

Универзитет „Св. Кирил и Методиј“
Педагошки факултет „Св. Климент Охридски“ – Скопје
Република Македонија

Ss. Cyril and Methodius University
Faculty of Pedagogy “St. Kliment Ohridski” – Skopje
Republic of Macedonia

**VI меѓународен балкански конгрес за образование и наука:
СОВРЕМЕНОТО ОПШТЕСТВО И ОБРАЗОВАНИЕТО**

(Охрид, 29. IX - 1. X 2011г.)
Зборник на трудови

**VI International Balkan Congress for Education and Science:
THE MODERN SOCIETY AND EDUCATION**

(Ohrid, 29. IX - 1. X 2011.)
Book of proceedings

Skopje, 2011

За издавачот:

Проф. д-р Владо Тимовски, Декан на Педагошкиот Факултет
„Св. Климент Охридски“ – Скопје, Република Македонија

About the publisher:

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“St. Kliment Ohridski” – Skopje, Republic of Macedonia

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CIP - Каталогизација во публикација
Национална и универзитетска библиотека "Св. Климент Охридски", Скопје

37(062)

БАЛКАНСКИ конгрес за образование и наука (6 ; 2011)

Современото општество и образованието / VI Балкански конгрес за образование и наука = The modern society and education / the VI international balkan congress for education and science. - Skopje: Pedagoški fakultet "Sv. Kliment Ohridski", 2011. - 1466 стр. : илустр. ; 23 см

Фусноти кон трудовите. - Библиографија кон трудовите

ISBN 978-9989-823-33-6

1. Насп. ств. насл. - I. International balkan congress for education and science (6 ; 2011) види Балкански конгрес за образование и наука (6 ; 2011)

а) Образование - Собири

COBISS.MK-ID 89314314

BLOOM'S TAXONOMY (CLASSIFICATION OF COGNITIVE AREAS – REMEMBERING, UNDERSTANDING, APPLYING)

Abstract

Traditional teaching is based upon the products of thought, but it neglects the processes which lead to these products. Efficacy in learning depends on the student's consciousness about the process of learning itself and on the usage of self-regulating learning mechanisms. The taxonomy conceived by Benjamin Bloom and his associates enables teachers to distinguish the questions that instigate lower and higher levels of students' thinking, i.e. to make the distinction between questions requiring application of ideas, data analysis, and synthesis of ideas in order to come to the solution and evaluation of arguments.

Key words: *education, bloom s taxonomy, teachers.*

The American Psychological Society adopted a convention about the division of goals in the educational process that was proposed by the American psychologist and pedagogue Benjamin Bloom as far as 1956. Since then Bloom's taxonomy is included in almost every modern educational system in the course of determining the educational goals which are important in the process of learning. Having in mind the facts about individual differences, abilities and characteristics of a personality, Benjamin Bloom developed the taxonomy of the educational goals and tasks in the cognitive area.

This taxonomy can also serve as a guide for classifying the activities in teaching in the form of instructions, starting from the easier and moving towards the more difficult. Lower, easier levels require less training for thinking, and higher, more difficult levels require a higher form of thinking.

The application of the Bloom's taxonomy principles leads to gaining permanent and qualitative knowledge, to the individualization of the process of teaching, and it instigates the optimal development of abilities and characteristics of a personality of all types of pupils – average, under average and talented.

According to Bloom, learning forms can be divided into three categories: **cognitive (knowledge), affective (attitudes), and psycho-motor (skills).**

In the frames of the cognitive theory Bloom states **6 hierarchical levels of learning**, starting from the simplest, lowest level, and moving to the most complex cognitive level.

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Change of terms

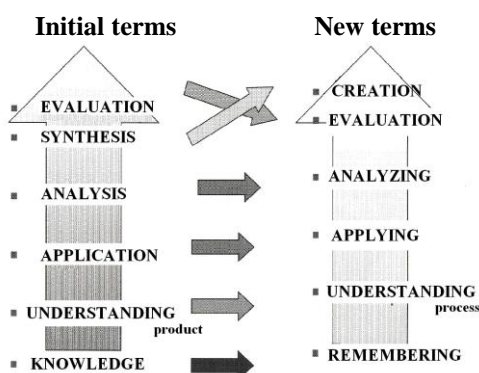
The names of the six main categories were changed from noun into verb forms.

As the taxonomy reflects different forms of **thinking** and thinking is an active process, the usage of verb forms is more accurate.

The subcategories of the six main categories were also replaced with verbs. Some categories were reorganized.

The category of knowledge was renamed. Knowledge is a product of thinking and it is inappropriate to describe a category of thinking so it was replaced with the word remembering.

Understanding (product) becomes understanding (process), and synthesis was renamed into creating with the aim to better reflect the nature of thinking described in each category.

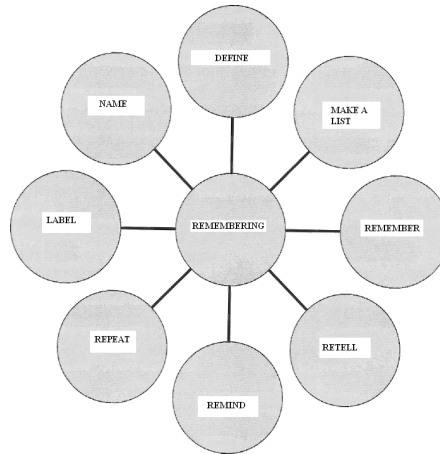


(Based on Paul, 2000, *Učenje kako da se razmišljava, razmišljanje kako da se uči*, p.8)

Remembering (knowing facts)

This category denotes remembering and reproduction of the studied material. Learning of facts is the lowest educational goal. Knowledge is defined as recollecting of the previously learned contents. It is related to the basic knowledge that a pupil has to acquire in order to understand the meaning of the subject he/she is studying. This recalling can be related to a wide span of contents: from learning terms, through recalling specific facts to recalling complex theories. At this level it is needed that the pupils recall certain information, which does not necessarily mean that they have understood them. For example, the pupil should memorize, define, describe, label, number, recognize.

Remembering



Roles for remembering in the classroom

Teacher's roles

Directs
Tells
Shows
Examines
Asks
Evaluates

Pupil's roles

Answers
Receives
Remembers
Recognizes
Memorizes
Defines
Describes
Retells
Is a passive receiver

Remembering: Possible activities and products

- Make a map showing the main events of a story.
- Make a time axis of your typical day.
- Make a map of concepts of the topic.
- Write a list of key words that you know about . . .
- Which are the characters of the story?
- Make a graph showing . . .
- Write a poem (acrostic) about . . .
- Recite a poem you have learnt.

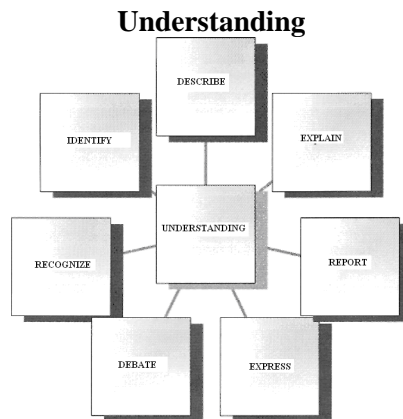
Questions for remembering

- *What happened after . . . ?*
- *How much . . . ?*
- *What is . . . ?*

- *Who . . . ?*
- *Can you name . . . ?*
- *Find the definition of . . .*
- *Describe what happened after . . .*
- *Who talked to . . . ?*
- *What is false or true . . . ?*

Understanding

Understanding is defined as an ability to think about the meaning of the learned facts. This cognitive category of knowledge can be shown through interpretation of the learned facts, through explanations or prediction of the influence or consequences. This educational goal is higher than the previous simple recollection of information and it represents the lowest level of understanding. The transformation (translation) of material from one form of expression into another, its “translation” from one language into another (from word form – into mathematics form), can be the indicator of the ability to understand the meaning of the studied material. As indicators of understanding we can also point out the pupil’s interpretation of the material (explanation, short presentation) or a supposition about the further course of the phenomena, events (prediction of consequences, results) Such teaching results overcome simple remembering of the material. For example, at this level the pupil should know how to interpret pictures, maps, tables and graphs, he should know how to translate verbal tasks into formulas, according to the facts he/she should be able to predict the consequences, to show an example, to interpret, to paraphrase.



Roles for understanding in the classroom

Teacher’s roles
 Shows
 Listens
 Asks
 Compares
 Opposes
 Examines

Pupil’s roles
 Explains
 Describes
 Completes
 Re-formulates
 Translates
 Shows
 Interprets

Understanding: Possible activities and products

- Write in your own words . . .
- Cut out or draw pictures to illustrate a particular event in a story.
- Describe this to your classmates.
- Explain what the main idea could be.
- Make a cartoon showing the sequence of events in a story.
- Write and act out a play based on the story.
- Write a short review in order to explain the story to someone else.
- Explain why the character solved the problem in exactly that manner.
- Write a short report about the event.
- Prepare a diagram illustrating the sequence of events.
- Make a colour book.
- Paraphrase this chapter of the book.
- Retell it in your own words.
- Complete the main things in the book.

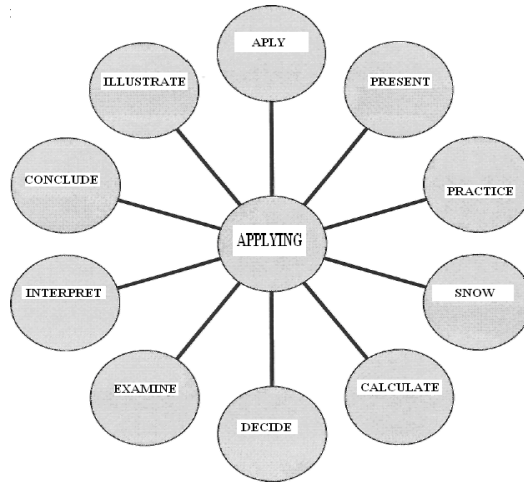
Questions for understanding

- Can you explain why . . . ?
- Can you write in your own words . . . ?
- How would you explain . . . ?
- Can you write a short review of . . . ?
- What could happen next . . . ?
- Who do you think . . . ?
- What is the main idea . . . ?
- Can you explain . . . ?
- Can you illustrate . . . ?
- Does everyone behave as . . . ?

Applying

This category denotes the skill to use the studied material in concrete conditions and new situations. Applying is related to the ability to use the learned rules, laws, methods and theories in new, concrete situations. Appropriate results in teaching require a higher level of material mastery than understanding. For example, at this cognitive level the pupil should know how to solve some mathematical problem, to construct a graph or a scheme, to demonstrate precise usage of some method or procedure.

Applying



Roles for applying in the classroom

Teacher's roles

Shows
Facilitates

Observes
Evaluates
Organizes
Asks

Pupil's roles

Solves problems
Shows using his/her
knowledge
Calculates
Makes a collection
Fills in
Illustrates
Constructs
Is an active receiver

Applying: Possible activities and products

- Construct a model showing how something looks or functions.
- Rehearse a play and act it out in front of the class.
- Make a practice book for the area you study.
- Make invitations for some character's birthday party.
- Make a topographic map.
- Make a collection of photographs about a certain topic and exhibit them.
- Make a puzzle or game related to the topic.
- Write an explanation of the topic for other people.
- Dress up a doll in a folk costume. Make a clay model of . . .
- Paint a mural using the same materials.
- Continue the story . . .

Questions for applying

- Do you another example of . . . ?
- Can you group things according to their characteristics as . . . ?
- Which factors would you change if . . . ?
- Which questions would you ask about . . . ?
- Can you develop a set of instructions about . . . based on given information?

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