Construction Of Objective And Essay Type Test Items

> ▶▶ *Objective Type Tests*
> ▶▶ *Supply/Recall Type*
> ▶▶ *Selection/Recognition Type Tests*
>   — *True-false/Alternate Response Type*
>   — *Matching Type*
>   — *Multiple Choice Type*
>   — *Classification/Rearrangement Type*
> ▶▶ *Essay Type Tests*
>   — *Restricted Response Type*
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In a comprehensive evaluation programme different types of test items are used. Each type of item has its own unique characteristics of measuring particular types of instructional objectives. Each type of item has specific uses, advantages and limitations. Each type of item required some specific rules for construction. Therefore it is important to discuss different types of test items and specific rules for constructing these items.

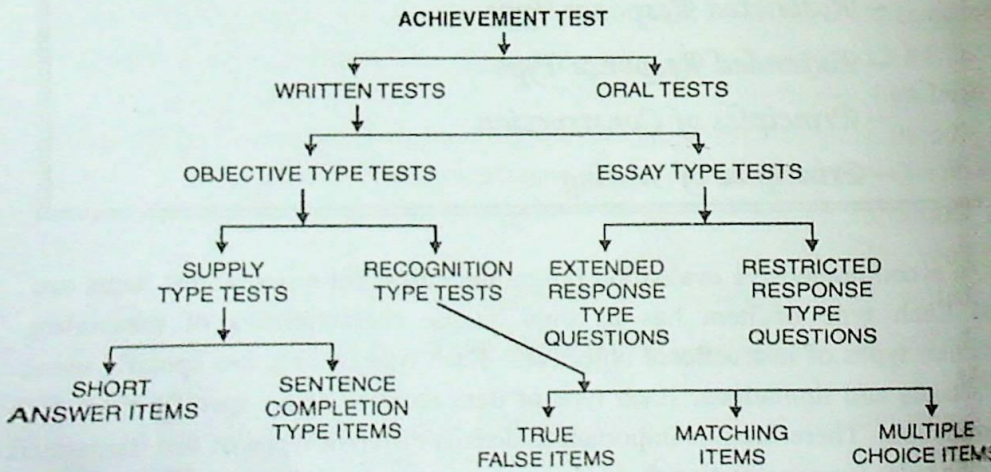Basically the written tests can be divided into two types.

- Objective Type Tests
- Essay Type Tests.

OBJECTIVE TYPE TESTS

Objective type test items are highly structured test items. It requires t pupils to supply a word or two or to select the correct answer from a number alternatives. The answer of the item is fixed one. Objective type items are me efficient to measure different instructional objectives. Objective type tests a also called as 'new type tests'. These are designed to over come some of t great limitations of traditional essay type tests. Objective type tests have prov their usefulness in the following way.

- It is more comprehensive. It covers a wide range of syllabus as includes a large number of items.
- It possesses objectivity of scoring. The answer in objective type test fixed and only one and it is predetermined. So that different perso scoring the answer script arrives at the same result.
- It is easy to score. Scoring is made with the help of scoring key or scoring stencil. So that even a clerk can do the job.
- It is easy to administer.
- Objective type tests can be standardized.
- It is time saving.
- Objective type tests can measure wide range of instructional objectives
- It is highly reliable.
- It is very much economic.

ACHIEVEMENT TEST

ACHIEVEMENT TEST
→
WRITTEN TESTS   ORAL TESTS

OBJECTIVE TYPE TESTS   ESSAY TYPE TESTS

SUPPLY TYPE TESTS   RECOGNITION TYPE TESTS   EXTENDED RESPONSE TYPE QUESTIONS   RESTRICTED RESPONSE TYPE QUESTIONS

SHORT ANSWER ITEMS   SENTENCE COMPLETION TYPE ITEMS   TRUE FALSE ITEMS   MATCHING ITEMS   MULTIPLE CHOICE ITEMS

Objective type tests can be classified into two broad categories according to the nature of responses required by them.

(a) Supply/Recall Type

(b) Selection/Recognition Type

SUPPLY/RECALL TYPE

Supply type items are those in which answers are not given in the question. The students supply their answer in the form of a word, phrase, number or symbol. These items are also called as 'free response' type items. According to the method of presentation of the problem these items can be divided into two types viz.,

(1) Short answer type   (2) Completion type

Example

Short answer type :

In which year the first battle of Panipath was fought ? **1526 A.D.**

Completion type :

The first battle of Panipath was fought in the year .....   1526 A.D.

In the first case the pupil has to recall a response from his past experience to a direct question. These type of questions are useful in mathematics and physical science. But in the second case the pupil may be asked to supply a word or words missing from a sentence. So in completion type a series of statements are given in which certain important words or phrases have been omitted and blanks are supplied for the pupils to fill in.

Principles of Constructing Recall Type Items : If the recall type items are constructed with the following principles then it will be more effective and it will function as intended.

1. The statement of the item should be so worded that the answer will be brief and specific :

The statement of the problem should be such that it conveys directly and specifically what answer is intended from the student.

Example :

Poor : Where did Gandhiji born ?

Better : Name the town where Gandhiji was born ?

2. The statement of the item should not be taken directly from the text books :

Sometimes when direct statements from text books are taken to prepare a recall type item it becomes more general and ambiguous.

3. While presenting a problem preference should be given to a direc question than an incomplete statement :

A direct question is less ambiguous and natural than an incomplet statement.

Example :

Poor : The battle of Palassey was fought in ....

Better : In which year the battle of Palassey was fought ?

4. When the answer is a numerical unit the type of answer wante should be indicated :

When learning outcomes like knowing the proper unit, knowing the prop amount are expected at that time it must be clearly stated that in which unit th pupils will express their answer. Specially in arithmeical computations the un in which the answer is to be expressed must be indicated

Example :

Poor : The normal body temperature of human being is——(94.8–F)

Better : The normal body temperature of human being is ....- Fahrenheit.

Poor : If one chocolate costs 25 paise what is the cost of 5 chocolates (₹ 1 Ps. 25)

Better : If one chocolate costs 25 paise what is the cost of chocolates? ₹——Paise——(₹ 1 Ps. 25)

5. The length of the blanks for answers should be equal in size and in column to the right of the question :

If the length of the blanks vary according to the length of the answer then will provide clue's to the pupils to guess the answer. Therefore the blanks equal size should be given to the right hand margin of the test paper.

Example :

Poor : Total number chromosomes in human cell is ⎯

(4

The power house of the cell is known as ⎯⎯

(Mitochondr

Better : Total number of choromosomes in human cell is ⎯⎯
            The power house of the cell is known as ⎯⎯

6. One completion type item should include only one blank.

Sometimes too many blanks affect the meaning of the statement and mak

it ambiguous. So that in completion type items too many blanks should not be included.

Example :

Poor : The animals those who have—(feather) and lay—(eggs) are known as—(aves).

Better : The animals those who have feather and lay eggs are called ————

Uses of recall type items :

Several learning outcomes can be measured by the recall type items. Some common uses of recall type items are as following.

- It is useful to measure the knowledge of terminology.
- It is useful to measure the knowledge of specific facts.
- It is useful to measure the knowledge of principles.
- It is useful to measure the knowledge of methods and procedures.
- It is useful to measure the ability to interpret simple data.
- It is useful to measure the ability to solve numerical problems.

Advantages of recall type items.

- It is easy to construct.
- Students are familier with recall type items in day to day class room situations.
- Recall type items have high discriminating value.
- In well prepared recall type items guessing factors are minimised.

Limitations of recall type items :

- These items are not suitable to measure complex learning outcomes.
- Unless care is exercised in constructing the recall items, the scoring is apt to be subjective.
- It is difficult to measure complete understanding with the simple recall and completion type items.
- The student may know the material being tested but have difficulty in recalling the exact word needed to fill in the blank.
- Sometimes mis-spelt words put the teacher in trouble to judge whether the pupil responded the item correctly or not.
- Simple recall item tends to over-emphasise verbal faculity and the memorization of facts.

(B) SELECTION/RECOGNITION TYPE

In the recognition type items the answer is supplied to the examinee along

with some distractors. The examinee has to choose the correct answers from among them. So that these tests are known as 'Selection type'. As the answer fixed and given so some call it 'Fixed response type' items. The recognition type test items are further classified into following types.

    (i) True-False/Alternate Response Type

    (ii) Matching Type

    (iii) Multiple Choice Type

    (iv) Classification or Rearrangement Type.

TRUE FALSE ITEMS : True false items otherwise known as alternate response items consists of a declaratory statement or a situation where the pupil is asked to mark true or false, right or wrong, correct or incorrect, yes or no agree or disagree etc. Only two possible choices are given to pupils. These items measure the ability of the pupil to identify the correct statements of fact definition of terms, statement of principles and the like.

Principles of Constructing True False Items :

While formulating the statements of the true false items the following principles should be followed. So that the items will be free from ambiguity and unintentional clues.

1. Determiners that are likely to be associated with a true or false statement must be avoided.

Broad general statements like usually, generally, often and sometimes give a clue that the statements may be true. Statements like always, never, all, none and only which generally appear in the false statements give clue to the student in responding it.

Example :

    Poor : T F = Usually the primeminister of India takes his office for five years.

    Poor : TF = Always the primeminister of india takes his office for five years.

2. Those statements having little learning significance should be avoided.

The statements having little significance some times compel the students to remember minute facts at the expense of more important knowledge and understanding.

3. The statements should be simple in structure.

While preparing statements for the true false items long, complex sentence

should be avoided because it acts as an extraneous factor which interefere in measuring knowledge or understanding.

Example :

Poor : The sex cell spermatozoa which is a male sex cell consists of two types of chromosomes like X and Y chromosome.   (T, F)

Better : Male sex cell spermatozoa consists of X and Y chromosomes.(T, F)

4. Negative statements, especially double negative statements should not be used.

Double negative statements make the item very much ambiguous. Sometimes it is found that the students over look the negative statements.

Example :

Poor : The angles of an equilateral triangle are unequal   (T, F)

Better : The angles of an equilateral triangle are equal   (T, F)

5. The item should be based on a single idea.

One item should include only one idea. We can obtain an efficient and accurate measurement of students achievement by testing each idea separately.

Example :

Poor : The son of Humayun Akbar who wrote ien-e-Akbari has preached a religion known as Din Ilhai.   (T, F)

Better : Akbar has preached a religion known as Din Ilhai.   (T, F)

6. False statements should be more in number than true statements.

Pupils like more to accept than challenge therefore giving more false statements we can increase discriminating power of the test and reduce the guessing.

7. The length of the true statements and false statements should be equal in size.

Uses of True False Items :

True false items are useful to measure varied instructional objectives. Some of the common uses of true false items are given below.

➢ It is used to measure the ability to identify the correctness of the statements, facts, definitions of terms etc.

➢ True false items are useful in measuring the ability to distinguish facts from opinion.

➢ It is useful to measure knowledge concerning the beliefs held by an individual or the values supported by an organization or institution.

➢ True false items are useful to measure the understanding of cause effect relationship.

➢ It is useful to measure the ability of the students for logical analysis

Advantages of True-false Items :

- True-false items provide a simple and direct means of meas essential outcomes.
- All the important learning outcomes can be tested equally well true-false items like other objective type items.
- The probability of an examinee achieving a high score on a true test by guessing blindly is extremely low.
- It uses few statements directly from text books.
- It possesses very powerful discriminating power.
- It is easy to construct.

Limitations of True-False Items :

- As there are only two alternatives so it encourages guessing.
- —Many of the learning outcomes measured by true-false items c measured more efficiently by other items.
- A true false item is likely to be low in reliability when the numl items are less.
- The validity of these items are questionable as the students may the uncertain items consistently 'true' or false.
- It does not possess any diagnostic value.

MATCHING ITEMS :

Matching items occur in two columns along with a direction on the ba which the two columns are to be matched. It consists of "two parallel co with each word, number or symbol in one column being matched to a sentence or phrase in the other column." The first column for which matck made are called as 'Premises' and the second column from which the sele are made are called 'Responses'. On the basis of which the matching v made are described in the 'Directions'. The students may be asked to mat states with their respective capitals, historical events with dates, kings wit achievements etc.

Example :

Direction—Match the dates in the column 'B' with the respective ev column 'A' by writing the number of the item in 'B' in the space provided date in column 'B' may be used once, more than once or not at all.

A	B
1. India got her independence	(i) 1526
2. Sepoy Mutiny	(ii) 1857
3. Black whole tragedy	(iii) 1919
4. First battle of Panipath	(iv) 1942
5. Death of Mahatma Gandhi	(v) 1947
	(vi) 1948

Principles of Constructing Matching Items :

Matching exercises are very much useful when it is properly arranged. While preparing a matching item care should be taken to prevent irrelevant clues and ambiguity of direction. The following principles help to prepare effective matching exercises.

1. Homogeneous premises and responses should be given in one matching exercise.

In order to function a matching exercise properly the premises and responses of any matching cluster should be homogeneous. Therefore one matching exercise may include kings and their achievements, inventors and their inventions, explorers and their discoveries, countries and its best productions etc.

Direction : On the line to the left of each achievement listed in column A write the king's name in the column B who is noted for that achievement. The name of the kings in the column 'B' may be used once, more than once, or not at all.

A	B
1. Sun temple of Konark	A. Chodaganga Dev
2. Tajmahal	B. Kapilendra Dev
3. Jagganath temple of PURI	C. Langula Narashina Dev.
	D. Sahajahan

2. The list of Premises and Responses should be short : In order to maintain the homogenity of items it must be short listed. Experts are of the opinion that 4 to 5 premises should be matched with 6 to 7 responses. Certainly there should not be more than ten in either column.

3. The longer phrases should be used as pre-mises and the shorter as responses : It enables to take the test efficiently. It enables examinees to read the longer premise first and then to search the response rapidly.

4. The premises and responses should be unequal in number : The number of responses should be more or fewer than the premises. The students should be instructed in the direction that response may be used once, more than

once or not at all. This is the best method to reduce guessing in match exercises.

5. Responses should be arranged in logical order : In responses numbers should be arranged sequencially from low to high. The words sho be arranged in alphabetical order.

6. Directions should clearly explain the intended basis matching : To avoid ambiguity and confusion clear direction about the basis matching must be given. It will also reduce testing time because the examir need not to reàd all the premises and responses to understand the basis matching.

7. One matching exercise must be given on one page of the test paper

Uses of Matching Item :

Matching exercise is useful in the following learning outcomes.

➢ Useful in measuring the relationship between two things like dates events, persons and their achievements, terms and definitions, auth and books, instruments and uses etc.

➢ It is used to measure the ability to relate the pictures with words.

➢ It is useful to measure the ability to identify positions on maps, charts diagrams.

Advantages of Matching Items :

- Matching items are easy to construct.
- Large amount of related factual material can be measured with in a sh period.
- Guessing factor is minimum in a carefully and properly construc matching item.
- These items are equally reliable and valid like other objective t items.

Limitations of Matching Item :

- It is limited to test the factual information only.
- It is not efficient to measure the complete understanding interpretation ability of the pupils.
- Always it is not possible to find a good number of homogeneous item
- It is inferior to multiple-choice item in measuring application judgement aspects of students' learning.

MULTIPLE-CHOICE TYPE ITEMS :

Multiple choice type items are the most widely used objective type

items. These items can measure almost all the important learning outcomes coming under knowlege, understanding and application. It can also measure the abilities that can be tested by means of any other item—short answer, true false, matching type or essay type.

In multiple choice type items a problem is presented before the student with some possible solutions. The statement of the problem may be presented in a question form or in an incomplete sentence form. The suggested solutions are presented in words, numbers, symbols or phrases. The statement in a multiple choice type item is known as 'stem' of the item. The suggested solutions are called as alternatives, or choices or options. The correct alternative is called as the answer and the other alternatives are known as distractors or decoys or foils. In the test the examinees are directed to read the stem and to select the correct answer.

Example :

Sentence completion form : Encircle the letter behind the correct answer.

The apparatus used for measuring the density of liquid things is called—

    (a) Thermometer   (b) Barrometer

    (c) Pyrometer   (d) Lactometer

    (e) Hygrometer.

Question form : Encircle the letter behind the correct answer.

Which one of the following cities is the capital of United Kingdom ?

    (a) Lankashire   (b) London

    (c) Lords   (d) Manchester

    (e) Edinburgh

Principles for Constructing Multiple Choice Type Items.

As we have discussed the multiple choice type items have a wide applicability in educational measurement. Therefore care must be taken in constructing multiple choice type items to enhance its applicability and quality. Construction of multiple choice type items include two major functions—

    (a) Construction of the stem

    (b) selecting ideal alternatives.

The following principles will help the test maker in this direction.

1. Formulate the stem that clearly represent the definite problem. In a multiple choice item a question or an incomplete statement should include the complete problem in it. It must indicate what the student has to select from the alternatives.