

ADDIS ABABA CITY EDUCATION BUREAU DEPARTMENT OF AFAAN OROMO

Table of specification

**Prepared for: Sub-Cities & Woreda Supervisors &
Educational Experts**

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Introduction

		በጽኑ ክፍል ክልላዊ ፈተና 50% እና በላይ ውጤት ያስመዘገቡ መደበኛ ተማሪዎች ብዛት በመቶ (2002 -- 2011)								
ክልል	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
1 ትግራይ	62	62.4	71.7	75.3	70.7	76.7	92	83.7	55.2	
2 አፋር	59.1	32.5	25.9	33.6	27	61.5	69.9	35.3	43.4	
3 አማራ	32.3	28.8	37.5	44	44.1	75.3	82	74.9	70.8	73.9
4 ኦሮሚያ	29.8	43.8	62	62.2	62.3	83	84.1	87.2	82.6	
5 ሶማሊ	22.9	29.8	37.6	52.3	27	41	49	81	80	
6 ቤኒሻንጉል	28.1	24.2	19.5	13	15.8	26.8	24.4	31.5	23	
7 ደቡብ	13.3	15.8	16.4	18.6	42.7	61.6	78.7	42	36.2	
8 ጋምቤላ	12.5	11.2	9.1	21.8	17.1	23.5	48.5	23.6	22.3	
9 ሐረሪ	11	19.1	19.8	26.7	29.9	26.5	36.2	37	38.8	24..7
10 አዲስ አበባ	21.7	27.7	27.9	28.3	29.9	46	50.3	39.3	36	
11 ድሬዳዋ	20.7	22.2	24.1	21.6	29	43.4	37	31.8	32.5	34.33
12 ሀገር አቀፍ አማካይ	28.5	28.9	31.9	36	37.6	48.5	79.5	51.6	51.37	

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INTRODUCTION

Test blueprint (Table of Specification)

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- Test blueprint is a two way chart that relates the learning **outcomes** to the course **content** or,
- It's a two dimensional array (sometimes called a matrix of which one dimension is **dedicated to content** and the other dimension is **dedicated to objectives**.
- Very often **Table of specification** and **test blueprint** are entitled interchangeably.

What is Table of Specification (ToS)?

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- ToS (Test blueprint) is a document that helps **plan** out our examination,
- Its an essential tool that make our test creation process **methodological** and **organized**,
- It's a plan that enhances the likelihood of crafting **valid** and **reliable** test,
- ToS (Test blueprint) contain a **representative** sample of student knowledge that enables teacher (expert) to prepare items of a test.

- Constructing **fair** tests that give teachers **accurate information** about students learning is an important skill for teachers.
- A table of specifications allows us to ensure that our test focuses on the **most important areas** and **weights** different areas based on their importance/ **time spent teaching**.
- To identify the achievement **domains** being measured.

Cont.

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- To ensure that a **fair** and **representative sample** of questions appear on the test.
- To allow the exam developer to construct a test which focuses on the **key areas** and **weights** those different areas based on their importance.
- To provides the exam developer with evidence that a test has **content validity**, that it covers what should be covered.

1. List down the topics covered for **inclusion** in the test.
2. Determine the **objectives** to be assessed by the test.
3. Specify the number of **periods spent** for teaching a particular topic.
4. Determine **percentage** allocation of the test items for each of the topics covered.

% for a topic = $\frac{\text{Total number of period}}{\text{The total number of periods spent teaching the topic}}$

The total number of periods spent teaching the topic

5. Determine the number of the **items** for each topic

➤ This can be done by multiplying the percentage allocation for each topic by the total number of items to be constructed.

6. Distribute the numbers to the objectives. (Ref. [Sample](#) cur.spec.docx)

- ❑ Table of **curriculum** specification,
- ❑ Table of **content** specification,
- ❑ Table of **Item** specification

1- Curriculum Specification

- Curriculum specification is an essential and fixed document extracted from **syllabus** at a specified grade levels,
- Once it's carefully prepared, it may well serve for many years

The levels of cognitive domains

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- ❖ Cognitive domains are the guiding posts in constructing test items.
- 1. **KNOWLEDGE (Remembering)** it's the ability to remember previously learned information
- 2. **COMPREHENSION (Understanding)** it's the ability to grasp the meaning of what one has learned
- 3. **APPLICATION (Applying)** it's the ability to use a learned skill in a new and concrete situation

Cont.

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4- ANALYSIS (Analyzing) it's the ability to breakdown a given whole into its component parts

❖ Its characteristics include:

- ✓ Analysis of elements
- ✓ Analysis of relationships
- ✓ Analysis of organization

Cont.

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5. **SYNTHESIS (Creating)** – it's the ability to **put parts together** to form a whole
- ❖ Its characteristics include:
 - ✓ Production of a unique communication
 - ✓ Production of a plan, or proposed set of operations
 - ✓ Derivation of a set of abstract relations

Cont.

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6- EVALUATION (Evaluating) it's the ability to judge the appropriateness of a given skill or learned information for a given purpose or situation. Its characteristics include:

- ✓ Judgments in terms of **internal evidence**
- ✓ Judgments in terms of **external criteria**

How to construct table of curriculum specification

1. Convert action verbs of each competency (ability) from the **syllabus** into **Bloom's taxonomy**
 - ✓ Some action verbs need serious attention and expert judgment in the process of conversion.
2. Prepare a table and copy all the converted verbs of behavioral dimension alongside the main content

Bloom's Taxonomy Action verbs

blooms_taxonomy_action_verbs.pdf - Adobe Acrobat Reader DC

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Definitions	I. Remembering	II. Understanding	III. Applying	IV. Analyzing	V. Evaluating	VI. Creating
Bloom's Definition	Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers.	Demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating main ideas.	Solve problems to new situations by applying acquired knowledge, facts, techniques and rules in a different way.	Examine and break information into parts by identifying motives or causes. Make inferences and find evidence to support generalizations.	Present and defend opinions by making judgments about information, validity of ideas, or quality of work based on a set of criteria.	Compile information together in a different way by combining elements in a new pattern or proposing alternative solutions.
Verbs	- Choose - Define - Find - How - Label - List - Match - Name - Omit - Recall - Relate - Select - Show - Spell - Tell - What	- Classify - Compare - Contrast - Demonstrate - Explain - Extend - Illustrate - Infer - Interpret - Outline - Relate - Rephrase - Show - Summarize - Translate	- Apply - Build - Choose - Construct - Develop - Experiment with - Identify - Interview - Make use of - Model - Organize - Plan - Select - Solve - Utilize	- Analyze - Assume - Categorize - Classify - Compare - Conclusion - Contrast - Discover - Dissect - Distinguish - Divide - Examine - Function - Inference - Inspect - List	- Agree - Appraise - Assess - Award - Choose - Compare - Conclude - Criteria - Criticize - Decide - Deduct - Defend - Determine - Disprove - Estimate - Evaluate	- Adapt - Build - Change - Choose - Combine - Compile - Compose - Construct - Create - Delete - Design - Develop - Discuss - Elaborate - Estimate - Formulate

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Components of Table of Specification

1. The table of **Curriculum Specification** include:

- ✓ Grade level,
- ✓ Chapter (Unit),
- ✓ Topic (Content),
- ✓ Periods allotted, and
- ✓ Bloom's taxonomy

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- Curriculum specification should be made with **great care** and **attention**
- It's a baseline to prepare a **test blueprint** (ToS)

2- Content Specification

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- Content specification is [an alternative document] prepared with the **curriculum specification** and **student's text together**
- It provides main and sub content areas found in the student's text which is part of objectives in the curl.spec.
- It's particularly important for **quick** content information access in the student's text

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- ❖ Content specification provides **facts** and **figures** about the specific objectives and gross total items possible
- It includes
 - ✓ Grade level,
 - ✓ Topics (Contents) and
 - ✓ Periods

3- Item Specification

- Item Specification is prepared with help of **curriculum materials**
- Curriculum specification and student's text are its main source to decide the **weight** and **number of items** desired to be written
- Item specification is the basic document in the test blueprint

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- Item specification includes:
 - ✓ Grade level,
 - ✓ Chapter (Unit),
 - ✓ Content (Topic) of which items have to be written,
 - ✓ Number of periods spent,
 - ✓ Behavioral dimension in which items to be written should have,

Steps to create Table of item of Specification

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- Determine coverage of the exam
- Select the most important topics
- Determine learning objectives for each topic area
- Weight (LoTs) and (HoTs)
- Balance the objectives with bloom's taxonomy
- Determine duration of each content area (time spent for a particular topic)

- Align significant **topics** , **learning objectives** and **time spent** for each content and determine the area where item is getting ready to write.
- The table of item specification has to be **inclusive** and consider **visually impaired** or/and blind candidates.

Other information to be included in the test blueprint



- Introductory part about the document and its usage
- List of **action verbs** under the **bloom's taxonomy**
- Statistical information that shows the **number** and **weight of items** based on **time spent** and **bloom's taxonomy** respectively
- Each table of specification should bear **the name of the organization**, type of **subject** and **academic year**

What literatures say about ToS

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- ❖ 13% of students who got low grades in exams are caused by faulty test questions. WORLDWATCH, The Philadelphia Trumpet (August 2005)
- Possible reasons for faulty test questions:
 - ✓ No TOS or TOS was made after making the test.
 - ✓ Questions are **copied** verbatim from the book or other resources.
 - ✓ Not consulting the **course outline**.
 - ✓ Much consideration is given to reduce printing cost.

Things to notice

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- Test specifications should not be made **too detailed** nor **too prescriptive**
- Narrowly defined test specifications can inhibit the **creativity of item writers** and lead to trivial items
- Brief specifications are best, with good training in how to use them for item development and assembly

- Use a **cognitive taxonomy** that is most appropriate to your discipline.
- Weigh the appropriateness of the distribution of items against the students' level, the importance of the test, the amount of time available.

POINTS TO PONDER

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- A good *lesson* makes a good *question*
- A good *question* makes a good *content*
- A good *content* makes a good *test*
- A good *test makes* a good *grade*
- A good *grade* makes a good *student*
- A good *student* makes a good *COMMUNITY*

Rationale of Constructing ToS

- Good ToS produce **good items** that measure what students know.
- The quality of ToS determines **fairness** of the test.
- The quality of items determines the quality of test (i.e., **reliability & validity**)

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THANK YOU