



**AMIGONIAN
INTERNATIONAL
SCHOOL, ADDIS ABABA,
ETHIOPIA**

**STAFF DEVELOPMENT
TRAINING**

**BY: EASAW ALEMAYEHU, DOCTORAL CANDIDATE
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Application of Classroom Assessment

EASAW ALEMAYEHU

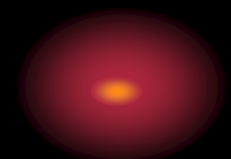
FEBRUARY 2022

OBJECTIVES OF THE DAY


Objectives:

By the end of the session the participants will be able to:

- 1. Define: Assessment, Evaluation and Action.**
- 2. Learn a skill that will help to define Formative & Summative Assessment strategies.**
- 3. Understand the concept of test plan.**
- 4. Discuss the importance of a test plan and test (table) of specification.**



Objectives:

- 5. Tell What should be considered in the preparation of the test plan.**
 - 6. List the categories of tests?**
 - 7. Identify the nature of Classroom achievement tests? Their format, merits and demerits?**
 - 8. Write major suggestions for writing each item type.**
- 

Brainstorming Questions



1. What is Assessment? evaluation?

Describe them using a specific example

2. What do you understand by Classroom Assessment?

3. How and when is CA implemented in classroom?

Example 1 (Assessment, Evaluation, Action)



Suppose you want to know if you are healthy. First you may measure your blood pressure (BP) and your weight. You stand on a scale and measure that your weight is 100 kgms (which is 20+ from your usual weight) and your BP is 200 by 180mmHg.

Example 1 (cont'd)



Process

Results

1. Assessment

100 kgms

200 \ 180 mmHg

2. Evaluation

unhealthy

3. Action

**Going on a diet,
minimizing salt intake,
&
do physical exercise**

Assessment, Evaluation & Action



- **Assessment is the process of gathering information about how students are progressing in their learning so that you can make decisions about them(Nitko, 1990)**
- **It is the process of collecting, interpreting, and synthesizing information to aid in decision making(Airasian, 1997)**

What is Classroom Assessment?

Classroom Assessment is a student evaluation system that operates at the classroom level and is integrated with the instructional process (Capper ,1996)



Assessment, Evaluation & Action



- **Evaluation:** is the process of making **VALUE JUDGMENT** about the quality of a student's performance using assessment results.
- **Action :** is what **YOU DO** as a result of your assessment and evaluation of students' performance.

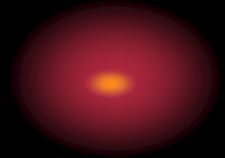
What is Classroom Assessment? (cont'd)



CA refers to a continual process of gathering information about students, instruction, and synthesize these information to help teachers understand their students, plan and monitor instruction and establish a conducive classroom atmosphere(Capper,1996;Nitko, 1996;and Airsian, 1997).

Past view of CA

- **incomplete**
- **restricts the idea of CA to frequent testing that were used to evaluate students after teaching and learning have been essentially completed.**



Past view of CA (cont'd)



Such a view provides little hope

for teachers to use information about

students' progress to improve learning

because ASSESSMENT OCCURS AT THE

END OF THE INSTRUCTIONAL PROCESS in

the form of tests, assignments, project

works, exams, etc.

Past view of CA (cont'd)

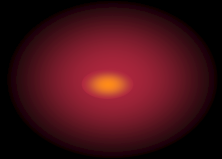


- **The past view sees assessment as something apart from teaching rather than as AN INTEGRAL PART OF THE TEACHING PROCESS ITSELF (Nitko, 2004)**

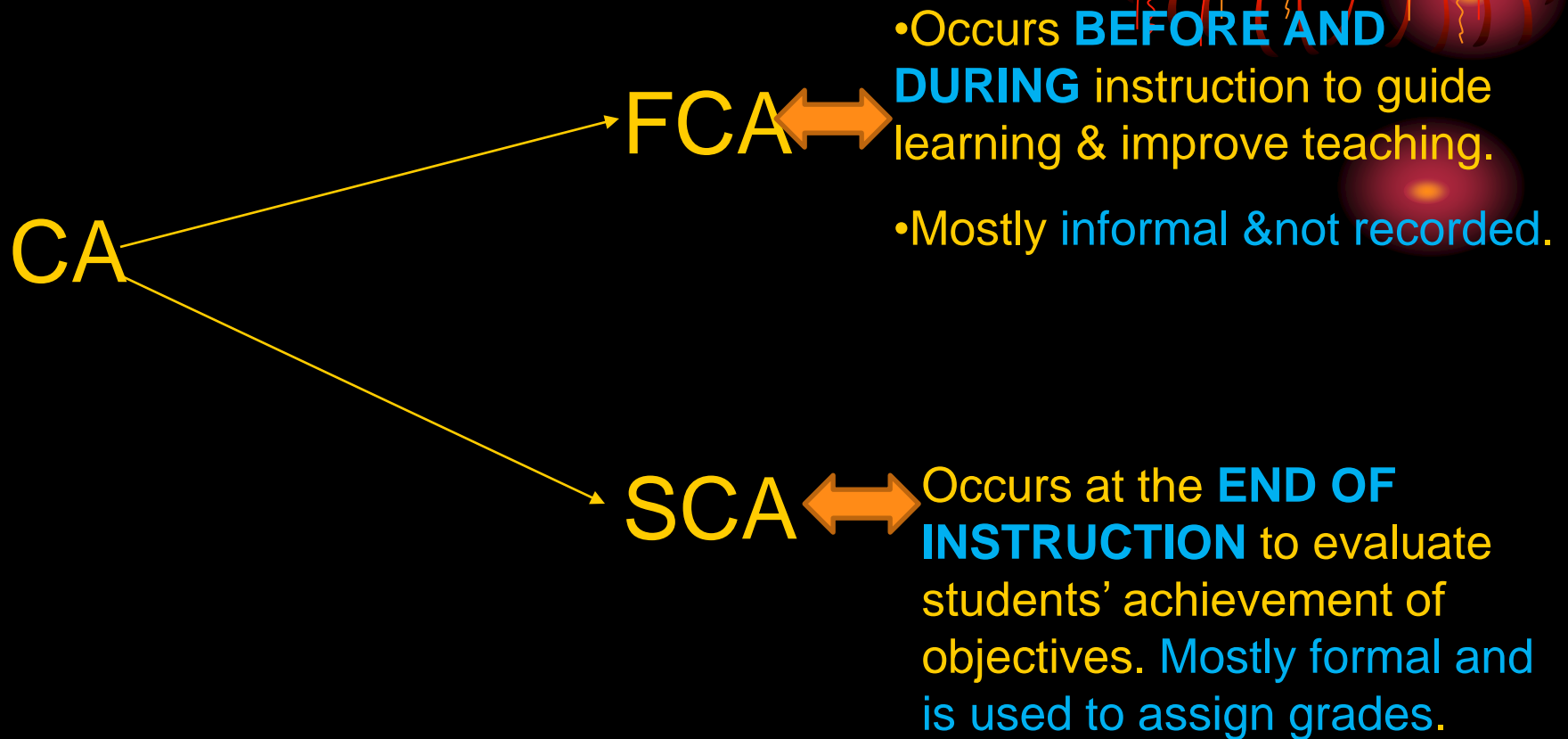
Incomplete understanding of CA

- **2 Lab report** **20%**
- **1 Written assignment** **10%**
- **Mid-term test** **20%**
- **1 Group project + pres.** **20%**
- **Final exam** **30%**

**Good and relatively fair, but incomplete
since it MISSES (IGNORES) THE FCA PART**



EMERGING VISION OF CLASSROOM ASSESSMENT



Emerging vision of CA (cont'd)



- **It is an ongoing process, which is part of instruction.**
- **Primarily, should be used to help student learning.**
- **Is used to evaluate one's teaching as well as students' learning**

Purposes of FCA & SCA



FCA

- Plan instructional activities
- Place students in learning sequences
- Monitor students' progress
- Diagnose students' learning difficulties
- Give feedback to students on how to improve

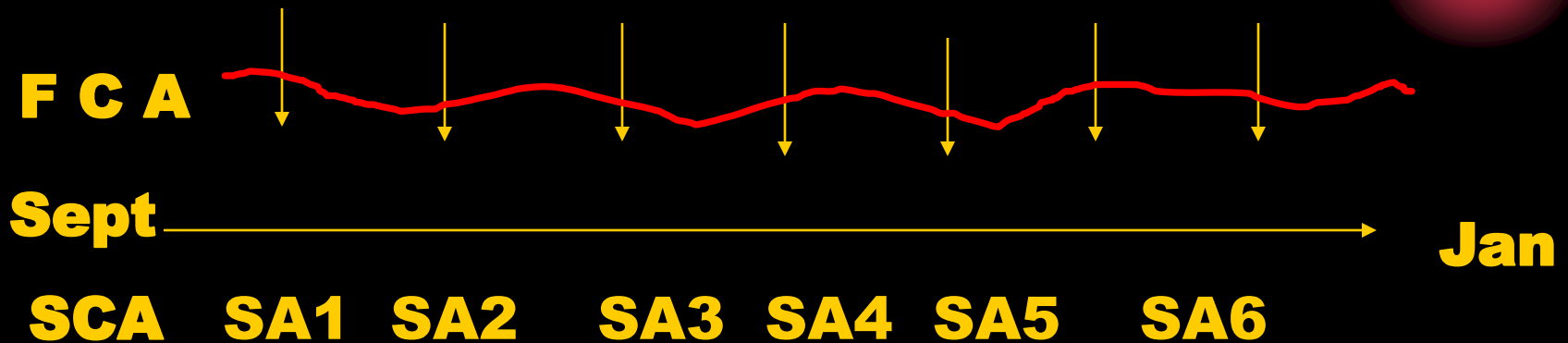
SCA

- Assign grades to students
- Report to parents and students about student's achievement
- Place students into remedial or advanced courses.
- Evaluate your own teaching

A more complete view of CA



$$\mathbf{CA = FCA + SCA}$$



Basic characteristics of CA



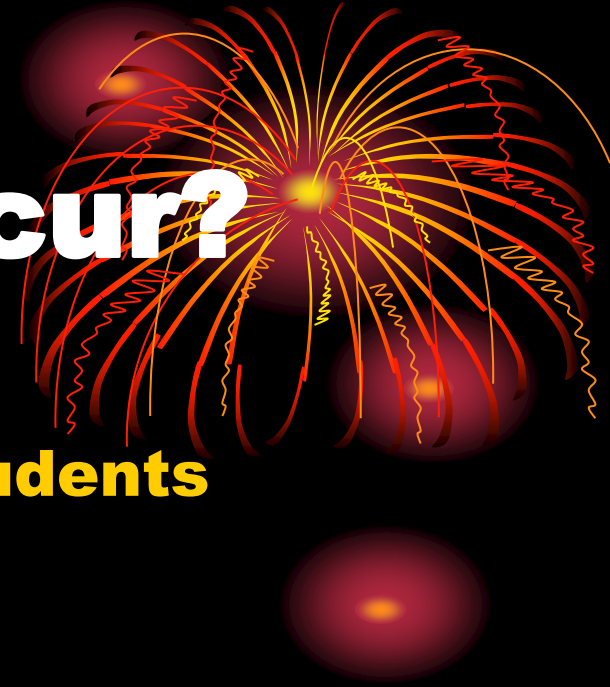
- **On going process of gathering information about students' learning**
- **Uses a variety of assessment methods (instruments) to make decisions:**
 - **about what to teach**
 - **About how to teach**
 - **About how well students have learned**

Basic characteristics of CA (Cont'd)



- **Provision of timely feedback**
 - **immediate (ideal)**
 - **As soon as possible: Test on Friday, result on Monday (Next best)**
 - **Latest possible: Test on Friday, result on next Friday**
 - **Poor practice: result after two weeks and later.**
- **Aligned with Curriculum**

When does CA occur?



- **Before instruction: What students already know**
- **During instruction : How well are students learning?**
- **After instruction : What students have learned from the current lessons**

---When does CA occur?



Phase	Assessment Activities
Before	<p>Purpose: To find out how much students know about</p> <p>Method: A class discussion lead by the teacher during which s/he makes notes.</p>
During	<p>Purpose: To assess the progress students are making.</p> <p>Method: Oral questioning, two class works, one quiz, etc.</p>

---WHEN DOES CA OCCUR?



Phase	Assessment Activities
After	<p>Purpose:</p> <ul style="list-style-type: none">• To determine how much students have learned,• To assign a grade,• To report to students and parents <p>Methods: Two class works, assignments, and project work, test, etc.,.</p>

Assessment Techniques for FCA



- **Construct tasks that help you to identify what students know and can do already.**
- **Use observation, worksheets, questioning in class, student conferences, or whatever mechanism is likely to give you information that will be useful for your planning and teaching.**
- **Any marking that you do is not for grading , but to highlight each student's strengths and weaknesses, and to provide the student with feedback that will further his/her learning.**

INFORMAL ASSESSMENT TECHNIQUES



Assessment techniques	procedures	purpose
Observing and listening to students	as they read, work cooperatively with others, carry out assignments, or solve problems	To identify the errors and misconceptions they have
Talking with students	Sometimes you may have to ask students to explain why they are doing what they are doing (i.e., the process)	to determine how well they understand a concept or how they think a problem should be solved,
Listening to students' responses	during a lesson	to determine how completely they understand, as compared to how well they can repeat a set answer.

Informal assessment techniques



Assessment techniques	procedures	purpose
Informal or written quiz	Giving informal oral or written quizzes	To determine which ideas the students are learning and which ones they need more help in learning
Reviewing first drafts of practical assignment	Reviewing first draft of products, project works	To see if students are on “track” to complete the work properly . Give feedback and guidance on how to “get back on track” and complete the work well.

Assessment's main purposes



Use classroom assessment to:

- **Guide and improve students' learning**
- **Guide teachers' instruction**

Techniques to be used for SCAs



- **Tests and Exams a teacher develops that are aligned with the **LEARNING OUTCOMES.****
- **Systematic scoring of projects, products a student creates, and performances a student demonstrates using rating scales and Checklists that is specifically aligned to the learning outcomes.**
- **End-of-term or end-of-year assessments aligned to the learning outcomes.**

Teacher's skills required for FCA



- **Giving students' feedback on how to improve their learning.(reviewing CW, HW, Observing how students solve problem, using first drafts of writing, project work, etc.)**
- **Identifying students' misconceptions and errors.(interviewing, conferencing, listening their responses, etc.)**
- **Determining students' level of understanding.(using informal oral or written quizzes)**
- **Planning how to use assessment to improve learning.**

Teacher's skills required for SCAs



- **Evaluating how well students meet standards.** (using tests set by a teacher or group of teachers, considering final versions of writings, projects, oral presentations, oral defenses , etc.)
- **Determining grades** (using valid weight when several assessments are combined into final grade)
- **Determining students' level of understanding.**
- **Planning how to use assessment to evaluate achievement of standards.**

Formative & Summative Assessment strategies



Formative strategies

- Using oral questioning, class & homework's, quizzes, short tests assignments, etc.
- Returning results in time
- Explaining how students can improve
- Meeting with students to go over their work at class

Summative strategies

Using unit tests, projects, final exams, research works, etc.

**Common Strategies for
both**



**Plan for Classroom
Assessment**

Brainstorming questions



- **What is a test plan?**
- **What is the importance of a test plan and test specification?**
- **What should be considered in the preparation of the test plan?**
- **What are the categories of tests?**
- **What is the nature of Classroom achievement tests? Their format, merits and demerits? Major suggestions for writing each item type?**

What is a test plan?



A test plan is a document that specifies :

- **The purpose of the test**
- **The knowledge, skills and attitude to be measured**
- **The length of the test**
- **The item formats that will be included in the test**
- **The time required to administer the test**

Importance of test plan



If a test plan/ specification is written properly it

- **ensures that the test is appropriate for the intended purpose.**
- **guarantees representativeness of sample of the domain of tasks to be measured/content validity/.**
- **guides the test development process.**
- **serves as a guide for item writers.**
- **helps in the preparation of item banks.**

Planning your Test /pre-conditions



- **The purpose of the test should be determined.**
- **The instructional objectives should be outlined.**
- **The contents imparted should be outlined in relation to the time spent and emphasis given.**
- **Develop a table of specification**

Additional factors to be seen



- **The age and attention span of the learners**
- **The grade level**
- **The nature of the discipline (subject/course)**
- **The nature of learning outcomes/objectives/ to be measured**
- **The characteristic of the items in the test**
- **The number of examinees taking the test**
- **The availability of time to score and report results, etc.**

Sample Example



- **Suppose you decided to develop 60 Objective items.**
- **You can determine the number of items from each unit and sub – unit applying a formula as follows**
- **Let
$$N. I = \frac{PS \times T.Q}{PT}$$**

A FORMULA FOR THE NUMBER OF ITEMS



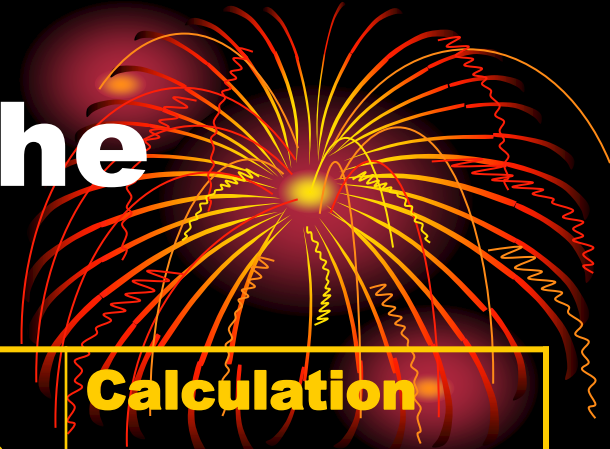
- **Let** **$N. I = \frac{PS \times T.Q}{PT}$**
- **N.I – Number of items from each unit or sub-unit.**
- **PS – the allotted periods/time spent to teach the specific topic or sub- topic**
- **TQ- Total number of questions to be prepared as a whole**
- **PT- the total number of periods assigned to teach the course.**

Abbreviations



- **N.I – Number of items from each unit or sub-unit.**
- **PS – the allotted periods/time spent to teach the specific topic or sub- topic**
- **TQ- Total number of questions to be prepared as a whole**
- **PT- the total number of periods assigned to teach the course.**

Application of the formula



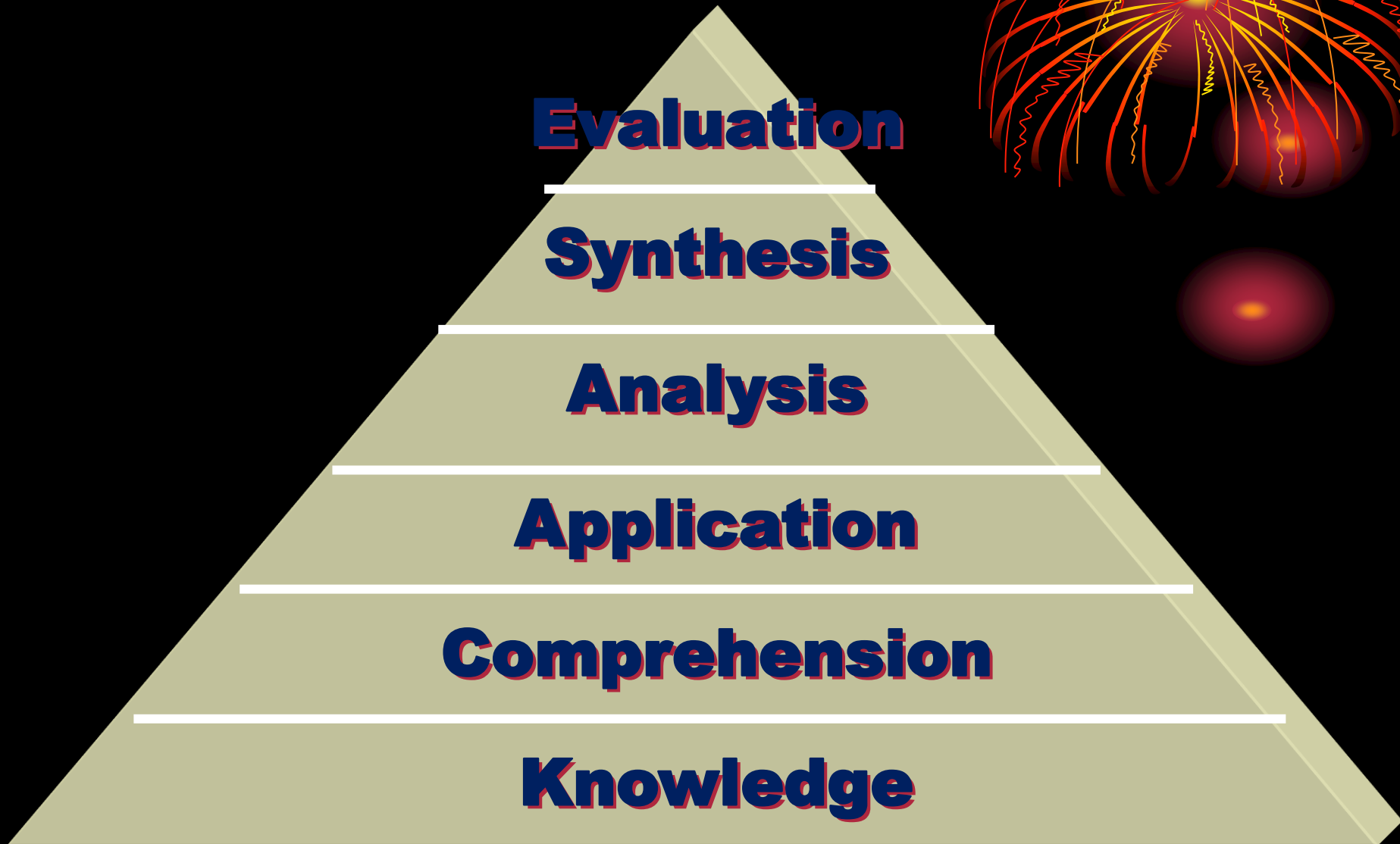
Unit	Main topics	Period allotted	Number of items	Calculation
1	Gen. human biology	27	?	$\frac{27 \times 60}{52} = 31$
2	Human & Diseases	22	?	$\frac{22 \times 60}{52} = 25$
3	Flowering plants	3	?	$\frac{3 \times 60}{52} = 4$

General form of the test plan



Unit	Topics/sub-topics	Period/time spent	No. of items	No. of items by %
1	Sense organs Nerves system Endo. system Rep. system	12 4 5 6	31	51.67%
2	//	//	25	41.67%
3	//	//	4	6.67%
	Total	52	60	100%

Bloom's Cognitive Domain





× Examples of Knowledge questions

- × How many digits are needed to make 1000?**
- × Who discovered -----**
- × When was -----**
- × Where is the -----**
- × What is the definition of -----**

× Examples of Comprehension questions

- × Can you, in your own words, explain what democracy is?**
- × What do mean by “teaching is both science and an art?”**

× Examples of Application questions

- × What countries from among African courtiers do you believe follow democratic system?**
- × What is the current status of Ethiopian education in terms of primary education access and coverage?**



- **Examples of Analysis questions**

- Why there are frequent disputes between neighboring African countries?

- **Examples of Synthesis questions**

- What would happen if the “-----“?

- **Examples of Evaluation questions**

- Given the following lines, which are curved which are straight?
- Was Emperor Hilesilassie wise enough to lead the country?
- Should the factory be closed down because of the pollution even if closing down results in high unemployment?

Table of specification by objectives

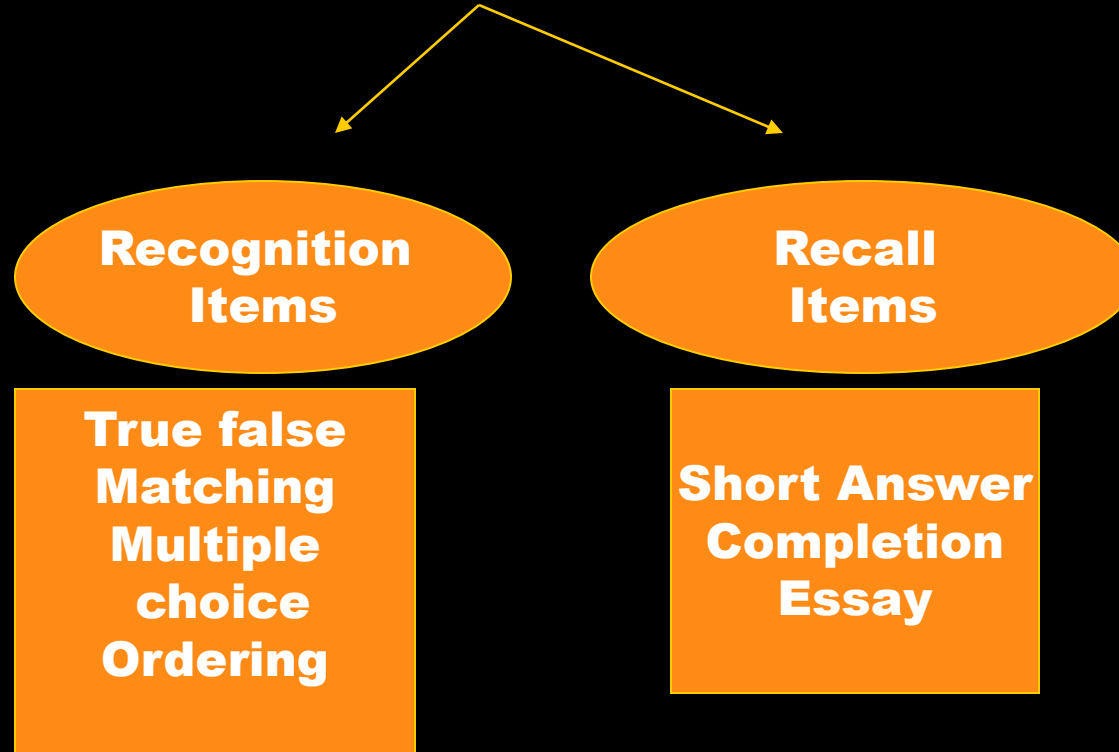


No.	Topics	Period / Time spent	No. O f i t e m s	Behaviors to be measured			
				Knowledge	Comprehension	Application	Total
1	The sense organs	12	14	5	5	4	14
2	The nervous system and health	?	?	?	?	?	?
3	The Endocrine system	?	?	?	?	?	?
4	The reproductive system in humans	?	?	?	?	?	?
5	Plant disease	?	?	?	?	?	?
6	Human diseases	?	?	?	?	?	?
7	Gymnosperms	?	?	?	?	?	?

Categories of Test Items



TEST TYPES



Characteristics and suggestions of constructing objective test items



True-false Item (Alternative- response item)

Format:

- **A declarative sentence, which is responded by saying true-false, yes-no, or correct or incorrect.**

Advantages:

- **Easy to construct and tends to be brief.**
- **Measures simple learning outcomes.**
- **Covers a large area of content (learning task)**
- **The scoring is objective and reliable**

Limitations:

- **Measures SLO (rote memorization)**
- **Susceptible (open) to guessing (50%)**

Suggestion for Constructing True-False Items



The directions for true-false item should be written appropriately.

Example

- **Say True or False (poor)**
- **Answer as True-or False (poor)**
- **Read each of the following sentences, if the sentence is correct, write "True", If it is incorrect write 'False' in the space provided (better) or**
- **Read each of the following statements. If the statements true, circle the "T". If the statement is false, circle the "F".**

Suggestion for Constructing True-False Items (cont'd)



- **Avoid the use of general statements.
Word the statement on a specific
content precisely (unequivocally true or
false). Example**
- **Equivalent sets are equal sets (not
absolutely true/ false)**
- **Equal sets are equivalent sets(better)**

Suggestion for Constructing True-False Items (cont'd)



- **Use negative statements sparingly, but the negative words (no, not or none) should be underlined, bolded, or italic.**
- **Double negatives, however, should be totally avoided. *Example:***
- ***A body cannot produce sound unless it is vibrating (poor)***
- ***A body can produce when it is vibrating (better)***

Suggestion for Constructing True-False Items (cont'd)



- **Test important ideas rather than trivial and general knowledge that can be answered by common sense . *Example***
 - 1. Haile G/ Selassie has two daughters (trivial)***
 - 2. Validity varies from test to test (common sense)***
- **Avoid long and complex sentence *Example***

" When sodium is put in water, it takes the water molecules apart and joins with part of the broken water molecules making a new substance called sodium hydroxide"
- ***When sodium is combined with water a new substance called sodium hydroxide is produced (better)***

Suggestion for Constructing True-False Items (cont'd)



- **Avoid the use of qualifiers in constructing true-false items. They give irrelevant clue to the correct response.**

Examples

- 1. Any substance can be magnetised (poor)***
- 2. A substance can be magnetised (better)***
- 3. Photosynthesis takes place only during the night (poor)***
- 4. Photosynthesis takes place during the night (better)***

Suggestion for Constructing True-False Items (cont'd)



- **True statements and false statements should be approximately equal in length. There is a natural tendency for true statements to be longer. Length as a possible clue to the correct answer should be avoided.**
- **The number of true and false statements should be approximately equal.**

Matching Items (Exercise)



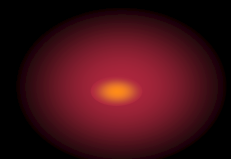
a) Format:

- **Is a modified form of the multiple Choice item in which the same alternatives are repeated for each premise.**
- **Matching item involves two parallel columns with Premises and responses**

You can construct matching item with

- **more responses than premises,**
- **more premises than responses, or**
- **an equal number of each.**

Possible Premise Sets with Associated Response Sets



- | Premise set | Response set |
|--|-----------------------------|
| • Accomplishments..... | Persons |
| • Noted events..... | Dates |
| • Definitions..... | Terms and Phrase |
| • Concepts (ideas, operations,
Quantities and qualities)..... | Symbols, signs. |
| • Title of works..... | Authors, artists |
| • Uses and functions..... | Parts, machines |
| • Names of objects..... | Pictures of objects. |

Advantages & limitations



b) Advantages:

- **measures ability to identify associations between two things.**
- **easy to construct.**
- **Scoring is objective and reliable.**

c) Limitations:

- **measures memorized factual information.**
- **does not measure CLOs**
- **A serious limitation is the difficulty to find homogeneous learning task**

Suggestions for Constructing Matching Items



- **Write directions that explain completely the intended basis for matching. Example.**
 - 1. Match column A with column B (very weak)**
 - 2. Match the items in column A with ideas in column B (poor)**
 - 3. Match the _____ in column B with the _____ column A and write the letter of the correct answer in the space provided/or in the separate answer sheet (better)**
- **Within a single matching exercise, make the premises and response homogeneous.**

A matching items on types of angles



- **instructions: Match the names of angles under column B with measures of angles in column A, and write the letter of the correct answer in the space provided.**

A

B

- 1. An angle that measures
b/n 180 - 360**
- 2. An angle that measures
b/n 90 – 180**
- 3. An angle that measures 90.**
- 4. An angle that measures
between 0 - 90**
- 5. Two angles that add up 90**
- 6. Two angles that add up 180**

- a) Comp angles**
- b) Right angle**
- c) Acute angle**
- d) Obtuse angle**
- e) Supp. angle**
- f) Reflex angle**

Suggestions for writing matching items



- **Place the longer phrases (sentences) in the premise list and the shorter ones (symbols) in the response list.**
- **Use numbers to identify the premises and letters to identify the responses.**
- **keep all the premises and responses of a matching item on the same page.**

Multiple – Choice Items



a) **Format:**

- **Contains stem, which poses the question.**
- **Contains alternatives or options, which include a correct answer and several plausible (wrong) answers (distracters).**
- **The stem can be stated as a direct question or as an incomplete statement. But, direct question stems are preferred.**
- **The student's task is to select the correct (best) response from the list of alternatives. Use 3-5 responses per item.**

Multiple – Choice Items (cont'd)



b) Advantages:

- **Measures a variety of instructional objectives (i.e., both simple and complex learning outcomes)**
- **Helps to sample a great deal of contents (covers a large area of contents)**
- **Scoring is completely objective and reliable.**
- **Reduces guessing**

c) Limitations:

- **Gives no room to express or write ones ideas or solutions**
- **Poorly written multiple-choice items can be trivial, superficial and limited to factual knowledge.**
- **Demands test construction skills otherwise it is difficult to write the item.**
- **Quality item requires ample time to construct**

Suggestions for constructing multiple-choice Items



- **The Stem should be meaningful by itself. Be clear, concise, and present a single problem. It should have enough information to answer the question.**
- **It should have only one correct answer from the alternatives given.**
- **Verbal associations between the stem and the correct answer should be avoided.**
- **All the options should be grammatically consistent with the stem of the item.**

Suggestions for constructing MCI (cont'd)



- **All distracters should be attractive and plausible to the correct answer.**
- **Avoid tricky items those which mislead or deceive examinees into answering incorrectly.**

Suggestions for constructing MCI (cont'd)



- **Structure the items around one central idea or problem.**
- **It is preferable to present a multiple choice item in positive terms (i.e., limit negative stem items: not, least, except)**
- **Use language that is simple, direct, and free of ambiguity.**
- **Don't make an item of a test of reading ability or vocabulary unless this is the purpose of the question.**

Suggestions for constructing MCI (cont'd)



- **The stem should not be too long**
- **The correct item should be positioned in a random order and finally**
- **Avoid using the option “all of the above”. It makes the item too easy and students get it correct with incomplete understanding**
- **The same is true to the option “none of the above”.**

Suggestions for constructing MCI (cont'd)



- **Arrange items in order of difficulty (i.e., from simple to complex), and**
- **Instructions should be reviewed and be clear.**

Wrongly set multiple choice items



1. which one is odd?

A. Bean

B. Cabbage

C. Meat

D. Milk (all options are different) no answer

2. The woman in the figure is

A. Tall B. Short C. Thin D. fat (in relation to what) no answer

Wrongly set multiple choice items



- **A word used to describe a noun is called an**
 - Adjective**
 - Conjunction**
 - Pronoun**
 - Verb (clue to the correct answer)**

Suggestions for Constructing Multiple choice Items (cont'd)



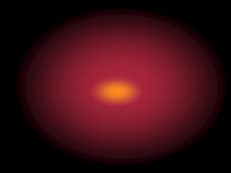
A magnet attracts _____

a) Wood b) plastic c) metal d) none (poor)

Comments

The stem is not meaningfully stated.

Choice 'c' and 'd' could be answers, however, the choice "metals" is partly correct and partly incorrect, options "a" & "b" are not plausible distracters.



Summary on the major limitations of classroom tests

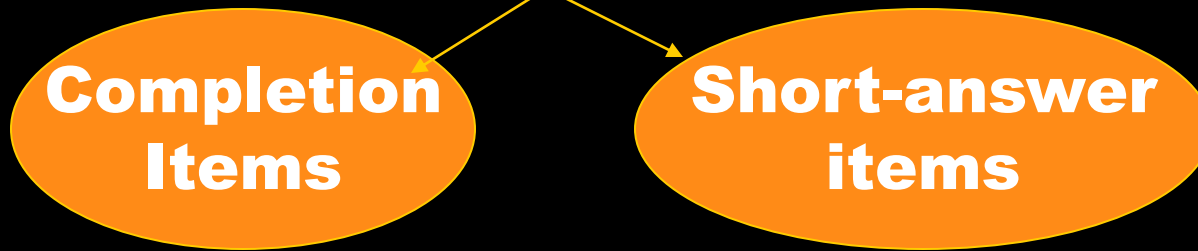


- **Writing directions**
- **Selection of appropriate item types**
- **Clarity /single ideas**
- **Plausibility/ homogeneity**
- **trivial /tricky items**
- **language (grammar, articles, excessive wordings, etc)**
- **Bias/fairness**
- **Qualifiers**

Supply Tests



a) Format: Supply tests



b) Advantages:

- **Relatively easy to construct.**
- **Requires recall of information (specific facts)**
- **It reduces the possibility of guessing.**

c) Limitations:

- **Answers are restricted to few words or phrases.**
- **Do not measure CLOs**
- **Scoring is relatively subjective and difficult.**

Suggestions for Constructing Supply Tests



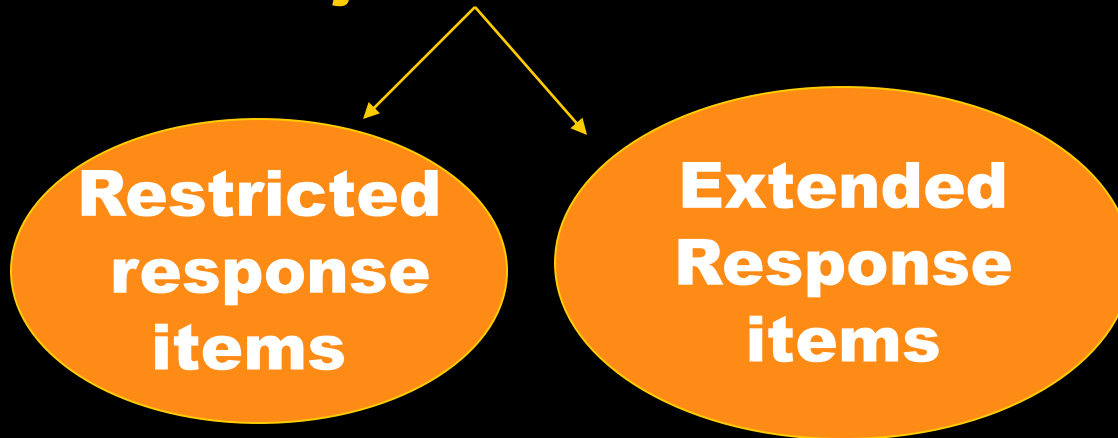
- **The wording must be clear and specific enough to avoid ambiguous responses.**
- **Avoid too many blank spaces in the same sentences.**
- **Placing the blank space at the end of the statement is most preferable.**
- **Avoid asking trivial words.**

Subjective Tests



They are used to measure complex learning outcomes.

Subjective tests



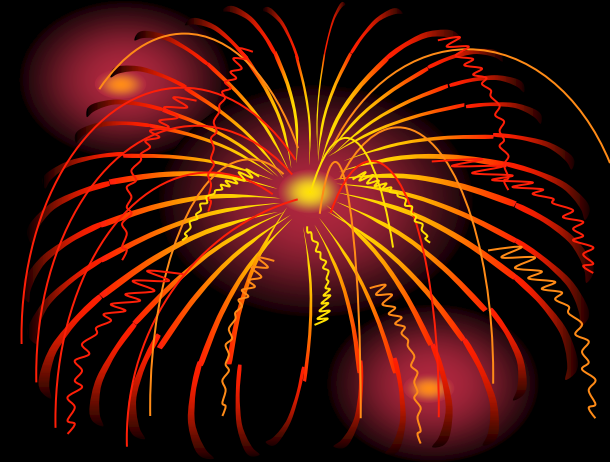
Subjective tests



2. Extended Response Essay Question:

- **This item type provides the student freedom for demonstrating his/her language ability. It allows the learner to select, organize, interpret, and evaluate ideas. Terms like explain, discuss, etc. can be used.**

Subjective tests



b) Advantages:

- **Measure complex learning outcomes.**
- **Easy to construct.**
- **Leaves no room for guessing.**
- **Improves skill of writing and logical organization of ideas.**

c) Limitations:

- **Scoring is unreliable because of teachers' mood for hand writing and spelling.**
- **Covers very limited area of contents (sampling is limited)**
- **It is time consuming in answering and grading.**

Suggestions for writing Essay Items



- 1. Restrict the use of an essay questions to those learning outcomes which can not be satisfactorily measured by objective item.**
- 2. Give more specific questions that can be answered more briefly.**
- 3. Avoid giving the examinee a choice among optional questions.**
- 4. Indicate an appropriate item limit for each question including the mark for each item.**
- 5. Essay test is subjective due to the subjectivity of the scoring process.**

Guide lines for scoring essay test



- a) Write out an ideal answer to the question and decide whether to use analytic scoring (point-method) or global quality scoring (relative method).**
- b) Score answers question-by-question rather than student-by-student.**
- c) Hide the identify of each student while scoring**
- d) Mark an essay question when you are physically sound and mentally alert and in environment with the fewest distraction.**

Writing and Reviewing Test Items(cont'd)



According to ETS (2001), each question must be reviewed to ensure that

- **It is clear and free of ambiguity**
- **Reviewers agree on the intended correct response**
- **The question is fair to all test – takers**
- **The number of point(s) to be assigned to each correct response is decided earlier**
- **It is in an appropriate editorial**

Pre-testing the test items



- **It is crucial to investigate the nature of each item with respect to fairness, validity, reliability, accuracy and practicality before tests are administered on a large scale. Hence the developed test should be administered to sample examinees who have similar characteristics (i.e. in terms of age, background, grade level, etc) and capable of representing the large norm group.**

Pre-testing the test items(cont'd)



- **Then after the results of the pre -test may indicate:**
- **The difficulty level of each question**
- **Whether each item is free from ambiguity or not**
- **Whether the distracters are functioning effectively or not**
- **Which item to be used in the future; revised, improved or eliminated, etc?**

Item Analysis :

Improving the quality of a test



- **Sax (1997) state that conducting item analysis is a vital task, which helps test makers to discover and identify items that are:**
- **Ambiguous (i.e., the inability of the highest – scoring students on the test to discriminate between a “correct” alternative and one judged by the test maker to be “wrong” which implies that the item is ambiguous from the students’ point of view)**
- **An ambiguous item could also be defined as one that allows for more than one “correct” response as judged by a group of experts.**



Item Analysis :

Improving the quality of a test (cont'd)

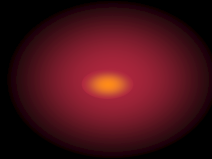
- **Miskeyed (i.e., when a large number of students in the upper group responds to what the test constructor believed was a distracter (a wrong answer)).**
- **Too easy or too difficult (i.e., these happen if an item is totally answered correctly or answered incorrectly by all examinees who attempted the item)**
- **Non-discriminating (i.e., if an item fails to measure individual difference).**



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THANK YOU