

THE UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION AND VOCATIONAL TRAINING



Field Support Programme for Diploma In Secondary Education

SELF STUDY MODULE
EDUCATIONAL RESEARCH, MEASUREMENT AND
EVALUATION

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Ministry of Education and Vocational Training
P.O. Box 9121,
Dar es Salaam, TANZANIA
Tel: 255 - 22 - 27733005
Fax: 255 - 22 - 2774420
Email:

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Writers:

1. Salumu Athumani Tutor, Morogoro Teachers College
2. Marietha K. Urio Tutor, Morogoro Teachers College

Coordinators:

1. Samuel J. Makundi - Teacher Education Department
2. Naomi V. Swai - Teacher Education Department

Secretary

Salome Stephano

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**THE MINISTRY OF EDUCATION AND VOCATIONAL TRAINING
A FIELD SUPPORT PROGRAM FOR DIPLOMA IN EDUCATION STUDENTS
EDUCATIONAL RESEARCH MEASUREMENT AND EVALUATION (REM)**

INTRODUCTION

This field support module for Educational Research, Measurement and Evaluation (REM), is prepared to help you to integrate the theories learned during the college based training and the actual practice in the field, in order to facilitate effective learning to your students and at the same time support you in preparation for your final diploma examinations. The module provides you with learning activities to be done during your fieldwork. The activities are designed to cover all the topics and subtopics learnt in Diploma course in Secondary Education syllabus, as a way of merging theory and practice. After doing the activities you will acquire ability to demonstrate competences in;

- Using measurement, assessment and evaluation skills and tools for improving the teaching and learning process.
- Developing and applying research skills in daily teaching and learning process as a way of solving educational problems.
- Carrying out Action research and share the findings to others.
- Applying interpersonal skills in establishing mutual supportive linkage between the schools and the community in solving problems in the teaching and learning process.

HOW TO USE THE MODULE

The module for Education Research, Measurement and Evaluation is organized in seven units. The units are Educational measurement; Test construction; Qualities of a test; Analysis and interpretation of the test results; Assessing achievements; Educational assessment and evaluation, and Educational research.

On the basis of this field support module, the seven units are fused into five themes, to give room for discussing topics/units holistically rather than in segments.

The five themes include:

- Educational measurement,
- Test construction, analysis and interpretation of test results,
- Qualities of a test,
- Educational assessment and Evaluation
- Educational research.

Each theme consists of an introduction with very brief explanation and/or examples. Competences to be developed are highlighted, supported by activities to be done during your fieldwork. There are reflection questions for self-assessment set as part of evaluation process during your fieldwork.

The module is well designed to enable you have self-study. For more details on the learning content/topics, you can make quick reference to your Education Research

Measurement and Evaluation instructional module for Diploma in Secondary school teachers, TIE (2007) and any other relevant reading materials.

REM caters for all subjects, because research, measurement assessment and evaluation are activities to be done in every subject. You are free to start with any topic according to your preference. However, you must keep in mind that, you have to study all the themes and do all the suggested activities provided before you go back to the college for your final examination. After graduation, it is expected that you are going to apply effectively the lessons learnt from the field practices.

When performing the tasks/activities in the module, make sure you read and understand the questions. This will enable you to know the needs of the question. You are also advised to keep returning to the question as you work on the answers to ensure that you are in the right track. In the process of learning you are advised to consult various literatures, tutors and your colleagues/staff members. You are also reminded to keep notes when you are reading, solving problems, making observations and discussions. You can keep these important notes in your diary or portfolio. Other tasks/activities will need you to write a report, which will also be kept in a portfolio.

THEME ONE EDUCATIONAL MEASUREMENT

Welcome to theme one which is about Educational measurement. This theme consists of three sub-topics, being Educational measurement, types of Educational measurement and scales of measurement. You need to revise the theoretical part as discussed in the module in college, to simplify application in the field. The theoretical part discusses the significance of Educational measurement, the strengths of norm-referenced measurement and criterion –referenced measurement. It also discuss about scales used in Educational measurement such as nominal scales, ordinal scale, Interval scale and ratio scale. The knowledge and skills learnt in this theme can also be applied in theme four, which is about Educational assessment and evaluation.

Competences

After performing the provided activities in this theme, you will have ability in:

- Applying the Educational measurements and scales of measurement in measuring students achievements.
- Use the knowledge learnt in improving teaching and learning process.

Activity. 01

Prepare a quiz in any subject of your specialization. Mark the test and record the results.

- 1) Arrange the students marks from the highest to the lowest
- 2) Analyze the person who got the lowest and the highest marks.
- 3) Find out their strengths and weaknesses in each quiz item/question, which need improvement
- 4) Describe the types of measurement and scales you used in the above questions.

Self-assessment.

Reflect on your daily activities at school setting and discuss with evidence, what common measurements and scales you use frequently in your daily teaching activities. Record the findings and keep in the portfolio.

THEME TWO

TEST CONSTRUCTION, ANALYSIS AND INTERPRETATION OF THE TEST RESULTS

Welcome to theme two, which is about test construction, analysis and interpretation of the test result. It is the continuation of theme one, Educational measurement, where now the knowledge on test construction is discussed. Measurement, is mainly concerned with “paper and pencil” through writing of test and examinations. Aim is to get numerical values as data for making judgment. It is important to remind yourself the important stages in making a classroom test as you learnt in the theoretical part. For example,

- Determining the purpose of testing
- Developing test specification in a blue print
- Selecting and preparing relevant test items.
 - ✓ Subjective
 - ✓ Objective test items that is Supply type, being short answer and completion; also Selection type being, True/False, matching items and multiple choice
- Assembling the test. This is putting together the prepared test items with instructions like time, sections, number of questions to be attempted in each section, marks in each question and each section.
- Administering the test. This is the actual practice of doing the test basing on the guiding rules.
- Appraising the test. This is test analysis and interpretation. It deals with judgment of the acquired data through calculations and use of rubrics.
- Using the results according to the intended objectives.

Competences

After doing the activities provided below, you have to demonstrate ability to apply Educational Measurement in educational setting by following the test construction procedures, using different scales and categories.

Activity 02

Set a terminal test of any subject of your specialization. Follow all important stages learnt in planning classroom tests as follows:

- 1) Set objectives of the test
- 2) Construct relevant test items by using
 - Different categories like objective and subjective test items.
 - Table of specification (base on Bloom taxonomy perspective)
 - Prepare a marking scheme
 - Discuss validity and reliability of the test made.
- 3) Administer the test
 - Observe and record all important events during test administration.
 - Give professional comment in every event.
- 4) -Mark the test
- 5) -Process the test scores
 - Use measures of central tendency and variability.
 - Standardize the test scores. Interpret the test results.
 - Conduct item analysis
- 6) Record the results

- 7) Use the test results according to the set objectives.
- 8) Keep record in every stage you did for documentation and keep in your portfolio

Self Assessments:

Throughout your schooling, you have experienced doing different classroom tests, examination e.g. terminal annual and National examinations. Reflect on them and comment on the procedures used from construction, marking and giving results.

THEME THREE

QUALITIES OF A TEST

Welcome to theme three which is about qualities of a test. This theme reminds you on the important qualities of a good test i.e. validity and reliability. Content validity, criterion related validity and construct related validity, all these guides you to check if the test constructed measures all what is intended to measure.

On the other hand when the same test is conducted to a similar group of students twice or more under similar conditions and produce the identical results, then we say that test is reliable. Test validity and reliability can be affected however by different factors, which can originate from the test itself, test scores or test administration.

Competences:

After doing the activities provided below, you have to demonstrate ability in preparing a valid and reliable test for your students.

Activity 03:

These tasks can be done in a natural school setting where students have high freedom to give their opinions/views.

- 1) Ask your students to tell if they always score their tests with high marks or other times they score lower marks in the same subject, taught by the same teacher?
- 2) Let them explain what they think are the causes for them to score their tests highly or lower in the same subject taught by the same teacher.
- 3) Guide them to discuss on what they think should be done in order to help them improve and maintain their good performance.
- 4) Summarize their discussions and write a report.

Self Assessments:

After performing the above activities, ask yourself the following questions:

- i). Is the kind of test items used among the causes of poor performance of my students?
- ii). How can I help my students to improve and maintain their good performances in my subject?

THEME FOUR EDUCATIONAL ASSESSMENT AND EVALUATION

Welcome to theme four, which is about Educational assessment and evaluation. In your course of study, you discovered that assessment procedures are more detailed than measurement procedures in the sense that, it is only test/examination instrument used for measurement compared to many instruments used for assessment like test/examination, observation, interview, questionnaire and portfolio. You are advised to use all assessment tools to assess your students inside and outside the classroom. The data collected will guide you in making valued judgment (evaluation) to your students as individuals or in groups.

You are advised to read and use RUBRICS or checklists so as to get knowledge on how to record data from interview and questionnaire responses; and how to award observations. Knowledge on test construction is already discussed on theme two.

Competences

You are expected to demonstrate competences in assessing and evaluating learner's achievement using different techniques like portfolio, observation, questionnaire, interview and test/examination after completing the given tasks.

Activity 04 (a)

- 1). Think of any learning problem/challenge which is within/out of school. In tackling that challenge, you can consider individual topic/subject (horizontal approach) or you consider the knowledge across subjects (holistic approach), so to see the interrelationships between subjects
- 2). Construct and use different guides to record students responses on the issue highlighted
 - Observation guide,
 - Questionnaire guide,
 - Interview guide
- 3). Construct and use Rubrics /Checklists which will guide during marking.
- 4). Interpret the responses and share with students and colleagues.
- 5). Write a report as part of Action Research

Activity 04 (b)

- 1) Set tailing activities for students to observe and record things happening in the community around the school.
- 2) Conduct a plenary discussion to see how the observed societal issues affect classroom learning. Let the students suggest ways to overcome the challenges.

Activity 04 (c)

Portfolio.

Prepare your portfolio and in it, put all important records experienced during field work session for documentation. Refer students guide to see what activities are proposed to be kept in the portfolio.

Self Assessments:

Comment on the experiences gained in using the above assessment tools. Among other comments, the following can be included:

- i). How does the tools differ and relate
- ii). How are they interrelated?
- iii). Which tool do you prefer most and why.

THEME FIVE EDUCATIONAL RESEARCH

Welcome to theme five, which is about Educational research. During your course of study, you were able to describe aims of educational research, Approaches of Research, Types of Educational research, Action Research; research process, research proposal and research report.

An effective teacher is also a researcher. Researchers need to use the knowledge gained from different sources on Educational research, to solve the day-to-day teaching and learning challenges in order to improve teaching and help students to learn more effectively.

During your fieldwork, you might be encountering some teaching and learning challenges which might also be originating from different sources. You might encounter for example, challenges concerning absenteeism, truancy, continuous failing of tests/examinations, late-comers and sometimes girls do not raise their hands to answer questions especially in co-secondary schools, and so on.

These challenges can be researched and the research results/findings can help you to improve your teaching and enable your students to learn more effectively.

Competences:

After doing the given tasks below, you will have ability in:

- Developing research skills.
- Carrying out Action research and share the findings/results with others.
- Applying research findings to solve educational problems.
- Transfer knowledge by applying the knowledge learnt in REM to other subjects taught in Secondary Schools and in real life situation.

Activity 05

Do the following activities/tasks precisely.

- 1) Identify one of the teaching and learning challenges, which you are facing in your teaching.
- 2) State that problem in a researchable way.
- 3) Construct the research questions
- 4) Design ways of collecting and analysing data
- 5) Collect and analyse the data
- 6) Write the research findings/results in form of research report/action research report.

Self-Assessment.

- (i) Suggest how the above research findings can be used to solve the educational problems.
- (ii) Give your general remarks basing on the research results/findings.
- (iii) Comment on the approach you used and give reasons.

Appendix 01

MOEVT
A FIELD SUPPORT PROGRAM TO DIPLOMA IN EDUCATION STUDENTS
ACTIVITY GUIDE – REM
Summarized syllabus - Topics vs. Themes

SYLLABUS BASED TOPICS			THEME BASED ANALYSIS		
UNIT	TOPIC	SUB-TOPIC	THEME	TOPIC	SUB-TOPIC
1	EDUCATIONAL MEASUREMENT	-Types of Measurement -Scales of measurement	1	EDUCATIONAL MEASUREMENT	-Types of Measurement -Scales of measurement
2	ASSESSING ACHIEVEMENT	-Instruments of assessing achievement -Categories of tests	2	TEST CONSTRUCTION, ANALYSIS AND INTERPRETATION OF TEST RESULTS	-Planning a test -Constructing test items -Categories of tests -Test administration and scoring -Processing of test scores -Measures of central tendency and variability. -Standardization of test scores -Item analysis
3	TEST CONSTRUCTION	-Planning a test -Constructing test items -Test administration, scoring and recording	3	QUALITIES OF TEST	-Test validity -Test reliability
4	QUALITIES OF TEST	-Test validity -Test reliability	4	EDUCATIONAL ASSESSMENT AND EVALUATION	-Types of Educational assessment. -Assessment techniques -Instruments of assessing achievement
5	ANALYSIS AND INTERPRETATION OF TEST RESULTS	-Processing of test scores -Measures of central tendency and variability. -Standardization of test scores -Item analysis	5	EDUCATIONAL RESEARCH	-Aims of Educational research -Approaches of research -Types of Educational research -Action research -Research process -Research proposal -Research report
6	EDUCATIONAL ASSESSMENT AND EVALUATION	-Types of Educational assessment. -Assessment techniques			

7	EDUCATIONAL RESEARCH	<ul style="list-style-type: none"> -Aims of Educational research -Approaches of research -Types of Educational research -Action research -Research process -Research proposal -Research report 		<p>NOTE: Theme 1-3 ----Educational Measurement. Theme 4 -----Educational Assessment and Evaluation. Theme 5-----Educational Research.</p>
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