Primary shall be **three years**.

Subjects Offered
The trainee undertaking the Diploma in Teacher Education – Pre-Primary and Primary (DTE –PP&P) shall take **ALL** courses specified in the DTE- PP&P curriculum; which includes Professional Courses and learning areas (subjects) related to the content in the Pre-Primary and Primary School Curriculum.

Micro-Teaching and Practicum
Micro Teaching shall be undertaken as a course and shall be a pre-requisite for the Practicum; hence a course design has been developed for it. There shall be two (2) school term practicum sessions for which guidelines shall be developed.

Award of the Diploma
To be awarded the Diploma in Teacher Education – Pre-Primary and Primary (DTE-PP&P), the candidate must achieve the following:
i)   Complete the required hours for coursework and pass the stipulated assessment as directed by the Kenya National Examinations Council (KNEC).

ii)   Complete the required hours for the Practicum and pass the stipulated assessment as directed by the Kenya National Examinations Council (KNEC).

Note: If the student teacher fails to meet the requirements for award of the Diploma in Teacher Education – Pre-Primary and Primary (DTE –PP&P) he/she will be allowed to repeat the specific component or learning area failed.

Grading

The Diploma in Teacher Education – Pre-Primary and Primary (DTE PP&P) shall be graded as stipulated by the Kenya National Examinations Council (KNEC).

TABLE 1: DISTRIBUTION OF PROFESSIONAL LEARNING AREAS

	SUBJECT	TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6	Sub Total	TERM 7 Micro Teaching - Subject Practicals	TERM 8	TERM 9	TOTAL FOR COURSE
PROFESSIONAL LEARNING AREAS												**PROFESSIONAL LEARNING AREAS** **(420 Hours)**
1.	**Child Development and Psychology**	10	10	10	10	10	10	60				
2.	**Curriculum Studies**	30	20	20	20			90				
3.	**Educational Resources**	10	10	10				30				
4.	**ICT Integration in Education**	10	10	10				30				
5.	**Educational Assessment**	10	10	10				30				
6.	**Research Skills**	10	10	4				24				
7.	**Inclusive Education**	10	10	10				30				
8.	**Educational Leadership and Management**				10	10	10	30				
9.	**Sociological and Philosophical Foundations of Education**				10	10	10	30				
10.	**Historical and Comparative Foundations of Education**				10	10	10	30				
11.	**Micro Teaching**	30						30				
SUB TOTAL		**120Hrs**	**80Hrs**	**80Hrs**	**60Hrs**	**40Hrs**	**40Hrs**	**414Hrs**				

TABLE 2: DISTRIBUTION OF CONTENT + PEDAGOGY (SUBJECTS)

	SUBJECT	TERM 1	TERM 2	TERM 3	TERM 4	TERM 5	TERM 6	SUB TOTAL	TERM 7 Micro Teaching - Subject Practicals	TERM 8	TERM 9	TOTAL FOR COURSE
	CONTENT + PEDAGOGY (SUBJECTS)											
1	**English**	24	34	34	35	29	30	186	30	Practicum	Practicum	
2	**Kiswahili**	20	20	20	20	20	20	120	20			**CONTENT& PEDAGOGY (SUBJECTS) (1680 Hrs)**
3	**Mathematics**	30	30	30	30	30	30	180	30	300 Hours	300 Hours	
4	**Science and Technology**	20	20	20	20	20	20	120	30			
5	**Agriculture**	20	20	20	20	20	20	120	20			
6	**Home science**	20	20	20	20	20	20	120	20			**+**
7	**Religious Education:- (CRE, IRE, HRE)**	20	20	20	20	20	20	120	20			**PRACTICUM (600Hrs)**
8	**Social Studies**	20	20	20	20	20	20	120	20			
9.	**Physical and Health Education**	10	10	10	30	30	30	120	30			
10.	**Art and craft**	10	30	30	10	20	20	120	20			
11.	**Music**	10	20	20	20	20	30	120	20			
12.	**Indigenous Languages**	10	20	20	20	30	20	120	20			
13	**Foreign Languages: French/ Arabic/ German/ Mandarin (Chinese)/ KSL**	10	10	10	30	30	30	120	20			
	SUB TOTAL	230 Hrs	270 Hrs	270 Hrs	290 Hrs	310 Hrs	310 Hrs	1686Hrs				
	TOTAL	**350**	**350**	**350**	**350**	**350**	**350**	**2100**	**300**	**300**	**300**	**3000 HRS**

NATIONAL GOALS OF EDUCATION

Education in Kenya should:

1. **Foster nationalism and patriotism and promote national unity.**

   Kenya's people belong to different communities, races and religions, but these differences need not divide them. They must be able to live and interact as Kenyans. It is a paramount duty of education to help young people acquire this sense of nationhood by removing conflicts and promoting positive attitudes of mutual respect which enable them to live together in harmony and foster patriotism in order to make a positive contribution to the life of the nation.

2. **Promote the social, economic, technological and industrial needs for national development.**

   Education should prepare the youth of the country to play an effective and productive role in the life of the nation.

   a) **Social Needs**

   Education in Kenya must prepare children for changes in attitudes and relationships which are necessary for the smooth progress of a rapidly developing modern economy. There is bound to be a silent social revolution following in the wake of rapid modernization. Education should assist our youth to adapt to this change.

   b) **Economic Needs**

   Education in Kenya should produce citizens with the skills, knowledge, expertise and personal qualities that are required to support a growing economy. Kenya is building up a modern and independent economy which is in need of an adequate and relevant domestic workforce.

   c) **Technological and Industrial Needs**

   Education in Kenya should provide learners with the necessary skills and attitudes for industrial development. Kenya recognizes the rapid industrial and technological changes taking place, especially in the developed world. We can only be part of this development if our education system is deliberately focused on the knowledge, skills and attitudes that will prepare our young people for these changing global trends.

3. **Promote individual development and self-fulfilment**

   Education should provide opportunities for the fullest development of individual talents and personality. It should help children to develop their potential interests and abilities. A vital aspect of individual development is the building of character.

4. **Promote sound moral and religious values.**

Education should provide for the development of knowledge, skills and attitudes that will enhance the acquisition of sound moral values and help children to grow up into self-disciplined, self-reliant and integrated citizens.

5. **Promote social equity and responsibility.**

Education should promote social equality and foster a sense of social responsibility within an education system which provides equal educational opportunities for all. It should give all children varied and challenging opportunities for collective activities and corporate social service irrespective of gender, ability or geographical environment.

6. **Promote respect for and development of Kenya's rich and varied cultures.**

Education should instill in the youth of Kenya an understanding of past and present cultures and their valid place in contemporary society. Children should be able to blend the best of traditional values with the changing requirements that must follow rapid development in order to build a stable and modern society.

7. **Promote international consciousness and foster positive attitudes towards other nations.**

Kenya is part of the international community. It is part of the complicated and interdependent network of peoples and nations. Education should therefore lead the youth of the country to accept membership of this international community with all the obligations and responsibilities, rights and benefits that this membership entails.

8**. Promote positive attitudes towards good health and environmental protection.**

Education should inculcate in young people the value of good health in order for them to avoid indulging in activities that will lead to physical or mental ill health. It should foster positive attitudes towards environmental development and conservation. It should lead the youth of Kenya to appreciate the need for a healthy environment.

LEVEL LEARNING OUTCOMES FOR DIPLOMA IN TEACHER EDUCATION - PRE-PRIMARY AND PRIMARY (DTE–PP&P)

By the end of the course the teacher trainee should be able to:

1. Model appropriate behaviour and values for Pre-Primary and Primary school learners to emulate for development of good citizenship
2. Communicate and collaborate effectively with learners, peers, parents and the community to create a conducive learning environment.
3. Use appropriate pedagogical approaches to facilitate learning for Pre-Primary and Primary school learners in and out of the classroom
4. Apply inclusive practices to support all Pre-Primary and Primary school learners including those with disabilities and special educational needs
5. Employ ICT skills in the learning process to enhance digital literacy
6. Employ appropriate assessment approaches to promote effective learning
7. Identify and nurture learner's potential and talents for appropriate placement and transition into Junior School.
8. Develop environmental conservation skills in Pre-Primary and Primary school learners to promote education for sustainable development
9. Create innovative and effective solutions to challenges in the learning process.
10. Integrate pertinent and contemporary issues in learning to enable learners to cope with daily challenges.

ESSENCE STATEMENT

The learning environment presents a variety of challenges and opportunities that a teacher is expected to manage as they seek to improve learning outcomes. Often, these occurrences are hindrances that need to be overcome or opportunities that need to be harnessed to optimize learning. Research skills enable the teacher to investigate and come up with mechanisms that address these challenges that are bound to impede the attainment of learning outcomes. The trainee's exposure to research will engage them actively in seeking solutions to educational challenges within their contexts. These

are not only applicable to learner factors but could also include learning resources and pedagogies used during the learning process. Additionally, the trainees will develop analytical and critical thinking skills as they get opportunities to work collaboratively in pursuit of new ideas. Research skills are premised on the view that teacher trainees will have a more pragmatic approach to their professional practice.

COURSE GENERAL LEARNING OUTCOMES
By the end of the course, the trainee should be able to:
1. Relate concepts and features of research appropriately to teaching and learning contexts.
2. Analyze emerging constraints in the learning process to formulate suitable research procedures.
3. Demonstrate appropriate skills for generation, analysis and interpretation of contextual data.
4. Develop a research report to document and disseminate plausible findings as evidence for change in teaching and learning.
5. Mainstream research findings to continuously transform curriculum implementation for desired learning outcomes.
6. Use reflection, experimentation and collaboration with peers as means for improving learning and professional practice.
7. Appreciate the integral role of technology in conducting research in education.

STRAND 1.0 ROLE OF RESEARCH

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Questions
1.0 Role of Research	**1.1 Conceptualisation of Research** **(2 Hours)**	By the end of sub strand, the teacher trainee should be able to: a) analyse the features that characterize research to get a clear perspective, b) use relevant examples to demonstrate the purpose of research in the society, c) appreciate the importance of research in generating knowledge.	The teacher trainee to: • use print and online materials to read about the various definitions of research, • contribute to a discussion on characteristics of research from the definitions, • explore types of research through secondary sources and makes oral presentations to peers, • evaluate the descriptions of research to determine its purpose in the society.	Why is research useful in the in the society?
Core Competencies to be developed: • Communication and collaboration**:** as teacher trainees discuss characteristics of research from the definitions. • Digital literacy skills**:** as the teacher trainee uses online materials to read about the various definitions of research. • Learning to learn and reflective practice: as the teacher trainees explores types of research through secondary sources and evaluate the descriptions of research to determine its purpose in the society.				
Values: Responsibility: as teacher trainees searches for relevant information about research from print and online materials.				

Suggested Formative Assessment Rubric

Level Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to analyse the features that characterize research.	Exhaustively analyses the features that characterize research.	Analyses the features that characterize research.	Analyses some of the features that characterize research.	Analyses some of the features that characterize research with assistance.
Ability to use relevant examples to demonstrate the purpose of research in the society.	Comprehensively uses a variety of relevant examples to demonstrate the purpose of research in the society.	Uses relevant examples to demonstrate the purpose of research in the society.	Partially uses relevant examples to demonstrate the purpose of research in the society.	Hardly uses relevant examples to demonstrate the purpose of research in the society.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question
1.1 Role of Research	**1.2 Importance of Research** **(2 Hours)**	By the end of sub strand, the teacher trainee should be able to: a) assess the role of research in the teaching and learning environment, b) compare and contrast researches for improving teaching and learning, and other researches, c) promote the use of research in the teaching and learning environment.	The teacher trainee to: • discuss the role played by research in teaching and learning, • critique types of research to determine those that are relevant to teaching and learning, • use digital and other relevant sources to identify various steps that make researches for improving teaching and learning, • make an oral presentation on similarities and differences between researches for improving the teaching and learning environment and other researches.	Why is research useful in the teaching and learning environment?

Core Competencies to be developed:
- Communication and collaboration: as teacher trainees discuss the role played by research in teaching and learning.
- Self-efficacy: as teacher trainees present their findings on similarities and differences between researches for improving the teaching and learning environment, and other researches.
- Critical thinking and problem solving**:** as teacher trainee explores around the research problem and approaches to research.

Values:
Responsibility**:** as teacher trainee searches for relevant information about research from the library and other sources.

Suggested Formative Assessment Rubric

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to assess the role of research in the teaching and learning environment.	Skillfully assesses the role of research in the teaching and learning environment.	Assesses the role of research in the teaching and learning environment.	Partially assesses the role of research in the teaching and learning environment.	Hardly assesses the role of research in the teaching and learning environment.
Ability to compare and contrast researches for improving teaching and learning, and other .	Critically compares and contrasts researches for improving teaching and learning, and other researches.	Compares and contrasts researches for improving teaching and learning, and other researches researches.	Partially compares and contrasts researches for improving teaching and learning, and other researches.	Exhibits numerous challenges in comparing and contrasting researches for improving teaching and learning, and other researches.

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STRAND 2.0 RESEARCH PROCEDURES

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Questions
2.0 Research Procedures	**2.1 Identification of Research Problem** **(4 Hours)**	By the end of sub strand, the teacher trainee should be able to: a) analyse various problems likely to be found in the teaching and learning process, b) develop a research proposal in a format that is applicable, to address specific problems in teaching and learning, c) make connections between the research problem and other parts of the proposal, d) embrace the	The teacher trainee to: • engage with communities of practice through various channels of communication to come up with a research problem, • debate about prevailing problems related to teaching and learning to develop a research topic, • generate various research questions/objectives relevant to the research problem, • present relevant approaches that can be used to carry out research for the developed topic, • read extensively to make reference to different formats of research proposals, • rationalize the parts of a proposal that are suitable for addressing problems in teaching and learning, • write a detailed proposal on an identified topic guided by the research topic,	1. How does research address problems in the teaching and learning process? 2. How are the various steps in proposal development related to the research problem? 3. Why is it important to factor in ethical issues in the research process?

		importance of ethical considerations during the various stages of proposal development.	review different proposals developed by their peers to come up with a format that is applicable in addressing specific problems related to teaching and learning, • embrace values during the planning phase of research by embedding ethical considerations in the research proposal as expected.	

Core Competencies to be developed:
• Creativity and innovation: as teacher trainee develop a research proposal in a format that is applicable.
• Self-efficacy: as teacher trainees address specific problems in teaching and learning by designing a research proposal.
• Critical thinking and problem solving**:** as the teacher trainee reviews different proposals developed by their peers to come up with a format that is applicable in addressing specific problems related to teaching and learning.

Values:
Social justice: as teacher trainees work collaboratively to address the identified problems related to teaching and learning.

Suggested Formative Assessment Rubric

Level Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to analyse various problems likely to be found in learning Institutions.	Elaborately analyses various problems likely to be found in learning institutions.	Analyses various problems likely to be found in learning Institutions.	Analyses some problems likely to be found in learning Institutions.	Hardly analyses problems likely to be found in learning institutions.
Ability to develop a research proposal in a format that is applicable, to address specific problems in teaching and learning.	Creatively develops a research proposal in a format that is applicable, to address a variety of problems in teaching and learning.	Develops a research proposal in a format that is applicable, to address specific problems in teaching and learning.	Develops a research proposal whose format is partially applicable, to address specific problems in teaching and learning.	Rarely develops a research proposal that is aligned to a format that is applicable, to address specific problems in teaching and learning.
Ability to make connections between the research problem and other parts of the proposal.	Comprehensively makes connections between the research problem and other parts of the proposal.	Makes connections between the research problem and other parts of the proposal.	Makes connections between the research problem and some parts of the proposal.	Makes a few connections between the research problem and other parts of the proposal.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question
2.0 Research Procedures	**2.2 Sampling (3 Hours)**	By the end of sub strand, the teacher trainee should be able to: a) determine the target population based on the purpose of the study, b) apply suitable techniques to derive the sample size for the proposed study, c) recognize the importance of aligning the selected sample with the purpose of the study.	The teacher trainee to: • map the probable respondents in the study, • discuss the required information and defines the contribution of various respondents to the information, • deliberate with peers on the optimal number of respondents required to generate the necessary information, • debate and prioritize suitable techniques to be applied in choosing the sample of the study.	Who is best suited to provide the information required to address the problem identified in the study?

Core Competencies to be developed:
- Communication and collaboration: as teacher trainees discuss the required information and define the contribution of various respondents to the information
- Critical thinking and problem solving**:** as the teacher trainee debate and prioritize suitable techniques to be applied in choosing the sample of the study.

Values:
Respect: as teacher trainees deliberate on the optimal number of respondents required to generate the necessary information.
Unity: as teacher trainee debate and prioritize suitable techniques to be applied in choosing the sample of the study.

Suggested Formative Assessment Rubric

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to determine the target population based on the purpose of the study.	Critically determines the target population accurately based on the purpose of the study.	Determines the target population accurately based on the purpose of the study.	Determines some of the target population accurately based on the purpose of the study.	Has difficulty determining the target population accurately based on the purpose of the study.
Ability to apply suitable techniques to derive the sample size for the proposed study.	Consistently applies a variety of suitable techniques to derive the sample size for the proposed study.	Applies suitable techniques to derive the sample size for the proposed study.	Sometimes applies suitable techniques to derive the sample size for the proposed study.	Struggles to derive the sample size for the proposed study by applying suitable techniques.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Questions
2.0 Research Procedures	**2.3 Data Collection (5 Hours)**	By the end of sub strand the teacher trainee should be able to: a) assess the suitability of qualitative, quantitative and mixed methods approaches of data collection, b) examine the appropriateness of various data collection tools for a specific research problem related to teaching and learning, c) design data collection tools to generate relevant data, d) apply suitable procedures to collect data from different respondents, e) appreciate the role of	The teacher trainee to: • read print and online resources for information on the concept, functions and process of data collection, • write a summary and make oral presentations on the characteristics that make of qualitative, quantitative and mixed methods approaches of data collection suitable for research, • debate the advantages and disadvantages of different data collection techniques, • critique and make oral presentations to peers to justify choices of data collection tools for a specific research problem, • generate valid items for a variety of data collection tools to address research questions or objectives set out in the proposal, • simulate a data collection exercise with peers to model and improve the procedures in data collection, • critique the simulation with special	1. How does the choice of mixed methods approach of data collection contribute to research findings? 2. What should you consider when choosing data collection tools?

		datafrom stakeholders in addressing challenges experienced in education.	reference to etiquette among other aspects, • search the internet for conventional techniques and softwares used for quantitative and qualitative data collection and analysis and present to peers.	

Core Competencies to be developed:

- Critical thinking and problem solving**:** as the teacher trainees compare different tools to choose the best for collecting data to address the identified research questions.
- Creativity and innovation: as trainees develop data collection tools with valid items for the target respondents.
- Digital literacy skills: as trainees use digital applications for data collection and analysis.
- Assessment Competency: is developed as the teacher trainee critiques the presentations of peers.

Values:

- Integrity: as the teacher trainee collect and record data objectively without personal biases.
- Respect: as the teacher trainee apply ethical considerations and courtesy in the process of data collection.

Suggested Formative Assessment Rubric

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to assess the suitability of qualitative, quantitative and mixed methods approaches of data collection.	Critically assesses the characteristics of qualitative, quantitative and mixed methods approaches of data collection to determine their suitability.	Assesses the characteristics of qualitative, quantitative and mixed methods approaches of data collection to determine their suitability.	Assesses some of the characteristics of qualitative, quantitative and mixed methods approaches of data collection and determine their suitability.	Assesses some of the characteristics of qualitative, quantitative and mixed methods approaches of data collection but can hardly determine their suitability.
Ability to examine the appropriateness of data collection tools for a specific research problem related to teaching and learning.	Analytically and objectively examines the appropriateness of different data collection tools for a specific research problem related to teaching and learning.	Objectively examines the appropriateness of different data collection tools for a specific research problem related to teaching and learning.	Examines the appropriateness of some data collection tools for a specific research problem related to teaching and learning.	Examines the appropriateness of a few data collection tools for a specific research problem related to teaching and learning.
Ability to design appropriate data collection tools to generate	Consistently designs a variety of appropriate data collection tools to generate relevant data	Designs appropriate data collection tools to generate relevant data from different	Designs data collection tools to generate relevant data from some of the respondents.	Designs some of the data collection tool to generate relevant data from some of the respondents with

Level Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
relevant data from different respondents.	from different respondents.	respondents.		prompts.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question
2.0 Research Procedures	**2.4 Data Analysis (5 Hours)**	By the end of sub strand the teacher trainee should be able to: a) discuss techniques and softwares used for analysing quantitative and qualitative data, b) categorize and organize data appropriately according to the methods of analysis, c) analyse data accurately using quantitative and qualitative data analysis methods, d) promote the use of efficient data analysis procedures for reliable findings in teaching and learning.	The teacher trainee to: • search the internet and other sources for conventional techniques and software used for quantitative and qualitative data analysis and present to peers, • discuss items with peers and selects them to group them for quantitative or qualitative analysis, • analyse the data that has been grouped by employing a variety of conventional techniques and digital applications for data analysis.	Why is it important to use data analysis procedures?

Core Competencies to be developed:

- Critical thinking and problem solving: as the teacher trainee search for conventional techniques and software used for quantitative and qualitative data analysis.
- Digital literacy skills: as teacher trainees use digital applications for data analysis.

Values

Integrity: as teacher trainees analyse data objectively.

Suggested Formative Assessment Rubric

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to discuss the techniques and softwares used for analysing quantitative and qualitative data.	Extensively discusses techniques and softwares used for analysing quantitative and qualitative data	Discusses techniques and softwares used for analysing quantitative and qualitative data.	Discusses some of the techniques and softwares used for analysing quantitative and qualitative data.	Hardly discusses techniques and softwares used for analysing quantitative and qualitative data.
Ability to categorize and organize data appropriately according to the methods of analysis.	Systematically categorizes and organises data appropriately according to the methods of analysis.	Categorizes and organises data appropriately according to the methods of Analysis.	Categorizes and organises some of the data appropriately according to the methods of analysis.	Is not able to categorize and organise most of the data appropriately according to the methods of analysis.
Ability to analyse data accurately using quantitative and qualitative data analysis methods.	Systematically analyses data accurately using quantitative and qualitative data analysis methods.	Analyses data accurately using quantitative and qualitative data analysis methods.	Analyses data accurately using some quantitative and qualitative data analysis methods.	Analyses some data using quantitative or qualitative data analysis methods but is not accurate.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Questions
2.0 Research Procedures	**2.5 Data Interpretati on and Presentation (5 Hours)**	By the end of sub strand, the teacher trainee should be able to: a) synthesise and classify information as quantitative or qualitative b) data in response to specific research questions or objectives, c) determine the most appropriate statistics for communicating research findings according to the research questions or objectives, d) group the qualitative data into themes emerging from common trends and patterns, e) combine quantitative and qualitative data to give meaning to data according to the research questions/ objectives, f) develop a report that integrates textual and	The teacher trainee to: • explore data from respondents in the action research and consolidate similar ideas and those that are different in writing, • distinguish information that has been represented numerically from the information that has been presented in narrative form, • search information on educational research to establish commonly used statistics to interpret quantitative data, • develop themes from recurring patterns and trends in the qualitative data, • assess the data available in a study and prioritise the	1. Why are some statistics more appropriate for some studies than others? 2. How does qualitative data impact on research findings?

		visualisation techniques to present data, g) value the role of data interpretation and presentation in research.	most appropriate statistics for interpretation, • combine quantitative data and corresponding themes from qualitative data to present findings in response to research questions or objectives, • use varied productivity tools to present data and generate relevant tables and graphs, • present and take part in reviewing textual and visualization techniques used by peers to represent data.	

Core Competencies to be developed:
- Critical thinking and problem solving: as teacher trainees select the most suitable statistics to use, and as they generate themes from the qualitative data.
- Creativity and innovation: as the teacher trainee present data using text and an array of visual techniques like graphs.
- Citizenship and leadership: as teacher trainees appreciate the role of data in making positive change in various contexts.
  Digital literacy skills: as the teacher trainees use various productivity tools to present data and generate tables and graphs.

Values:
Integrity**:** as teacher trainees give objective information based on data analysis.

Suggested Formative Assessment Rubric

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to synthesise and classify data either as quantitative or qualitative.	Methodically synthesises and classifies data accurately either as quantitative or qualitative.	Synthesises and classifies data either as quantitative or qualitative.	Shows progressive effort in synthesising and classifying data either as quantitative or qualitative.	Attempts to synthesise and classify data either as quantitative or qualitative.
Ability to determine the most appropriate statistics for communicating research findings according to the research questions or objectives.	Confidently determines a range of most appropriate statistics for communicating research findings according to the research questions or objectives.	Determines the most appropriate statistics for communicating research findings according to the research questions or objectives.	Determines some appropriate statistics for communicating research findings according to the research questions or objectives.	Hardly determines the appropriate statistics for communicating research findings according to the research questions or objectives.
Ability to group similar ideas from qualitative data to generate themes emerging from common trends and patterns from findings of the study.	Systematically groups similar ideas from qualitative data precisely to generate common trends and patterns emerging from findings of the study.	Groups similar ideas from qualitative data correctly to generate common trends and patterns emerging from findings of the study.	Groups a few similar ideas from qualitative data correctly to generate common trends and patterns emerging from findings of the study.	Struggles to group similar ideas from qualitative data correctly to generate common trends and patterns emerging from findings of the study.

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to combine quantitative and qualitative data to give meaning to data according to the research questions/ objectives,	Skillfully combines quantitative and qualitative data to give meaning to data according to the research questions/ objectives.	Combines quantitative and qualitative data to give meaning to data according to the research questions/objectives.	Combines some of the quantitative and qualitative data to give meaning to data according to the research questions/objectives.	Hardly combines quantitative and qualitative data to give meaning to data according to the research questions/ objectives.
Ability to develop a report integrating textual and visualization techniques to present data according to the research questions/ objectives.	Develops a report that appropriately integrates textual and visualization techniques in a variety of styles to present data according to the research questions/ objectives.	Develops a report that appropriately integrates textual and visualization techniques to present data according to the research questions/ objectives.	Makes an attempt at developing a report that integrates textual and visualization techniques to present data according to the research questions/ objectives.	Hardly develops a report that integrates textual and visualization techniques to present data according to the research questions/ objectives.

STRAND 3.0 IMPROVING PRACTICE THROUGH RESEARCH

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question
3.0 Improving Practice through Research	3.1 Disseminating Research Findings **(2 Hours)**	By the end of sub strand, the teacher trainee should be able to: a) identify the intended audience for dissemination of research findings, b) communicate intentions of disseminating and getting views about the research findings from intended audiences, c) apply appropriate methods to disseminate research findings to the intended audience, d) analyse and use views and observations to improve the research report.	The teacher trainee to: • discuss with peers the probable consumers of research findings, • select representatives of the intended audience for the dissemination of research findings, • communicate about disseminating research findings using various channels, • deliberate and prioritise different methods of dissemination, • simulate an engagement with audience to explain the details in the report, • document views and observations in readiness to select those that can improve the report, • deliberate on adjustments to be made in the report to enrich it	What is the importance of disseminating research findings?

		e) appreciate varied opinions in enriching a research report.	based on ideas generated during dissemination.	

Core Competencies to be developed:
- Citizenship and leadership: as teacher trainee documents view and observations in readiness to select those that can improve the report.
- Self-efficacy: as trainees engage with their audiences actively to explain the details in the report.

Values:
Responsibility: as teacher trainees recognise their role in transforming their practice.
Social justice: as teacher trainee records suggestions of the audience without discrimination.

Suggested Formative Assessment Rubric

Level / Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to identify the intended audience for dissemination of research findings.	Extensively identifies the intended audience for dissemination of research findings.	Identifies the intended audience for dissemination of research findings.	Identifies some of the intended audience for dissemination of research findings.	Identifies some of the intended audience for dissemination of research findings with prompts.
Ability to communicate intentions of disseminating research findings to stakeholders.	Effectively and regularly communicates intentions of disseminating research findings to stakeholders.	Effectively communicates intentions of disseminating research findings to stakeholders.	Communicates intentions of disseminating research findings to stakeholders.	Hardly communicates intentions of disseminating research findings to stakeholders.
Ability to apply appropriate methods to disseminate research findings to the intended audience.	Applies a range of appropriate methods to disseminate research findings to the intended audience.	Applies appropriate methods to disseminate research findings to the intended audience.	Applies some appropriate methods to disseminate research findings to the intended audience.	Applies some appropriate methods to disseminate research findings to the intended audience with prompts.
Ability to analyse and use views and observations to improve the research report.	Critically analyses and uses relevant views and observations to improve the research report.	Analyses and uses relevant views and observations to improve the research report.	Analyses and uses some relevant views and observations to improve the research report.	Hardly analyses and uses relevant views and observations to improve the research reports.

Strand	Sub Strand	Specific Learning Outcomes	Suggested Learning Experiences	Suggested Key Inquiry Question
3.0 Improving Practice through Research	**3.2 Implementing Research Findings** **(2 Hours)**	By the end of sub strand, the teacher trainee should be able to: a) develop an action plan to implement research findings during teaching and learning, b) initiate moral and material support for implementation of the desired changes, c) mediate the teaching and learning process by acting on recommendations from the research findings, d) reflect on changes made in teaching and learning based on the research findings.	The teacher trainee to: • present procedures for making changes based on research findings, • critique presentations made by peers on procedures for making changes based on research findings, • role play requisitions for financial and material resources through oral and written communication, • use persuasive language to appeal for support to implement change, • simulate the implementation of a specific recommendation within the learning environment.	Why should a teacher develop an action plan to implement research findings?

Core competencies to be developed:
- Citizenship and leadership**:** as trainees are prepared to improve their practice through research interventions.
- Self-efficacy**:** as trainees plan and make changes in teaching and learning based on research.
- Creativity and Innovation: as teacher trainees explore ways of improving their curriculum implementation.

Values:
Responsibility**:** as trainees recognize their role in transforming their practice.

Suggested Formative Assessment Rubric

Level Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to develop an action plan to implement research findings during teaching and learning.	Consistently develops an action plan to implement research findings during teaching and learning.	Develops an action plan to implement research findings during teaching and learning,	Partially develops an action plan to implement research findings during teaching and learning,	Hardly develops an action plan to implement research findings during teaching and learning.
Ability to initiate moral and material support for implementation of the desired changes.	Excellently initiates moral and material support for implementation of the desired changes.	Initiates moral and material support for implementation of the desired changes.	Makes an effort to initiate moral and material support for implementation of the desired changes.	Hardly initiates moral and material support for implementation of the desired changes.

Level Indicator	Exceeds Expectations	Meets Expectations	Approaches Expectations	Below Expectations
Ability to mediate the teaching and learning process by acting on recommendations from the research findings.	Expertly mediates the teaching and learning process by acting appropriately on recommendations from the research findings.	Mediates the teaching and learning process by acting on recommendations from the research findings.	Mediates the teaching and learning process by acting on some of the recommendations from the research findings.	Rarely mediates the teaching and learning process by acting on recommendations from the research findings.