How to Construct TOS
(*Table of Specifications*) for testing language?

This book is designed to be used as a reference for teachers with skills and knowledge about constructing a table of specification (TOS) as a blueprint for a test. TOS is a tool to help the teacher decide to create test construction and improve the validity of the teacher-made test for evaluation. It is also helpful for teachers to determine the kinds of examinations they need to administer based on the course materials. It involves the content material to be covered and the relative emphasis to be placed based on the materials and instructional objectives stated in the curriculum. The contents of this book were taken from various relevant and up-to-date data source which covers some chapter including testing, evaluating, and assessment in language learning, bloom taxonomy, testing by using HOTS (higher order thinking skills) and constructing test specification.

UNIPMA Press
WE GOT IT

UNIPMA Press
WE GOT IT

How to Construct TOS
(*Table of Specifications*) for testing language?

Nuri Ati Ningsih
Rengganis Siwi Amumpuni

How to Construct TOS (Table of Specifications) for Testing Language?

Nuri Ati Ningsih
Rengganis Siwi Amumpuni

How to Construct TOS (Table of Specifications) for Testing Language?

Preface

First of all, let us express thanks to Allah. The Almighty, for providing us with grace and benefits to accomplish this book entitled "How to Construct TOS (Table of Specifications) for Testing Language?". This book is designed to be used as a reference to teachers about constructing a table of specification (TOS) as a blueprint of a test that involves the content material to be covered and the relative emphasis to be placed based on the materials and instructional objectives stated in the curriculum. TOS is a tool to help the teacher decide to create test construction and improve the validity of the teacher-made test for evaluation. It also helps the teacher to identify the types of tests they need based on the course of materials.

The contents of this book were taken from various relevant and up-to-date data source which covers some chapter including testing, evaluating, and assessment in language learning, bloom taxonomy, testing by using HOTS (higher order thinking skills) and constructing test specification.

The writers would like to express their gratitude to Lembaga Penelitian dan Pengabdian kepada Masyarakat (LPPM) Universitas PGRI Madiun which sponsored the program, the Head of the English Department, and the Rector of Universitas PGRI Madiun who allowed the writers to write this book. In addition, a big thanks to all the contributors who helped accomplish this book

The Writers

Contents

Chapter 1
Testing, Evaluation, and Assessment

A. Testing

A.1 What is Testing?

The definition of the word testing provided by the Oxford Dictionary is as follows: (noun) the activity or process of testing or checking someone or something; (adjective) showing a person's capabilities by placing them under pressure; difficult. The root meaning of the word "test" is "to take steps to check the quality, performance, or reliability of (something)," and this is done primarily prior to bringing something into general application or practice. A test is a method that functions to determine the student's ability, knowledge, or performance in a certain domain. It could be in the cognitive, affective, or psychomotor domain. Brown (1994) proposes that a test is a procedure that is carried out in order to evaluate a student's capability to carry out tasks in a given area within a certain period of time in order to achieve a specified objective. According to Le Grange & Reddy (1998), A test is a tool, technique, or approach that is meant to examine students' knowledge or their ability to do a certain activity. Tests might come in the form of multiple-choice questions, essay questions, or performance-based questions. When viewed in this light, testing might be understood to be a type of assessment. Therefore, it can be concluded that a test refers to a tool, technique, or method to measure the student's ability, knowledge, and performance. In other words, it is used to measure students` abilities or competencies.

A.2 Types of Testing

Brown (1994) classified testing into several types. They are;

a. Placement tests

A test of this kind is intended to provide an educator with guidance regarding the placement of a student into a specific level or section of a language curriculum or school.

b. Diagnostic tests

This test helps teachers and learners to assess the student's linguistic knowledge and language skills before a course is begun.

c. Proficiency tests

The purpose of this examination is to determine the student's level of language. It is not tied to any specific method of education but rather evaluates the learner's overall level of language knowledge.

d. Language Aptitude Test

This test is designed to evaluate a student's potential for acquiring linguistic knowledge. This test consists of several different test items which measure such abilities as:

1. *Sound-coding ability*

   i.e. the ability to identify and remember new sounds in a new language.

2. *Grammar-coding ability*

   i.e. the ability to identify the grammatical functions of different parts of sentences.

3. *Inductive learning ability*

   i.e. the ability to work out meanings without explanation in the new language.

4. *Memorization*

   i.e. the ability to remember and to recall words, patterns, and rules in the new language.

e. Achievement tests

This test is intended to measure the students' skills and knowledge after they do some kind of instruction given by their teachers.

A.3 Classification of Testing Task

A.3.1 Matching Test

The matching test is almost similar to multiple choice. It has similar characteristics to multiple-choice tests, but it also has different. One of them is each option can be matched to one of several stems.

Examples include

a. matching words or sentences to the pictures they describe

b. matching the words they use to their meanings

c. matching sentence fragments or matching responses to their questions

d. matching dialogues or texts to likely contexts

e. selecting the most appropriate headings or summary statements to correspond with the individual paragraphs or parts of a text

These words are important for understanding the writing process. Match each word with the correct definition.

a.	step	**1.**	to check a piece of writing for errors
b.	topic	**2.**	a group of related sentences
c.	gather	**3.**	one thing in a series of things you do
d.	organise	**4.**	subject; what the piece of writing is about
e.	paragraph	**5.**	to change or correct a piece of writing
f.	essay	**6.**	a short piece of writing, at least three paragraphs long
g.	proofread	**7.**	to arrange in a clear, logical way
h.	edit	**8.**	to find and collect together

Source: http://penilaiangrammar.blogspot.com/2009/07/simple-completion-sentences.html

A.3.2 Multiple Choice Test

The multiple-choice item test format is a type of flexible test format that can be used to assess the integration of ideas stated in the texts. In a language test, it involves vocabulary, grammar, and propositional meaning.

Example:

26. Phillip's _____ tone endeared him to his comical friends, but irritated his serious father.
   a. aloof
   b. jesting
   c. grave
   d. earnest
   e. conservative

27. Brian's pale Irish skin was _____ to burn if he spent too much time in the sun.
   a. prone
   b. urbane
   c. eminent
   d. erect
   e. daunted

Source: Pustaka Bhs Inggris 2017

A.3.3 True False Test

The explicit meaning of individual phrases or units of ideas in spoken language can be evaluated through the use of tests referred to as true/false items. In another way, it is also used to measure the student's ability to judge the accuracy of summaries of opinions expressed in a certain text.

Example:

I have a kitten named Simba, he is a 4 month old domestic cat. We named him after the character in the movie The Lion King because of his color. Simba is a little bit chubby but he likes to play and jump around everywhere. If he sees something interesting, like keyrings, or anything else that is hanging, he will jump and try to get it. Sometimes, if he is not in the mood to play, he will sit cutely somewhere. He also loves to snuggle with me and I love him for that.

28. What is the kitten's name?
   a. **Simba**
   b. Aurora
   c. Kiko
   d. Poo

Source: http://penilaiangrammar.blogspot.com/2009/07/simple-completion-sentences.html

A.3.4 Information Gap

This type of task gives the students incomplete information. Students must try hard to combine their knowledge to complete a task.

The type of information gap includes:

- Differences between the pictures

- Completing the table and the picture

- Putting together a story from its constituent parts

Example:

Are there two vases in your classroom?. . .
○A. Yes, there are
○B. No, there are not
○C. Yes, there is
○D. No, there is not

Source: https://www.diaryguru.com/2021/08/soal-bahasa-inggris-things-in-the-classroom.html

A.3.5 Completion Test

The completion questions and tests are a sort of exam that ask the student to finish an incomplete statement that is missing one or more significant components like words, sentences, numbers, and so on. It is generally agreed that completion questions are the most effective way

to test for memorization of important information and are also superior for evaluating lesser levels of cognitive ability.

    Example:

Perintah: Complete the following sentences with "do" or "make"

He _____ a lot of money last year. (*Answer*) He **made** a lot of money last year.

I always _____ my best. (*Answer*) I always **do** my best.

He's the _____ (tall) person in the class. (Answer) He's the **tallest** person in the class.

They _____ (be) in California last year. (Answer) They **were** in California last year.

Source: http://penilaiangrammar.blogspot.com/2009/07/simple-completion-sentences.html

A.4 Developing Test

    According to CEFR (2011),

Some stages must be done by the teachers in administering the test. They are described in the following figure;
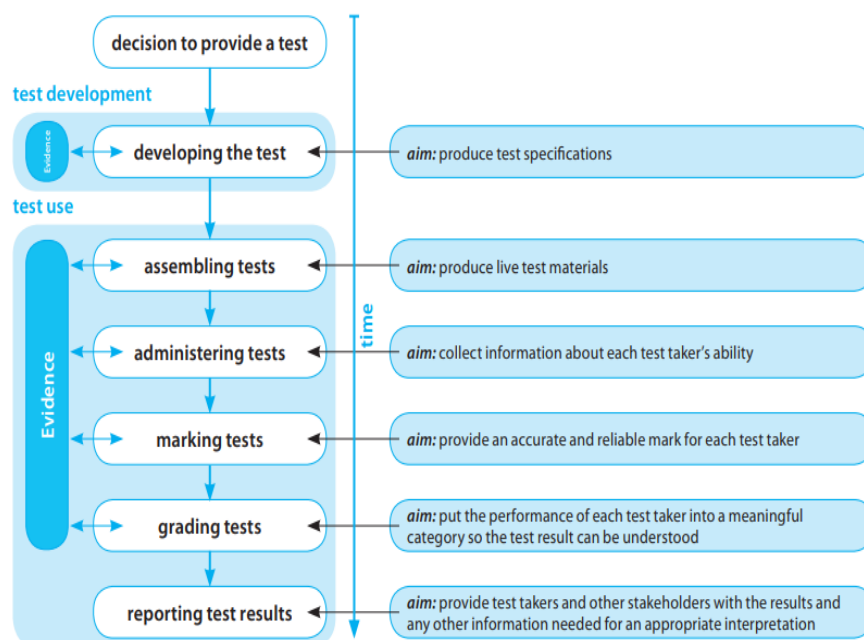

Figure 1.1 The basic testing cycle

B. Evaluation

B.1 What is Evaluation?

Thakur, P proposed some definitions of evaluation based on some experts. They are;

Thorndike and Hegan:

Evaluation is a term closely related to measurement. In some cases, it includes informal and intuitive judgment of the students learning progress. Evaluation describes the thing related to a certain component that is chosen and judges the student's degree of acceptability or suitability of the material given.

James M. Bradfield:

Evaluation is the assignment of symbols to the phenomenon, to characterize the worth or value of a phenomenon, usually concerning some cultural or scientific standards.

Norman E. Gronlund and Robert L. Linn:

The term "evaluation" refers to a methodical procedure that entails gathering, evaluating, and interpreting information in order to assess how well students achieve educational goals (https: //www.yourarticlelibrary .com/ education/evaluation-in-education-meaning- principles-and-functions/89656).

Evaluation has a wider meaning covering academic and non-academic achievement the students have gained. In short, evaluation can be defined as the process of collecting, analyzing, and interpreting the information about the students done systematically and it has a purpose to determine the extent to which students have achieved the instructional objectives. There are some types of evaluation. Detail types and descriptions of each type of evaluation are described as the following;

a. Formative Evaluation

Formative evaluation is a type of evaluation that is conducted during the process of teaching. The purpose of this type is to provide continuous feedback to the teacher and the students. It is to evaluate the students after completing or finishing a lesson or topic. The result of this evaluation is to get an idea of whether they have to change the teaching method or not.

b. Summative Evaluation

Summative evaluation is a type of evaluation conducted at the end of an academic year/certain period. The purpose is to evaluate the achievements of instructional objectives and the students' change in the overall personality at the end of the period. The summative evaluation also considers a comprehensive aspect of learning. This evaluation not only takes into account the grade of formative evaluation but also tests the students after completing a certain course to get the final grade and give feedback to the students. Grading is conducted based on summative evaluation.

c. Prognostic Evaluation

Prognostic evaluation is used to estimate and predict the students' future careers. A prognostic evaluation broadens the result of an assessment by analyzing the abilities and potential with the further dimension, the future development, the necessary condition, the time frame, and the limit of the person.

d. Diagnostic Evaluation

A diagnostic evaluation is used by the teacher to evaluate the student's strengths, weaknesses, knowledge, and skills before the beginning of the teaching-learning process. The result of this type of evaluation is used to design the course and the curriculum. Conducting the diagnostic test needs special preparation and techniques.

e. Norm-Referenced Evaluation

This type of evaluation is done by comparing the students' performance individually within (1) the group of students being tested, (2) the group of students of similar age, (3) the group of students of similar experience, and (4) the group of students of similar background. The result of the evaluation will determine the position of students in the group.

f. Criterion-Referenced Evaluation

This type of evaluation represents the individual performance of the students compared with a fixed standard performance. It portrays the accuracy of the student's performance, such as; how well the individual performance concerning a specific standard.

g. Quantitative Evaluation

Quantitative evaluations are conducted by using scientific tools and measurements It is possible to quantify or count the findings of this evaluation. Oral tests, written tests, and performance tests are all examples of the kinds of evaluation methods that might be utilized for this purpose.

h. Qualitative Evaluation

The characteristics of this type of evaluation are more subjective than quantitative evaluation. Qualitative evaluation is established in science based on the use of the five senses. It involves value judgment, Then, the techniques or tools used in Qualitative Evaluation are Cumulative Records and Anecdotal records (https://www.your article library. com/education/ evaluation-in-education-meaning-principles-an function /89656).

B.2 The Purpose of Evaluation

a. Improvement of Learning

Giving evaluations to the students will contribute directly to the development of the students in the learning process. The result of an evaluation gives real feedback to the teacher about the improvement of the student's ability and their progress in learning. Continuous evaluation provides the instructor with information regarding the level of learning at each stage. If the students find difficulties or gaps in their learning, an appropriate remediation can be provided to overcome this situation. For the students who show good progress in their learning, enrichment measures can be initiated. Therefore, evaluation contributes to the improvement of learning through the processes of diagnosis and remediation.

b. Improvement in Teaching

The results of the evaluations can determine whether the poor performance of the students is caused by poor teaching, ineffective teaching methods, the absence of the teachers, or the teachers' ignorance in the teaching process. Thus, evaluation can be used as an important instrument for improvement in teaching.

c. Renewal of Curriculum or Course Content

The outcome of the assessment provides comments and details about the relevance and usefulness of the material covered in the course. Modification of the curriculum can be done if we find unsuitable material or content for the students. Specific information is very useful in defining the learning objectives as well. So, evaluation can provide a basis for curriculum revision.

d. Development of Non-Cognitive Capacities.

In this era, the main concern of education is not enough on intellectual development. Teachers also have to develop other aspects such as social intelligence, emotional intelligence, and physical aspects of personality, and the vital one to be developed today is mental intelligence. So, comprehensive evaluation takes into all the aspects above in it (https://targetb-ed.co.in/what-is-evaluation-in-education-types-of-evaluation assessment -for- learning-b-ed-2nd-year/).

B.3 The Characteristics of Good Evaluation

a. Evaluation is an Objective-based Process

Evaluation is used to know the development of the student's personality and their achievement in the process of teaching and learning. In this case, both are reflected in the teaching-learning outcome or the instructional objectives. Meaningful evaluation must be in tune with these instructional objectives/ learning outcomes. Instructional objectives offer some directions used for the teaching and evaluation process. The technique and tool of evaluation also must be selected based on the characteristics of instructional objectives. So, evaluation is done to measure or to see whether the instructional objectives have been achieved or to what extent the instructional objectives have been done.

b. Evaluation is a Continuous Process

The continuous process of evaluation means that evaluation is essential for getting reliable evidence about the students ' growth and development of their teaching-learning process. As a result of this, the objective of evaluation needs to be integrated with teaching so that it can assist teachers in correctly diagnosing the challenges that their students are having and so that it can offer opportunities for students to receive remedial instruction. The students' improvement in learning will not be done without the process of continuous evaluation. In short, evaluation should not be considered as an end-of-the-course or learning activity.

c. Evaluation is a Comprehensive Process

Every student has different dimensions of growth, such as intellectual, emotional, and physical aspects. These aspects will be represented in the form of different objectives. A comprehensive evaluation must provide all the aspects of the process of evaluation.

d. Evaluation is a Cooperative Process

This characteristic is related to a comprehensive process. Comprehensive evaluations have to collect evidence on all aspects of the student's development. In this case, the teacher cannot collect all the evidence of all aspects required for the student's growth or development. It deals with the student's social relationships, emotional behavior, initiative, scientific: attitudes, social attitudes, and likes. Accordingly, a good evaluation program must have the cooperation of different individuals and agencies in collecting the data.

e. Evaluation is a Dynamic Process

Evaluation is conducted by the teachers based on instructional objectives. It also helps them to know whether the instructional objectives are compatible with a certain group of students or not. The evaluation is conducted on the basis of the learning experience

that has been established in the classroom; in addition, it gives proof of the efficiency of their learning experience. Regular feedback in evaluation maintains the validity of the whole process of teaching and learning. So, a good evaluation program will bring a dynamic process and it will lead to continuous improvement of evaluation in the whole process of education.

f. Evaluation is a Decision-Making Process

The appraisal process is needed in every step of teaching and learning. In the first step (before the instruction), it is necessary to decide the appropriate instructional objectives, learning materials, teaching-learning strategies, and learning material. The second step (during instruction) continuous evaluation is needed to measure the student's intellectual, emotional, and physical aspects to make a proper decision by considering various remediation programs. Both diagnostic and formative evaluation must go hand in hand to achieve the objectives.   The last at the end of the session is giving a summative evaluation. This is done so that the students can be categorized, graded, promoted, and certified. As a result, the teachers will be better able to judge and decide on the educational progress of the students with the assistance of summative evaluation.

B.4 The Principle of Evaluation

The process of evaluation has to be carried out with effective techniques. To get an effective one, the teachers have to do the following steps;

a. It must be clearly stated what is to be evaluated

First, a teacher has to establish the purpose of evaluation. Second, he/ she must determine the instructional objectives/learning outcome, and third, define them clearly in terms of the student's observable behavior.

b. A variety of evaluation techniques should be used for a comprehensive evaluation:

To get a comprehensive evaluation, teachers have to evaluate all the aspects of achievement. Some techniques can be used e.g. objective tests, essay tests, observational techniques, etc. Comprehensive evaluation represents the complete picture of the student's achievement and the student's development can be assessed extensively.

c. An evaluator should know the limitations of different evaluation techniques:

Teachers have to know well about the characteristics of every technique and instrument of evaluation. It involves the strengths and the weaknesses of each of them. There may be measurement errors. Sampling error is a common factor in educational and psychological measurements. Measurement errors can also be found due to

students guessing on objective tests. Error is also found due to incorrect interpretation of test scores.

d. The technique of evaluation must be appropriate for the characteristics or performance to be measured:

Every method of evaluation is suitable for certain applications, but there are situations in which it is unsuitable for others. Therefore, in order for teachers to properly select an evaluation method, they need to have a solid understanding of both the benefits and drawbacks of the methods that are available to them.

e. Evaluation is a means to an end but not an end in itself:

The result of the evaluation will be used to make decisions about the students. It is not just collecting the data about the students. Teachers have to consider the data of all aspects of evaluation and take them in making judgments.

B.5 Evaluation in Teaching and Learning Process

Teaching and learning process without evaluation is not possible. Evaluation is a part of the teaching and learning process. Both teaching and learning are done based on the instructional objective or learning outcomes that present some directions to reach them. Instructional objectives or learning outcomes are set up based on some desirable students' behaviour to be developed along the process of teaching. The relationship between the instructional objectives, the process of teaching/learning experience, and evaluation can be described in the following diagram;
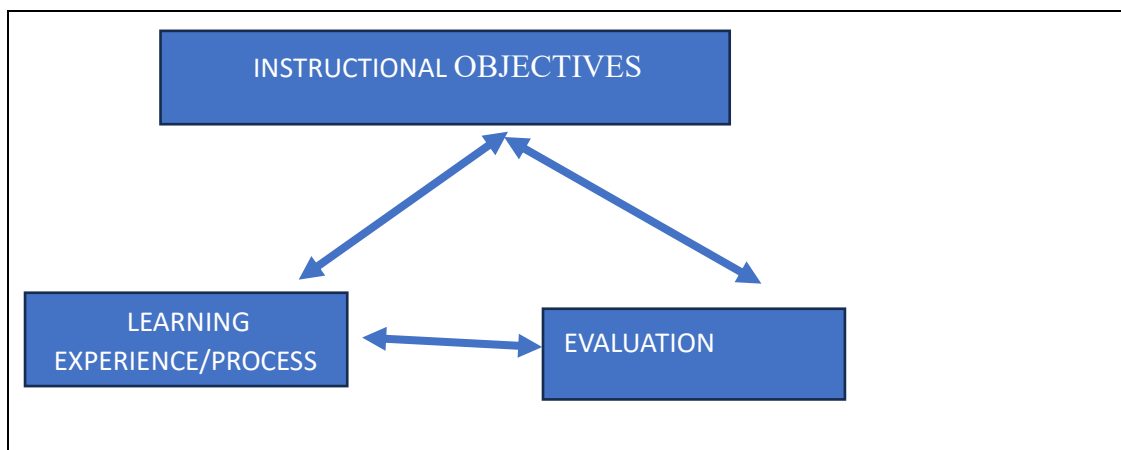

Figure 1.1 Diagram of relationship between instructional objectives, process of learning experience, and evaluation

C. Assessment

C.1 What is assessment?

In the teaching process, an assessment plays an important role. The results of this assessment are very useful for the teacher to find out the students' progress, achievement, and even career prospects in the future. Assessment can be conducted informally during the instruction (teaching and learning process) or at the end of instruction, usually, it is called a formal assessment. Assessment is the procedure or process of gathering and synthesizing information from tasks (such as exams on performance or learning) in order to create an opinion about a person or to make a comparison against a predetermined standard (Athanasou and Lamprianou: 2002). According to Susanti, et al (2021), Assessment is a collection and processing process of information to determine learning needs, development, and achievement of student learning outcomes.

C.2 The Function of Assessment

Types of assessment according to their function include assessment as a learning process (assessment as Learning), assessment for the learning process (assessment for Learning), and assessment at the end of the learning process.

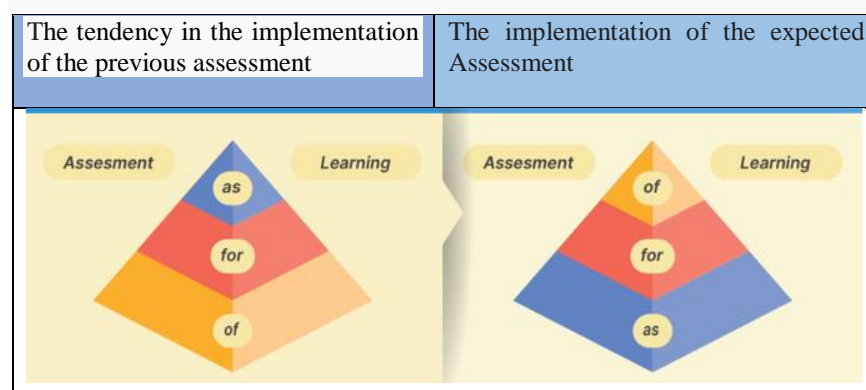| The tendency in the implementation of the previous assessment | The implementation of the expected Assessment |

Figure 1.2. The Change of The Implementation of Assessment that gives the emphasis on Formative Assessment

The purpose of conducting an assessment in education is to determine the student's progress in learning and to make curriculum decisions or revisions. Assessment as a learning process has a function as a reflection of the learning process and as a formative assessment. Assessment for learning has the purpose of revising the learning process and as a formative assessment. Assessment of learning means assessment done at the end of the process of learning as evaluation and has functioned as a summative assessment. The difference between assessment and learning is assessment as learning involves students more actively in

the assessment activity. Students are provided with the opportunity to gain the experience necessary to understand how to be an objective evaluator of both themselves and their peers. Examples of evaluation as learning include both self-assessment and assessment conducted by peers on peers. In assessment as learning, students should be involved in formulating procedures, criteria, and rubrics/guidelines assessment so they know exactly what must be done to obtain maximum learning outcomes (Susanti, et al: 2021). Furthermore, Susanti et al (2021) explain that one example of implementing formative assessment is self-assessment and assessment between friends (peer assessment). This assessment works as material for self-reflection, which can later be used by Educators as data/information to confirm student learning outcomes.

Table 1: The Example of Self-Assessment.

Give a mark on self-assessment of competency in writing descriptive text. How is your understanding?	
	I easily wrote it
√	I can write it
	I need help to write it

Table 2: The Example of Peer-Assessment.

Task: Writing Descriptive Text Appraiser's name: …… The name of a friend being rated: …. Give a sign on the appropriate one!	
√	The message conveyed is clear.
	The grammar used doesn't match with the descriptive text.

√	The generic structure of the text doesn't meet the requirement of descriptive text (identification and description)

In order to the implementation of the assessment is in line with the objectives to be achieved, educators are expected to pay attention

characteristics and functions of formative and summative assessments. Susanti et al (2021) explain in detail about formative and summative as classified in several tables below;

Table 3 : Formative (as and for learning)

Types of Assessment	Formative (as and for learning)
Function	a. Diagnosing abilities beginning and learning needs learners. b. Feedback for educators to improve the process of learning to become more meaningful. c. Feedback for the students to improve learning strategies. d. Diagnosing the capacity of the students to absorb the material along the process of learning in class. e. Driving the change of class atmosphere. It can improve the students' motivation by providing supportive, positive, and meaningful learning programs.
Technique	Various techniques of assessment, such as; practice, product, project, portfolio, and written test/ oral.
Result or Documentation	a. The product of learning b. The students' reflection journal c. The plan of the next action is designed based on the result of the assessment. d. The record or the note based on the result of observation e. Anecdotal notes f. The score in the form of number.

Table 4: Summative (for and of learning)

Types of Assessment	Summative at the end of the material (for and of learning)
Function	a. Measuring tools to find othe ut achievement of learning outcomes students in one scope of material.

	b. Reflection on learning in one material scope. c. Feedback for design/repair of the next learning process. d. Seeing or finding the power/strengthen, and weaknesses of learning on students during one-scope learning material.
Techniques	Various techniques of assessment, such as; practice, product, project, portfolio, and written test/ oral.
Result or Documentation	1. The product of learning 2. The score in the form of number

<p align="center">Table 5: Summative Semester (of Learning)</p>

Types of Assessment	Summative Semester (of learning) *As a choice
Function	a. Measuring tools to find out the student's achievement of learning outcomes in a certain period. b. Getting the value on the achievement of learning outcomes to be compared with the criteria of achievement that have been set. c. Feedback to design/repair the next learning process (semester/school year) the same as the function of formative assessment d. See/ find the power and the weaknesses of the students in the learning process (same as the function in the diagnostic assessment)
Techniques	Practices, products, : projects, portfolios, written.
Result or Documentation	1. The product of learning 2. The score in the form of number

According to Henriani, S, and Suzzane (2013), assessments are given to find the answers to some questions, such as:

a) How realistic are my teaching plans for these students?

b) Are my students ready for the next unit?

c) What learning difficulties are students facing?

d) Which students are underachieving?

e) How effective was my teaching? Which learners are advanced?

f) Which learners are gifted or talented?

g) Which learners require special assistance?

The assessment is one of the aspects of education. The result of it will help the teachers to make judgments about students' levels, to choose the most appropriate teaching method, and to determine the teaching of a topic. Based on the description above, it can be concluded that assessment is the method of process in, collecting, documenting, and using empirical data related to the students' knowledge, skills, attitudes, and beliefs. These data will be used to increase and improve the process of student learning.

An education test is used by teachers to examine the student's knowledge of something, to determine what the student knows or has learned. The test measures the students' level of skill or knowledge that has been reached. A test is a kind of "product" that is used to measure a particular student's behavior or set of objectives determined by the teacher in the teaching and learning process. On the contrary, the assessment is supposed as a procedure instead of a product.

Assessment is implemented during and after the instruction has taken place. After receiving the result of the assessment, we can interpret the result and if it is needed, we can change the teachers' instructions. Tests are done after the instruction has taken place to complete the instruction and get the results of it. The results of the tests don't have to be interpreted, unlike the result of the assessment. ssessment is a continuing process that encompasses a significantly larger subject area or body of content. On the other hand, testing is just one component of the assessment process. They are predetermined procedures that are carried out at specific periods throughout a program of study. To evaluate students, teachers employ a variety of methods and activities, including tests, which can be categorized as helpful assessment devices. It can be concluded that a test is a type of method used to measure a person's ability, knowledge, or performance in a given domain.

Assessment can be divided into:

a. Informal and Formal Assessment

Informal assessment is a type of assessment that can be given in a number of forms. It can be started with incidental time, by giving unplanned comments and responses, along with coaching and other types of feedback given to the student.

Example: "Nice job!"

"Good work!"

Formal assessments are given in the form of exercises or procedures. It's specifically designed to measure the students' skills and knowledge. The characteristics of the formal assessment are systematic, planned sampling techniques, and it is constructed to give teacher and student an appraisal of student achievement. If there is a question, such as

"Is formal assessment the same as a test? We can say that all tests are formal assessments, but not all formal assessment is testing."

b. Formative and Summative Assessment

Most of our classroom assessment is classified into formative assessment. The purpose is to evaluate the students in the process of "constructing" their competencies and skills based on the teacher's instructions to help them to continue that growth process. A summative assessment is carried out after the conclusion of a unit of instruction or a course in order to evaluate or summarize what a student has achieved throughout the learning process. Generally speaking, summative assessments take place at the end of a course. Examples of summative evaluation include a course's final examination as well as general competence examinations.

The principle in conducting an assessment involves;

1. Assessment is an integral component of the learning process, serving to both facilitate and direct learning while also giving educators, students, and parents with comprehensive information in the form of feedback that can assist them in formulating a plan for additional learning activities.

2. The assessment is designed and carried out by the assessment function, with the freedom to determine the technique and time for assessing to effectively achieve learning objectives.

3. Assessments are designed to be fair, proportional, valid, and can be trusted (reliable) to explain learning progress and determine decisions about the next step.

4. Reports on the development of learning and the accomplishments of participants Education is uncomplicated and imparts a wealth of knowledge, delivering important details regarding the personalities and skill sets developed as well as the next steps to take.

5. The results of the assessment are utilized as resources for reflection to improve the overall quality of learning by the students, educators, and other members of the educational staff as well as by the parents.

Chapter 2

Taxonomy Bloom

A. Who is Bloom?

Benjamin S. Bloom

Benjamin Samuel Bloom is known as the founder of Taxonomy Bloom. Bloom was born on 21 February 1913 in Lansford, Pennsylvania. His father's profession was a picture frame and his mother was a housewife. He has three older brothers and one younger sister. Bloom has high potential capabilities in the academic field. Besides, he also very potential in athletics such as swimming and handball. He earned a bachelor's and master's degree from Pennsylvania State University in 1935. Then, he worked as a research worker with the Pennsylvania State Relief Organization for a year. After that, he moved to Washington and had the same profession in the American Youth Council. In 1939, Bloom then applied for his doctorate program at the University of Chicago. Between the years 1940 and 1959, he was a member of a Board of Examinations at the University of Chicago. By the year 1960, Bloom had resigned from his position with the Board of Examinations and began working at Stanford University in California for the Advanced Study in Behavioral Sciences. Bloom was very loyal to his small family (his wife Sophie, two sons, and his nieces and nephew).

Bloom was outstanding as an American educational psychologist. He was pointed as headed a group of cognitive psychologists at the University of Chicago. Bloom gave significant contributions to both fields, those are the classification of educational objectives and the theory of mastery learning. Based on the result of his research, Bloom devised a "taxonomy of educational objectives," which was a classification of the various learning objectives and skills that educators set for their students. Bloom classified educational goals as falling into one of three categories, or "domains": affective, psychomotor, or cognitive. In the educational

environment, this classification of educational objectives is commonly used to determine the different levels of learners' mental competencies and to dig up them from lower to higher-order thinking levels. His classification of educational objectives in the form of *Taxonomy of Educational Objectives was written in the form of a special book known as Handbook 1: Cognitive Domain which* was published in 1956. This book addresses the cognitive domain versus the psychomotor and affective domains of knowledge. The following picture describes the old version of Bloom's taxonomy.
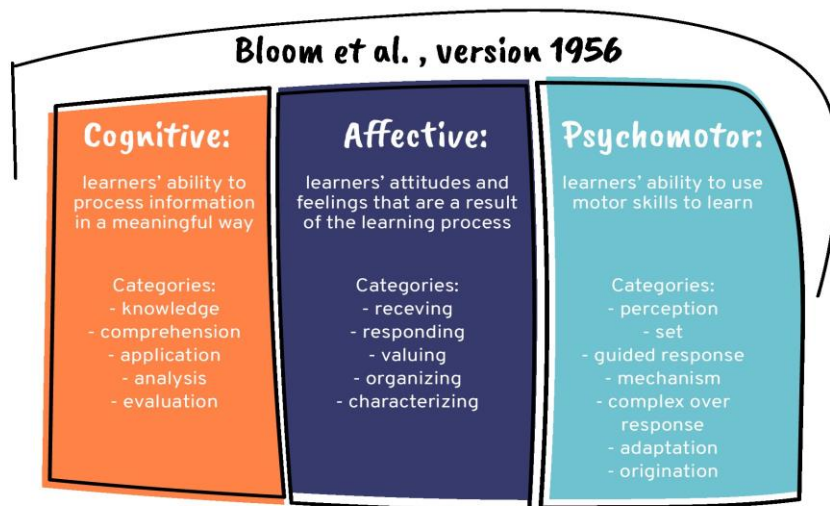

Figure 2.1: The old version of Bloom Taxonomy
https://gosiapytel83.net/objectives-taxonomies-101-part-1-of-4-blooms-taxonomy-revision/

B. Cognitive Domain

The cognitive domain was described by Benjamin Bloom as one of the best-known educational domains. It is related to the process of the development of our mental (thinking skills and the process of acquiring our knowledge. This domain is focused on intellectual skills such as critical thinking, problem-solving, and creating a knowledge base. The cognitive domain covers six categories which involve knowledge, comprehension, application, analysis, synthesis, and evaluation.