



MINISTRY OF EDUCATION AND SCIENCE
OF THE REPUBLIC OF TAJIKISTAN

**Syllabus for Primary Education Teacher In-service Training
on Competency Based Education**

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Approved by the Decree of the Collegiums of the Ministry of Education and Science of the Republic of Tajikistan as for

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This program is aimed at defining teacher training contents and approaches to develop their knowledge and skills to implement new primary education subject standards and transition to competency based education. The program introduce teachers with theories, principles, methodology of teaching and upbringing and assessment in competency based educations and helps them to understand and apply new competency based primary education subject standards.

The program reflects topics and brief contents of each session of the in-service teacher training course and defines the set of teacher's competencies that they can develop by mastering the contents that are explicitly described in training modules and delivered in more interactive result based approaches.

Transition to competency based education requires teachers to master modern knowledge, skills and abilities; therefore this program discusses the researched aspects of the pedagogy, psychology and teaching methodology and provides teachers with the required knowledge.

Preface

In the modern world requires from a person to be socially and emotionally stable, professional to obtain information (data) from different sources, analyze, proceed and evaluate this information, understand the complex issues of the environment, predict different learning and life changes and be able to overcome them, recognize ones responsibility before the family, society and the country.

Nowadays, in accordance with the labor market and rapidly developing social and economic relations, introduction and access to more advanced means of information (internet, TV etc.) knowledge would not be enough to success, there is a need to apply these knowledge and skills and help children in socialization and encourage them to achieve intended learning outcomes.

The Government of the Republic of Tajikistan and the Ministry of Education and Science constantly try to reform the education system to make it to meet modern requirements and to do so implement specific reform initiatives. Thus the Government of the Republic of Tajikistan adopted “National Strategy for Education Development for 2012-2020” in 2012. According to this document by 2020 standards, syllabus and textbooks should be revised based to reflect competency based education. In order to implement this initiative the Ministry of Education and Science of the Republic of Tajikistan initiated development of standards for several subjects in 2015. Now the Primary Education Subject Standards were developed and introduced in 2016-2017 school year.

This program is designed for 72 training hours. The contents of the program are described in four training modules: 1) Module 1. Competency Based Education; 2) Module 2. Lesson Planning Based on New Standards, Textbooks and Supplements; 3) Module 3. Teaching Methodology in Competency Based Education; 4) Module 4. Assessment in Competency Based Education.

Module 1. Competency Based Education. The necessary of transition to competency based education, competency based education requirements, well-known learning theories, definition for competency, and requirements of primary education standards are presented in this training module.

Module 2. Lesson planning based on standards, textbooks and supplements. This module helps teachers to plan the teaching and learning process in accordance with the competency based education. In addition it supports teachers to be prepared to implement standards, teacher’s guides and supplements to the textbooks.

Module 3. Teaching methodology in Competency based Education. This module is composed from two units; generic teaching methodology and primary subject specific methodology. During mastering the contents of this module teachers will learn different new methods, discuss, evaluate and practice them.

Module 4. Assessment in Competency based Education. Two aspects of assessment in discussed in this module: formative assessment and summative assessment. These two assessment concepts play specific role in competency based education. Formative assessment tools are used during learning process and help teachers and students to define the level of development of competencies, challenges and ways to overcome them.

Summative assessment in its turn is applied to define students' achievement in specific periods of teaching process.

Program Objectives

Main objective of the program is to improve primary teacher's knowledge, skills and abilities on competency based education, students' competency development in different subjects of primary grades, select appropriate methods of teaching and assessment for effective implementation of new standards and syllabus.

Program requirements. By the end of the training course teachers will have the following skills:

- Recongnise the values, principles and theories for competency based education;
- Recognise and follow the requirements of multiple intelligence theory, cognitive development theories, actual and approximate zones of development;
- Interpret subject competencies;
- Select appropriate methods to develop students competencies;
- Define the levels of students' competence development;
- Develop students' competencies;
- Develop students' competencies and meet the requirements of the subject standards, be able to apply teacher's guide and supplement to the textbooks;
- Apply effective methods and strategies for teaching different primary subject;
- Develop students' competencies in accordance with standard requirements;
- Apply effective formative and summative assessment tools.

Teaching plan for 72 hour primary teacher in-service training

No	Syllabus Sections	Number of hours		
		Total	Theoretical	Practical
1.	Competency based education	12	8	4
2.	Lesson planning based on standards, textbooks and supplements	10	2	8
3.	Teaching Methodology in Competency Based Education	44	7	37
4.	Assessment in Competency Based Education	6	2	4
Total		72	19	53

Calendar-topic plan of the primary education teacher in-service training

# section	Syllabus Sections	72 hours		
		Total	Theoretical	Practical
I.	Competency based education	12	8	4
1.1.	Transition to competency based education: basis for reforming the education system	2	2	-
1.2.	Competency based education: values, achievements and shortcomings	2	2	-
1.3.	Learning theories that support development of students' competencies: individualization of learning process	<u>8</u>	<u>4</u>	<u>4</u>
1.3.1.	Student Centered Learning (Teaching that promotes students' personal development)	2	1	1
1.3.2.	Zones of Actual and Proximal Development	1	1	
1.3.3.	Theory of Multiple Intelligence	2	1	1

1.3.4	Taxonomy of Learning Domains and Competency Based Education	3	1	2
II.	Lesson planning based on the standards, textbooks and textbook supplements	10	2	8
2.1.	Subject Standard's Structure	1	1	
2.2.	Lesson Plan Model	1	1	
2.3.	Working with standards, textbooks and supplements for "Mother Tongue" Subject	2		2
2.4.	Working with standards, textbooks and supplements for "Math" Subject	2		2
2.5.	Working with standards, textbooks and supplements for "Art and Craft" and "Nature" Subjects	2		2
2.6.	Working with standards, textbooks and supplements for "Music and Singing" and "Physical Instructions" subjects	2		2
III.	Teaching Methodology in Competency Based Education	44	7	37
3.1.	Generic Teaching Methodology and Technology			
3.1.1.	Teaching technology	2	2	
3.1.2.	Teaching Methods	2	2	
3.1.3.	Practical activity to apply subject standards supplement and textbooks	2		2
3.2.	Methodology of Teaching "Mother Tongue"	12		12
3.2.1.	Methodology of developing students' reading competencies	4		4
3.2.2.	Methodology of developing students' speaking and listening competencies	2		2
3.2.3.	Methodology of developing students' writing competencies	4		4
3.2.4.	Methodology of teaching vocabulary	2		2
3.3.	Methodology of teaching "Math"	10		10
3.3.1.	Methodology of teaching numbers and math signs	2		2
3.3.2.	Methodology of teaching arithmetic actions and problem solving	3	1	2
3.3.3.	Methodology of teaching geometric shapes	2		2
3.3.4.	Methodology of teaching units	2		2
3.3.5.	Methodology of teaching processing data	1		1
3.4.	Methodology of teaching "Nature"	4	2	2
3.4.1.	Teaching observation, experimenting and analyzing skills	2	1	1
3.4.2.	System learning in natural science	2	1	1
3.5.	Methodology of teaching "Art and Craft"	4		4
3.5.1.	Methodology of teaching paintings	1		1
3.5.2.	Methodology of working with paper and cardboard	1		1
3.5.3.	Methodology of working with plasticine and natural materials	1		1
3.5.4.	Methodology of teaching thread and cloth	1		1
3.6.	Methodology of teaching "Music and Singing"	4		4
3.6.1.	Teaching singing skills	2		2
3.6.2.	Teaching listening to music skills and music learning strategies	2		2

3.7.	Methodology of teaching “Physical Instructions”	4		4
3.7.1.	Methodology of teaching key sports, safety and value concepts	2		2
3.7.2.	Methodology of Teaching of movements and exercises	2		2
IV.	Assessment in competency based education	6	2	4
4.1.	Formative assessment	3	1	2
4.2.	Summative assessment	3	1	2

I. Competency based education (12 coar)

1.1. Transition to competency based education: basis for reforming the education system (2 hours)

In order to understand the necessity of the transition to new educational approach/system first of all teachers should analyze and evaluate current education system in comparison with new education system requirements. Current (traditional) education system is based on learning theory that was framed by John Amos Comenius. The traditional system is class-lesson based in terms of teaching process management and learning contents are presented through explanatory-visual methods. This educational theory was developed based on the didactic principles in XVII century.

Explanatory-visual methods were mainly used in class-lesson based education system. This type of teaching allows conveying vast amount of information in short period of time.

Through explanatory-visual methods teachers provide ready knowledge, students receive knowledge and reproduce it. Learning contents in this type of education is presented through linear and connected syllabus. Teachers mainly used oral retelling of the topic and applied visual aids. This type of education activities became tradition or habit.

In explanatory-visual teaching activities are mainly were focused in developing students' memory and had reproductive features. It means that students after hearing (or reading) of information should remember and later call to memory and reproduce it. The teaching process and results are limited to the knowledge that students received from teacher's speech or from textbooks and other teaching and learning materials. Students reproduce learned knowledge through different means: retell, recall, written composition, essay, assessment works etc.

When the class-lesson and explanatory-visual teaching methods were developed the people's social, economic, cultural and learning conditions and science, values and technical achievements were at different level. For example, most works (production) were done manually, transportation and communications were not developed, the information sources were limited (only books). Moreover, the literate person were those who knew more information/

Verbitsky A.A., defined several inadequacies of the traditional education system: "Learning contents and activities are focused on the past. It means, information, data, rules that are taught during the leaning process have limited link with the real life. In addition examples, experiences and concepts (ideas) represent specific time period. This leads students would not be able to define their role in the given timeframe and thus the level of education status decreases. This also lowers the level of students learning motivations. Because students do not know, why, when and where they can use learned knowledge. Most experiences and presented examples are fictional and would not provide

students with opportunities to analyze and evaluate the learning problems, because the behaviors, rules and laws do not match the modern life.”

Bolotov V.F., and Serikov V.V presented several evidences on inadequacies of the current/traditional system. According to them “... changes in the social, informational and technological sectors served as basis for appearing modern culture where knowledge based education lost its effectiveness and values. It can be stated that knowledge based education is facing deep crisis. Several reasons caused this crisis. One of the reasons is linked with changing the social value of knowledge and experience: currently, obtaining information became important aspect of person’s professional activities, and is basis for all types of modern production. The speed of information change became equal to the reforms in manufacture devices.

The huge information flow that becomes outdated by the time when the students graduate schools would not be possible to fill in the frame of educational curriculum. Teaching of “reliable knowledge/information” is important, however, if students would not be provided with opportunity to adjust its aspects than we will not be able to prepare students to the real life ... Another reason for the crisis in knowledge based education is that the necessity of filling the children’s memory with surplus knowledge is no longer true. There is vast number of means for information storage. Students should be taught how to use these sources.”

Changes/reforms in different scientific, economic and social life sectors encourages the education sector to meet the modern society requirements/needs. One of the reasons for reforming education system (teaching contents and processes) is the intended outcomes of the National Strategy for Education Development of the Republic of Tajikistan by 2020. According to this Strategy: “Modern education system should reflect modern world trends, not just knowledge, but be aimed at developing competencies, it should provide students with opportunities to master key social competencies and skills, such as informed decision making and planning the professional development, lifelong learning, communication skills, readiness to the needs of “world of work”, personal development skills, healthy life skills, civic society values.”

National Strategy for Education Development specify the reform aspects of the education and plans transition from traditional knowledge-based education to competency based education. This decision is researched based and derived from theoretical and practical observations.

Learning outcomes

Participants will be able to:

- explain the traditional education system and tell the necessity for reforms;
- provide evidences to explain the reasons for transition to competency based education;
- compare and provide reliable conclusions on traditional and competency based education.

1.2. Competency based education: values, achievements and shortcomings (2 hours)

Competency based education is a system where the focus is developing students' practical (life, actual, functional) skills. Competency based education answers questions: "What students will be able to do?" "What actions he/she can do?" Know or knowledge in competency based education is an integrated part of the skills, and used to evaluate, compare with the samples and error corrections.

Teaching attitudes and processes in competency based education have specific characteristics. These specifications define the students' attitudes to learning, teachers' roles in learning process, relationship between teachers and students, students and learning contents. Recognition and implementation of these specifications provides teachers with opportunities to develop the level of students' skills and competences, and at the same time create basis for developing of responsible, literate and well-mannered personalities. In methodological literature devoted to the competency based education 10 principles of learning process are defined:

Responsibility – in competency based education students are responsible for learning, behavior and input to learning and upbringing process. They feel themselves as valuable person and member of the class.

Opportunities – students have opportunities to read, written and do math calculations and other learning activities specifically and target oriented. They are able to communicate the learning contents with classmates, parents and community members. They sometimes use textbooks and workbooks.

Activities – students actively involved in learning activities that are encourage them to reading, calculations and creation. Sometimes students are encouraged to read, evaluate and design project works and select books for accomplishing the tasks.

Presentations – teachers demonstrate reading and writing skills as best examples and students observe and learn how best to manage the task.

Taking risks – students are encouraged to reaserch the topic, present hypothesis and take risks.

Instructioning – teahcers use demonstration to teach students reading and writing skills and strategies.

Reflection – students express own attetudes to the stories, make predictions, ask questions and check their level of comprehension through different reading sheets and participate on overall discussion and analyzing texts. When writing gives own written work for peers to review and provide feedback and present the results of own work to the class.

Choice – usually students have choice to read and write, and select reading text (book) to the extent/criteria that set by the teachers. When students are given the opportunity to

select, they will be more motivated to read, write and do other learning activities. They value the learning experience that they have developed/achieved.

Time – students are given enough long time for practicing reading and writing. If the learning problem would be divided into short periods, the learning results would not be better. In order to make the learning to read and write process more effective, students should be involved in practicing reading and writing at least two to three teaching hours per day. During mastering new skills only learning tasks and instructions may be used. The school management should try to design the lesson schedule in more effective way. This is very important at primary education level.

Assessment – teachers and students together develop assessment criteria or indicators. This will help students to monitor their learning and participate in assessment activities.

Learning outcomes:

- will be able to describe the definition for “competency”;
- explain competency based education concept;
- Discuss the specification of modern teaching and learning approaches.

1.3. Learning theories that support development of students’ competencies: individualization of learning process

1.3.1. Student Centered Learning (Teaching that promotes students’ personal development) (2 hours)

The main objectives of the student centered learning are: develop mechanism to apply knowledge, skills and learning attitudes; focusing on personal development process; adapt to new and unfamiliar situations; self-defense; self-management. Main principles of students centered leaning are: **Students** are not recognized as empty jar. They are able to understand and comprehend. Main focus is not only the learning contents (What we teach?), but given to the learning process (how we learn?). The teacher’s role is to provide suitable environment and opportunities for mastering skills, developing different strategies and mechanisms that support students develop personal skills. **Students learn using different approaches** and therefore they have different comprehension styles. Personalization and individualization of students’ responds should be encouraged. Every person has different learning styles. Taking into consideration and developing these abilities/styles is recognized as one of the main components of the student centered learning.

Learning is an active developmental process, where connections (between facts, concepts, different procedures) regularly changes and there structure would be adjusted.

These connections are established/encouraged through constant dialogue between the teacher and students and between students and peers. Students are always encouraged to make predictions for solving the learning problems and those problems that they are working on.

Assessment in student centered learning is mainly “formative”. This means that “measuring” student’s work is not the target, assessment of comprehension (and help to understand) of the processes when students express of vision on the learning problems. Constructive and continued feedback plays important roles in mastering knowledge and skills. Students work together with the teachers to define success criteria and develop self and peer-assessment skills. You can refer to assessment unit to get more information about this issue.

Main focus is given to the cross curriculum skills, and higher order thinking skills are encouraged regularly. The main learning objectives are to solve learning problems, accessibility, organization, evaluation and presentation of new knowledge and demonstration of new skills. Students cooperate actively with teachers to discuss the objectives of learning activities based on the given problem and students’ previous knowledge and experience.

In students centered learning teachers’ have facilitation role and help students to access the information and evaluate/analyze it. This means that teachers act as observers during the learning process (thus students are guided by well-designed instructions and they do the learning tasks individually, with their peers and under the supervision of the teacher), as they do a lot of preparation work for students’ learning and assessment of the results.

Students are responsible to master specific knowledge. They eager to learn (ask questions, identify needed information etc.). They develop their skills in cooperation with the teachers and peers, based on the gathered information from different sources to solve learning problem and challenges (they try to establish the links, understand the value, and comprehend the meaning).

Teachers work together with students to define learning strategy. Students are given opportunities to work with different data sources (e.g. textbooks, internet, and other peers/classmates) and this helps to solve the problems and overcome the challenges.

Students work with different recourses (better resourced classrooms, school library: books, maps, tables, CDs, internet etc.). Sometimes students work individually; however, mostly they are encouraged to work in groups under the close supervision by the teachers.

Learning outcomes:

- explain the concept of competency based education;
- introduction to the students centered learning and its’ impact to the students competency development;
- Introduction to the student centered principles.

1.3.2. Zones of actual and approximate development (1 hour)

L.S. Vigotsky studied the issues of relationship between the child's learning and development and come to the conclusion that *learning should step ahead and become the basis for development*. This understanding of the relationship between the learning and child development made him not only focus on what is child's actual level of development, but the possible child's development aspects should be taken into consideration during learning process. The child develops that when new skills are covered and added up to the existing experience and skills. This discovery was named "zone of approximate development" and was introduced to the word pedagogy and psychology science.

Any action that a child does thoughtfully and based on his/her ability matches the development. However, it should be noted that new skills are developed based on the mastered ones; therefore this development has more advantages. One should not speed up the child's development, because this action mostly affect the nerves work rather than development of thinking skills and lead to child's "apathy".

Continues influence to the approximate zone of child's development has another important feature. *Defining the approximate zone of the child's development would not be possible without constant communication and cooperation with the child*. The teacher should carefully observe students' activities/behavior, as every student has specific characteristics (see multiple intelligence) that should be used to define teaching and learning strategies.

Learning outcomes:

- Be able to explain theory of development zones by Vigotsky;
- Be able to explain the necessity of taking into consideration the actual and approximate zones of child's development while planning and teaching.

1.3.3. Theory of Multiple Intelligences (2 hours)

The **theory of multiple intelligences** differentiates intelligence into specific 'modalities', rather than seeing intelligence as dominated by a single general ability. Howard Gardner proposed this model in his 1983 book *Frames of Mind: The Theory of Multiple Intelligences*. According to Gardner, an intelligence must fulfill eight criteria: potential for brain isolation by brain damage, place in evolutionary history, presence of core operations, susceptibility to encoding (symbolic expression), a distinct developmental progression, the existence of savants, prodigies and other exceptional people, and support from experimental psychology and psychometric findings.

Linguistic Intelligence: The capacity to efficiently use language and vocabulary, either orally or in writing.

Logical-Mathematical Intelligence: The ability to logically deduce a numerical or a scientific problem.

Musical Intelligence: A strong auditory intelligence characterized by a sense of rhythm, music and hearing.

Bodily-Kinesthetic Intelligence: This area deals with physical activity. Persons with this type of intelligence learn faster and better using hands on approach.

Spatial Intelligence: This intelligence is characterized by a strong visual memory and the ability to mentally manipulate objects. It is all about images and space and the capacity to visualize it.

Interpersonal Intelligence: The capacity to understand and perceive other people's moods, feelings, motivations and intentions.

Intrapersonal Intelligence: This intelligence is characterized by the ability to understand and introspect our own needs, desires and limitations.

Naturalistic Intelligence: An affinity towards the natural habitat and those who live in it; that is plants and animals forms this intelligence.

Learning outcomes:

- Be able to explain the theory of multiple intelligence and its impact to the learning process and results;
- Be able to explain the eight types of the intelligence and define their correlation with the learning activities.

1.3.4. Benjamin Bloom's Taxonomy of Cognitive Objectives and competency based education (3 hours)

2. Bloom Benjamin Samuel (born 21 February, 1913) a psychologist and educator. He worked in University of Chicago since 1938. He was one of the first to develop system of indicators that impact the results of learning.
3. According to Bloom the main objectives of the learning and problem setting is to develop pupils' creative thinking, problem solving and decision making. He thought that if teachers are sensitive to developing managing higher order thinking kills support the achievement of these learning outcomes. Benjamin Bloom in his book titled "Taxonomy of cognitive objectives" (New York, David Mackey, 1956) organized thinking skills into six levels. (Below is revised Taxonomy, Lorin Anderson, 1990)

6. Creating

5. Evaluating

4. Analyzing
3. Applying
2. Understanding
1. Remembering

The levels have strong linkage one level is served as basis for another. For example, if a pupil would not remember the information cannot understand it. It is clear if the learner would not understand he/she is not able to apply the knowledge. Analyzing, evaluating and creating are also based on the previous stages. Each level has specific didactic objectives that are implemented through different learning activities.

- *“Remembering”* is presented in the taxonomy as lower level of thinking skills. The learner is able to recall, restate and remember learned information.
- *“Understanding”* at this level the learner grasps the meaning of information by interpreting and translating what has been learned.
- *“Applying”* the learner makes use of information in a context different from the one in which it was learned.
- *“Analyzing”* specific skills to identify the structure of the learning material, identifying linkages of segments and logics behind this linkage.
- *“Evaluating”* making decisions based on in-depth reflection, criticism and assessment.
- *“Creating”* the learner creates new ideas and information using what has been previously learned.

Learning outcomes:

- Be able to explain the taxonomy of cognitive development;
- Matching the levels of cognitive development levels with students’ abilities.

4. Lesson planning based on the standards, textbooks and textbook supplements (10 hours)

Education reform is a long-term and complex progress and requires changes in different aspects. To maintain reliable and effective transition to new competency based education the Ministry of Education and Science of the Republic of Tajikistan developed several documents and learning materials, including Primary Education Subject Standards, Teacher’s Guides and Supplement to Textbooks. These documents have specific aims and objectives:

Primary Education Subject Standards define the set of the competencies and indicators of achievement by subjects, and presents concept of development of competencies.

Teacher's guides provide comprehensive planning of the subject competency development process. Every single lesson plan for each subject described/designed where subject competencies and learning and subject syllabus and textbook contents are aligned.

The main objective of development of supplements to the textbook us to enrich the contents and meaning of the textbooks and align them with the new competency based standards. Supplements are used as additional materials to develop subject competencies.

The objectives of standards, teacher's guides and supplement to the textbooks are presented in details in the below table:

Titles of the materials	Objectives
Primary education subject standards	<ul style="list-style-type: none"> – Define the aims and objectives of the subject at primary education level; – Define the subject competencies by grades (grades 1-4); – Set main competency development indicators aimed at providing assessment hints to teachers to evaluate students development; – Define the core concepts and theories of the competency based education; – Define core teaching methodology of the subject.
Teacher's guide	<ul style="list-style-type: none"> – Define the subject contents and themes to develop students' competencies defined in the subject standards; – Provide comprehensive lesson plans based on the standards competencies and syllabus and textbooks contents; – Description of the specific subject methodologies; – Provide competency development assessment tools.
Supplements to the textbooks	<ul style="list-style-type: none"> – Provide additional learning materials to ensure the link between the subject standards and textbooks; – Enrich the meaning and contents of the textbooks to support students' competency development.

These materials support the effective implementation of competency based education and help teachers to set the learning process based on the new standards.

4.3. The structure of the subject standards (1 hour)

All primary education subject standards follow single format. Standards cover different aspects of primary education subjects by grades. The below table presents the general structure of the subject standards:

Sections of the standards	Contents
I. General conditions	This section presents main terms, legislative and regulatory basis for subject standards, areas of applications, key principles of the subject standards, aims and objectives of the subject standards.
II. Cross curriculum and subject competencies	The present section provides subject competencies by grades and learning strands, indicators' of achievements, social-emotional competencies, cross curriculum competencies, teacher's competencies and indicators.
III. Organization of the competency based education	This sections covers theories and basic principles of competency based education, including, individualization of the teaching process, principles of the effective teaching, developing students' higher order thinking skills, crosscurriculum linkage, strategy and methodology of teaching of the subject based on competency based education.
IV. Assessment	The section presents assessment system, tools and methods. Samples of the assessment tools by the subjects are presented and teachers are guided on how to use these tools.
V. Teacher's Guide	The section presents comprehensive lesson plans for each lesson based on the learning units and themes taking into consideration developing students' competencies. The lessons integrate competencies from the standards, topics from the syllabus and contents from the textbooks.

During this session teachers discuss and review every section of the standards. Later, in other sessions will learn the standards and teacher's guides in more detailed.

Learning outcomes:

- Be able to explain the structure of the standards and the meaning of each section of the standards.

4.4. The structure of the lesson plan (1 hour)

During this session teachers will learn the structure of the lesson plans provided in the teacher's guides. They discuss aims and objectives of each part of the lesson plans based on the given samples.

Teacher's guides provide detailed lesson plans for all subject teaching hours. In spite of general structure of the lesson plans, they are different in terms of the objectives and contents. The below table describe each part of the lesson plan.

Title of the lesson	This section provides information about the number of session, title of the lesson and time. E.g., § 1. Book is our friend – 2 hours
Competencies	This section of the lesson plans contains competencies that students would develop during this lesson. For example, <ul style="list-style-type: none">– <i>Follow the speech rules in wide range of situation (visiting relatives, market, cultural and intertainment centers).</i>– <i>Able to define core text convenstions and follow them.</i>– <i>Follow other writing rules based on the set criteria..</i>
Lesson objectives	Lesson learning objectives are developed based of the competencies and the topics for this particular lesson. For example, <ul style="list-style-type: none">– <i>will be able to retell about the summer vacations;</i>– <i>name the learning tools and explain why and how they are used;</i>– <i>group words based on their meanings;</i>– <i>able to apply the spelling and pronunciation rules for letters u and ū in written and spoken text;</i>– <i>define the beginning of the line and punctuations used in the text;</i>– <i>write sentences about the functions of the learning tools.</i>
Program	Brief information about the contents and meaning of the lesson is provided here. For example, <i>Developing students' composed speech. Stories about summer vacations. Reading and analyzing the text.</i>
Lesson steps	This section consists of the sequence of learning activities. The lesson steps are provided in order and serve teachers as guides.

Evaluation	Assessment tools and methods are presented here to evaluate students' knowledge and skills in accordance with the set learning objectives.
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Learning outcomes:

- be able to explain the structure of the sample lesson plans.

4.5. Work with the standards, textbooks and supplements for “Mother Tongue” (2 hours)

During this session teachers' are introduced with the standards, teacher's guide and supplementary materials.

All mother tongue subject lesson plans that are presented in the Teacher's Guide are grouped as following:

1. **Competence development lessons** (mastering of new learning materials, practicing new skills, applying new skills and formative assessment). These are regular lessons that compose the core concept of teaching mother tongue. Listening, speaking, reading and writing are core activities of these lessons that are taught integrated.
2. **Assessment Lessons.** Overall 12 hours are allocated to evaluate students competencies in three periods (at the beginning of the school year (4 hours), by the end of the first term of the schooling year (4 hours) and at the end of the school year (4 hours); 8 hours for evaluation of written works (dictation – 4 hours, written composition (2 hours) assessment essay or story – 2 hours during specific periods of schooling year. It is necessary to note the title of the texts for the assessment written works in the class register book. In the section for students assessment results every child should receive marks that show he/she passed the assessment
3. **Lessons for developing writing skills.** Based on the complexity of the writing skills and creating text (written composition, essay, story) 24 training hours are allocated. These lessons should be separated from summative assessment. During these lessons text development skills are trained. It is obligatory to write the titles of the written works in the class register book, however, there is not necessary to put marks for all students.
4. **Out of class reading lessons (discussion of the read books).** These lessons are devoted to discussion of the books that students read out of school. Competency based education do not only rely on the curriculum requirements, but also encourages students learning out of the school environment. These lessons were

designed to monitor and evaluate to what extent teachers and schools motivate students for continues education.

5. **Conclusion lessons and error corrections.** These lessons help to define students' challenges and select appropriate strategies to provide for constructive support. During the learning process teachers should define what the students' challenges are. During these lessons teachers group the challenges and involve advanced students to help others to achieve learning objectives and support students' competency development.
6. **Project works.** These lessons are aimed at developing student's creativity skills and require students to develop small books, gather resources and data about different topics, to conduct observations etc.

Learning outcomes:

- Be able to explain subject competencies and indicators of achievement;
- Be able to review and analyze the sample lesson plans from the teacher's guide and define their link with the standards and textbooks;
- Discuss types of the recommended lessons and how to implement those.

4.6. Work with the standards, textbooks and supplements for "Math" subject (2 hours)

As it was mentioned above standards, teacher's guides and supplements have the same structure for all primary subjects. This helps teachers to understand different subject based materials and implement them.

During this session teachers work with standards, teacher's guide and supplement for math subject for grades 1-4 and practice how to implement them. The mastering of the teaching and learning of these materials are planned as following:

- 1) Reviewing competencies and indicators for Math for grades 1-4. Explain and interpret the competencies and indicators.
- 2) Review and analyzing the recommended lessons and defining the links between supplements and textbooks.
- 3) Discussion and evaluation of the problems and challenges that may occur while implementing the recommended lessons and using the supplement materials.

Learning outcomes:

- Be able to explain subject competencies and indicators of achievement;

- Be able to review and analyze the sample lesson plans from the teacher’s guide and define their link with the standards and textbooks;
- Discuss types of the recommended lessons and how to implement those.

4.7. Work with standards, textbooks and supplements for “Art and Craft” and “Nature” subjects (2 hours)

During this session teachers work with standards, teacher’s guide and supplement for “Art and Craft” and “Nature” subjects for grades 1-4 and practice how to implement them. The mastering of the teaching and learning of these materials are planned as following:

- 4) Reviewing competencies and indicators for “Art and Craft” and “Nature” subjects for grades 1-4. Explain and interpret the competencies and indicators.
- 5) Review and analyzing the recommended lessons and defining the links between supplements and textbooks.
- 6) Discussion and evaluation of the problems and challenges that may occur while implementing the recommended lessons and using the supplement materials.

Learning outcomes:

- Be able to explain subject competencies and indicators of achievement;
- Be able to review and analyze the sample lesson plans from the teacher’s guide and define their link with the standards and textbooks;
- Discuss types of the recommended lessons and how to implement those.

4.8. Work with standards, textbooks and supplement for “Music and Song” and “Physical Instruction” subjects (2 hours)

During this session teachers work with standards, teacher’s guide and supplement for “Music and Song” and “Physical Instructions” subjects for grades 1-4 and practice how to implement them. The mastering of the teaching and learning of these materials are planned as following:

- 7) Reviewing competencies and indicators for “Music and Song” and “Physical Instructions” subjects for grades 1-4. Explain and interpret the competencies and indicators.
- 8) Review and analyzing the recommended lessons and defining the links between supplements and textbooks.
- 9) Discussion and evaluation of the problems and challenges that may occur while implementing the recommended lessons and using the supplement materials.

Learning outcomes:

- Be able to explain subject competencies and indicators of achievement;
- Be able to review and analyze the sample lesson plans from the teacher's guide and define their link with the standards and textbooks;
- Discuss types of the recommended lessons and how to implement those.

5. Teaching Methodology in Competency Based Education (44 hours)

5.3. Generic Teaching Methodology and Technology (6 hours)

5.3.1. Teaching technology (2 hours)

Term "technology" is derived from Greek language and composed from *techne* – «arts», «abilities»; *logos* – «science». It means "art science".

In pedagogy literature the terms "technology of pedagogy", "teaching technology", "learning technology" are used. There are identical as pedagogy, teaching and learning. According to teaching and upbringing process "technology" could be described as arts of teaching. Many bilingual dictionaries also give almost the same definition for "technology", such as set of ways and methods for capable and professions completion of the work.

Technology of teaching process is a development process that focuses to improve the effectiveness of the learning process, ensuring the intended students' outcomes.

The common and difference between teaching technology and teaching methods are described as following:

1. Technology – methods of using different ways and approaches during teaching process.
2. Technology and methodology – both should be equally used during the teaching process.
3. Method is a wide terminology. It can consist of several technologies. In this case, most of the time methodology is recognized as single pedagogy system.
4. In traditional methods teacher's mainly delivered information from the books to the students. In teaching technology teachers' do not teach, they mainly guide, motivate students and manage students' learning activities.

The following are the indicators of technology based learning process:

- First designing learning objectives as intended learning outcomes;
- Presenting the learning contents as a system (logical sequence) of learning tasks.

Learning outcomes of the session:

- be able to explain the term “teaching technology”;
- be able to define principles of technology of teaching process.

5.3.2. Teaching methods (2 hours)

Methodology is an approach that is devoted to pedagogy and sometimes it is called specific or subject didactics.

Term “method” was derived from Greek word “metodos” that have the following meaning in Tajik language “approaches”, “ways”, “manner” etc. The word “method” was extracted from Russian to Tajik language and is used along with its synonyms. This term is not only used in teaching, but also in different sectors of the production and agriculture. For example, methods of growing cotton, wheat etc. Methods and methodology in teaching are different regarding their objectives.

When describing methods words “teaching”, “learning”, “mastering”, “training”, “obtaining”, “ability”, “skills”, “knowledge”, “literacy”, “development”, “gaining” etc. are used very often. Both teachers and students actively participate in teaching and learning process. Methodology is defined as following in pedagogy: *methodology is ways of cooperation between teachers and students on how to learn and what tools to use, developing skills, enriching students' world learning, upbringing and improving their abilities.* Methodology should meet the following requirements:

1. Methodology should be based on the learning theories and subject based sciences; should reflect modern approaches in pedagogy, psychology and best practices using modern teaching technologies.
2. Methodology has specific objectives and reflects subject teaching approaches. Teaching and upbringing not only affect learning contents, but also to learning process and its approaches.

Primary education is foundation for personal development, and basis for learning and upbringing. It plays significant role as indicators' for success and failure of primary education students and their future activities. Students at this level learn to read, write and calculate, study nature events and set of aesthetic subjects and their learning motivations develop.

Teaching profession is creative and has strong connections with science and culture. If the teacher's will present new knowledge and skills in alike and boring manner, it means that the teachers do not feel his/her profession.

In modern full of information world different methods and technologies are used to improve teachers' professional skills and students' personal development. Teachers improve creative skills through these methods and types of activities.

Teaching approaches can be changed, the methods could be adjusted, but students always should be core of the educational process.

Session learning objectives:

- Be able to explain term “methods”;

- Discuss methods and generic learning activities and define their link with competency based education.

5.3.3. Practical work with subject standards and supplement to the textbooks (2 hours)

During this session teachers will be divided into the subject groups (Tajik language, math, art and craft, music and song, physical instruction) and review the subject standards and supplementary materials, select generic methods and prepare demonstrative lessons. Groups present their demonstrative lessons and evaluate their colleagues.

Samples of generic teaching methods:

Brain Storm

Brain storm is well known methods of eliciting ideas. This method is aimed at gathering ideas, activate students to the lesson process and create inquiry situation.

This method is applied as following:

- 1) Question/problem if presented to students.
- 2) Students express thought and ideas regarding to the given question or problem.
- 3) The ideas are noted.

The teacher listens to the students' ideas and discuss them. Presented ideas first noted, that discussed and edited. The teacher refers to the best respond/idea and links them with the main lesson objective and moves to the main part of the lesson.

Cluster

The cluster is method for gathering students' ideas on specific topic or a term and uses different types of the clustering. Students express their ideas on the given topic (term), link them. This helps students gather all ideas in one place, and visually recognize them. The meaning of the cluster is "branches" in Tajik.

This method is aimed at gathering students' ideas, create inquiry situation, develop expressing own ideas in brief, learning different approaches of gathering ideas, presenting additional information and define the level of students basic knowledge about the given topic.

This method is applied as following:

- 1) A circle is drawn on the board (or flipchart);
- 2) The main topic (term, key word) is written in the middle of the;
- 3) Students are asked questions based on the given topic (term or key words);
- 4) Students write their ideas regarding to the given topics (term or key words);
- 5) Student establish the link between the ideas and show the link.

This method is mainly used before learning new topic, as students will be ready to understand the new information and enhance activeness.

The teacher can use the cluster in different periods of the lesson based on the lesson objective needs. This method will not limit the ideas, but link the ideas together.

In cluster method communication, logical link and sequence of ideas are important to make the understanding easy. The clusters can be used in different lessons and subjects based on the needs.

CATEGORIZATION

(**Category** – set of the items, events and situations that are similar by some features)

This method helps to group the words, terms in accordance with their signs and specific features. This method can be used to conclude the brain storm, group words, statements and terms. Categorization aimed at grouping expressed ideas, words by categories, improving inductive skills and develops students writing skills.

This method is applied as following:

- 1) Conduct brain storming on the given problem or objective and ideas are noted.
- 2) Several (3-4) categories are Witten in front of the ideas (categories are defined by students).
- 3) Students separate ideas and statements by categories and group them.

Application of the categorization activity in primary grades

Write the words in the table.

Willow, iris, Khairi, pomegranate, Guldara, Lola, rose, Farhod, apple.

Tree	Human name	Village name	Flower

Find the common title for the words.

1. Watermelon, pumpkin, cucumber, melon
2. Rakhsh, Khaibar, Moshon
3. Isfara, Shamsiddin, Surkhob, Pamir
4. Weak, green, slim, soft

This method is used in different periods of the lesson (remembering the existing knowledge, comprehend the meaning and contents of new learning problem, discussing new problem).

VENN's DIAGRAM

Venn's Diagram is a method to define the difference and similarities of the statement, events, item and compare those features. Teachers can use this method to compare positive and negative features of the story characters. Students write similarities,

differences and comparison in their notebooks or board. This method is aimed at analyzing and comparing two or more terms (items, events, characters) and develops their evaluation skills.

This method is applied as following:

- 1) Learning problem is presented to students.
- 2) Students think over the given problem and define the similarities and differences.
- 3) Students draw two intercross cycles.
- 4) They write differences in the right and left side of the cycles and similarities in the middle.
- 5) Each group present own results.

“WHY?” DIAGRAM

“Why?” diagram is a process of discussion to define basis and reasons of appearance of the result. It is used to solve learning problem/challenge, defining reasons for character’s behavior and defining the reasons for events and situations.

If the question is designed appropriately, it will be easy to find the results of any reasons. Constant use of this method will support development of life skills: thinking ahead, finds the solution before the problem occurs etc.

This method is applied as following:

- 1) The text is read and retold;
- 2) Then the result is defined. Mainly the result of actions are presented in the last sentence;
- 3) After defining the result a set of the questions using “Why?” is asked till the reasons for the events are not defined. At first stage the discussion is managed through questioning (without a diagram). Answers are entered to the diagram gradually.

Example:

Read the text and retell it.

A lion was sleeping in a forest. A mouse started playing on it. The lion was disturbed and arose from his sleep. It caught up the mouse angrily and tried to crush it to death.

Then the mouse prayed the lion to leave him off and assured that it would help him when it needed. The lion laughed at it and let him off.

One day the lion was caught in a net spread by a hunter. It roared and tried to escape but in vain. The mouse heard the lion's roaring and came there. It started cutting the net with its teeth. The lion escaped and thanked the mouse.

1. Answer the questions.

Teacher: - **Why did** the mouse do well for the Lion?

Students: - He felt compassion for the Lion.

T.: - Why did he feel compassion for the Lion?

S.: - Hunters caught the Lion in a net.

T.: - Why did the mouse want to release the Lion?

S.: - The Lion let the mouse off.

T.: - Why did the Lion let the Mouse off?

S.: - The Mouse prayed the Lion.

T.: - Why did the Mouse pray the Lion?

S.: - To leave him off.

T.: - Why the Lion should leave him off?

S.: - The Lion caught the Mouse.

T.: - Why did the Lion catch him?

S.: - The lion was disturbed and arose from his sleep.

T.: - When and in what situation the Mouse crossed the Lion?

S.: - The Lion was sleeping in a forest.

Learning objectives of the session:

- Be able to define generic teaching methods from the teacher's guides and supplements;
- Demonstrate the use of generic methods.

5.4. Methodology of Teaching "Mother Tongue" (12 hours)

5.4.1. Methodology of developing students' reading competencies (4 hours)

Reading fluency is the ability to read the text accurately and with appropriate speed. Those students who read fluently group the words immediately and comprehend what they read. Students who have fluent reading skills can read aloud and with expression. Their reading is natural and matches the speed and speech intonation. Students who do not have developed fluent reading skills read slowly and word by word.

Reading fluency is important as it serves as a bridge between recognition of the words and reading comprehension. Students who read fluently focus on meaning and not on separate words (decoding). They create a link between the text ideas and their own basic knowledge and experience. In other words, students with good fluent reading skills comprehend what he/she reads.

Fluent reading is improved gradually through lots of practice. During the first stages of learning to read, students read slowly, because they now know the letters, connect sounds and read the words.

Researches present two types of teaching reading fluency methods: 1) read aloud with teacher support and 2) silent individual reading. Both methods have positive impact to students' developing fluent reading skills. However, the first method – read aloud with the teacher monitoring and guidance is more effective rather than students reading silently.

Repeated reading for several times (not less than three times) helps students to read the text fluently.

Guided reading is more effective way to develop students' fluent reading. This can be done through the following tools: *teachers read aloud, repeated reading, pair reading, chorus reading, adults reading to children, group reading, reading along with the type, role plays.*

Reading comprehension is main objective of reading. Most teaching and methodological literature give the following definition for reading comprehension: "reading comprehension is the process of deriving and constructing the meaning of the written text". Constructing meaning means understand the idea of the author of the text. Constructing meaning requires analyzing the author's ideas through integration of personal "abilities, skills, knowledge and experiences" and the text. Reading comprehension skills integrate other aspects or subskills of reading to understand the text.

Development of reading comprehension skills is one of the important objectives of teaching "Mother tongue" in primary grades. Therefore, the subject standards define different reading comprehension competencies. Almost all education systems of different countries of the world pay special attention to the reading with comprehension.

The student who has developed comprehension reading:

- Reads texts individually using different strategies and comprehend the meaning;
- Is interested in reading and selects books, newspapers and other means of information to read;
- Achieves better results from different subjects;
- Has advanced speaking skills;
- Differentiates texts by their structures;
- Questions the texts and answer the questions regarding to the read text.

Comprehension reading strategies are cognitive processes that help to read the text individually and comprehend it. This is pre-planned targeted activity that helps to understand the text and retain it. Reading strategy is continued cognitive activities before reading, while reading and after reading. Reading comprehension strategies help students to improve the level of understanding, overcome the challenges of comprehension of the text, and compensate weak and incomplete knowledge about the text.

Teachers guide students to effective and specific discussions that help students to comprehend the text fully. This type of discussion is conducted between students or between students and teachers and starts with simple answers and moves to the more logic and complex questions and answers. During investigation of the meaning of the text students tell about own relationship with the text ideas and make conclusions. During

discussion teachers ask more questions and using think aloud approach demonstrate how to find responses for the questions.

Teachers can read aloud the text and ask questions in accordance with text flow, what is the story about, what do they think will happen next etc. Manages the discussion using different higher order thinking questions. This helps students to analyze the text.

In addition teachers select text for discussion and students may not agree with some of the issues in this text, such as the correct behavior of the characters, whether the story end is real or not etc. After reading the teachers can divide students in accordance with their attitudes to the text (agree or not agree). The groups are asked to select an idea from the text that they support (for example, events that make the end of the story real or fiction). The teacher asks students to highlight these parts of the text.

In order to comprehend the text the teachers should develop different level questions. These questions should encourage students to evaluate and discuss the meaning of the text. Questions should not be simple (What was the boy's name?) or ask students to tell their ideas about the meaning of the text (Did you like the story?). Higher order thinking questions mainly have the following components:

- Why ... ?
- What do you think about ... ?
- If you were the author of the text what would you?
- What does this remind you and why?

In order to derive and construct the meaning students should actively work with the text and if the students learn in an encouraging and motivating environment they will have better reading skills. Teachers can create this favorable environment by presenting lesson learning objectives of each lesson and explaining the value of reading comprehension to their life. In addition teachers should help students not only in completing learning tasks, but also to focus on broader aims. Teachers should select reading materials that support students to select and cooperate with others.

Teachers should develop value of reading skills and its impact to the everyday life and develop student's cognitive skills.

Teachers have to pay special attention to reading during lesson process. They may display students' work, develop class rules, safety rules and guidance or during movement in the school building and reading posters. Teachers also can collect books that are appropriate to the students' age and reading ability. For example. Teachers can create reading corner or class library with attractive design and different topic based on the students' interest.

Teachers also can develop student's interests to reading through activities that are linked with the lesson topics. For example, performing a story from the book, drawing or other types of art and craft also can link the reading with real objects. Developing students reading motivation can be also done through giving information about plants, they can plant the seeds, observe growing and take notes. Than while reading texts teachers may guide students to link the meaning of the text with the students' experiences in planting and looking after plants.

Teachers should teach students using comprehension reading strategies, teach the structure of the text in order to manage cognitive development and also select texts that is interesting to work with and support development of higher order thinking skills.

Students should not only use the reading strategies appropriately, but receive new knowledge from the text. Therefore, using reading comprehension strategies along with active discussion of the meaning and encouraging students to evaluate the texts will increase the level of their motivations to read.

Learning outcomes:

- Be able to describe reading competencies;
- Develop lesson plans based on the standards, teacher's guides and textbook supplements to develop students' reading competencies;
- Use methods that support students reading competencies.

5.4.2. Methods for developing students' listening and speaking skills (2 hours)

Listening is one of the important skills. Ability to listen to the information, comprehend it, influence the communication with others. The person listens to different speeches, stories and other oral text with different objectives. For example:

- 1) Receiving information;
- 2) Comprehend the meaning;
- 3) Enjoy (song, music, poetry etc.);

Different researches show that a person can retain 25 to 50% of heard thing. Therefore, developing listening skills help students to understand the information fully and improve the level of retention of the learned materials.

By developing listening skills students will be able to improve overall learning outcomes, and also develop convincing skills, encouraging others and coming to a consensus. Moreover, better listening skills helps to avoid misunderstanding and conflict between the speaker and listener. In order to develop this skill student should know the generic listening rules and follow them:

- 1) Listen to the speaker attentively. i.e.:
 - Look at the speaker while talking;

- Do not pay attention to other surrounding sounds;
 - While listening do not think negatively;
 - Do not pay attention factors that disturb listening process, such as surrounding sounds, other's speaking;
 - Pay attention to the mimes and gesture of the speaker.
- 2) Demonstrate real listening, i.e.
Using non-verbal tools (mimes and gesture) in order to direct the focus to the speaker.
- Nod the head while listening;
 - Smile and use of appropriate gesture and mime;
 - Keep the body straight and open;
 - To comment to keep the discussion go, such as *yes!?*, *is it?* etc.
- 3) Comments and responds
Personal ideas, trusts, experience and evaluation may misinterpret the information. In order to avoid this listener should pay attention to the heard information and ask questions to clarify. Commenting through "It means, you say that ..." Ask questions to define specific aspects "When you talked about ... what you meant?", "Did I understand you correctly ...?".
- 4) Delaying conclusions
Interruption of the speech is wasting time and may hurt the speaker and disturbs the understanding of the information.
- Give the speaker opportunity to finish the speech and then ask questions;
 - Do not interrupt speakers with opposite ideas.
- 5) Give appropriate respond.
Active listening shows the respect and understanding of the issue. A listener receives new information and ideas. If the listener while speaking wants to attack or insult the speakers, in this case he/she would not get anything from the conversation.
- Be clear and honest in answering;
 - Present ideas in respective way;
 - Show appropriate relation to the partner.

Learning outcomes:

- Be able to describe listening and speaking competencies;
- Develop lesson plans based on the standards, teacher's guides and textbook supplements to develop students' reading competencies;

- Use methods that support students listening and speaking competencies development.

5.4.3. Methodology of developing writing competencies (4 hours)

Written speech/text as speaking is a mean for communication and transmission of the information/data. Writing in primary grades is one of the core skills. This is the skill that other skills are developed based on it. Therefore, the student who mastered writing skills will be successful not only in learning the language, but also in learning other subjects.

Writing process is complex psychological and physiological process. During writing nerve system, visual organs, hearing organs (especially during dictation) and other muscles of the human body are involved. This is clearly stated in our ancient poets' works:

Recognize write more important than speaking,
Integrate all your thoughts while writing. (*Mas'udi Sa'd*)

In primary education level students master three core skills: writing techniques, spelling and creation of the text. Writing techniques are to write the letters in accordance with calligraphy rules, following the height and size of the letters, connection of letters, distance between the words and neat writing. Students have to practice a lot to be a neat writer.

Dictation (correct spelling). Set of spelling rules for words; wrap the words from one line to another, using capital letters, using dash etc. In primary education students practice spelling though learning dictations they will be able to correctly spell words with letters *ā, yā, x, d, t, x, b*, repeated letters, apply rules for word wrap, spelling of common nouns etc.

To create (write an essay, writing) the text students practice writing sentences (stories, advertisement, letter, essay, composition and other types of texts). Writing skills as reading skills can be "fluent:" and "comprehension". Fluent writing means that students follow the appropriate speed, spelling rules, punctuation marks and other text conventions. Comprehension writing means students express own ideas in logic way and in specific format/structure using appropriate words.

Therefore, "Mother Tongue" subject standards for primary education grades cover these aspects. In first and second grades writing techniques are in focus and limited time is allocated for the creation of the text. However, in grades 3 and 4 the focus is more to creation of the texts. Different text conventions, including, following the structure, logical sequence of the sentences, using description means etc. are taught.

Learning outcomes:

- Be able to describe writing competencies;

- Develop lesson plans based on the standards, teacher's guides and textbook supplements to develop students' writing competencies;
- Use methods that support students writing competencies development.

5.4.4. Methodology for teaching vocabulary (2 hours)

Vocabulary knowledge means the word resources that a person uses to communicate. The vocabulary knowledge consists of oral and written vocabulary resources. Oral vocabulary resources are the set of words that a person uses during speaking and understand when hear them. Written vocabulary resources are set of words that a person uses while reading a text or while writing a text.

It is well known that vocabulary knowledge is very important in learning to read process. For example, a student who is learning to read connect the meaning of the read word with the words he/she heard and comprehend them. For example, while reading word *bread* the student first decodes the words and compares with oral vocabulary, and constructs the meaning. The student has heard this word for many times and used in oral speech. This procedure is used with those words that students know. However, procedures for unfamiliar words with (students did not use these words in their oral speck and didn't hear them at all) are more complex.

Ideas about "there are complex and incomprehensible words are used in the textbook"? "Students do not understand their meaning, because the words are complex" etc. will not be case for not developing students vocabulary resources and for learning new words.

Vocabulary knowledge plays important role in reading comprehension. If the student does not know the meaning of most words would not understand what he/she reads. Whe students start reading more complex texts; they should define the meaning of worlds that they do not know.

Learning vocabulary is maintained through direct and indirect methods. Students learning the meaning of the words indirect through oral communication reading texts. For example,

- Young readers learn the meaning of words while communicating with others, especially when they communicate adults. Young readers during communication hear different words and repeat these words for several times. If the student communicates more, he/she learns the meaning of many words.
- Students also learn the meaning of words when adults read for them (they read stories, folktales etc.). Adult read aloud will be more effective if the reader stops when he identifies that the word is complex and explains the meaning of the word or discuss it with the students. Discussion of the text after reading helps students to learn new vocabulary and compare it with the basic vocabulary knowledge.
- Students learn more words when they read individually. If the student reads individuzlly he/she learns more words.

Some words should be learned through different methods and strategies. Vocabulary teaching methods help students to learn the meaning of complex words (that rarely used in spoken language). Direct teaching vocabulary of the given text impacts the level of text comprehension. There are different strategies for learning vocabulary that can be taught during the lessons.

- **Teaching vocabulary before reading.** Teaching new vocabulary before reading the text has positive impact to students' vocabulary knowledge and reading comprehension. It is recommended that teachers define the unfamiliar and complex words before reading the text and teach them. Thus learning key words of the text topic will support comprehension.
- **Continued and repeated vocabulary practice.** It is clear that more practicing of new vocabulary helps comprehend the meaning of the words and also helps students to use the words appropriately. Therefore, it is recommended that teachers use different approaches to practice new vocabulary, including, using different types of the dictionaries, developing definition dictionaries, topic based crosswords, grouping words based on their features (meaning, Semantics and grammar), different learning games, writing sentences with the given words etc.
- **Repeatedly and regular work with vocabulary.** It is recommended that new vocabulary should be used in different situations, such as speaking, listening, reading and writing repeatedly and regularly. This allows students to retain the meaning of the words and use them appropriately.

Learning outcomes:

- Be able to explain the necessity of enriching the vocabulary knowledge;
- Be able to select appropriate methods for students to develop vocabulary knowledge.

5.5. Methodology of teaching “Math” (10 hours)

5.5.1. Methodology of teaching numbers and math signs (2 hours)

Meaning of numbers, numbers, positive integer numbers and actions with these numbers are core topics of the primary math education. When teaching numbers students develop specific knowledge that helps them to do arithmetic actions.

Learning contents are taught in accordance with four digit number: tenth, hundredth, thousands and multi digit numbers

1. Decimals

The decimals are defined by the methodological literature as following:

- 1) Ten – natural counting system that starts from 1 to 10, and used for counting and has name and symbol.
- 2) Math actions is linked with multi-valued actions.
- 3) Addition and subtraction with decimals composes a set of action that would not go beyond 10.
- 4) Use small numbers many terms can be taught easily (for example, terms for equity, inequity, addition, subtractions, natural numbers).
- 5) During learning “decimals” those topics are mastered that will serve as bases for learning future skills. For example, $20 + 30 = 50$ or 2 decimals + 3 decimals = 5 decimals

Learning decimals is divided into three stages: preparation period, learning numbers, learning addition and subtraction.

Preparation period

In the preparation period the following issues are in focus:

- 1) *Counting objects.* The following sequence is practiced during counting: a) classroom objects; b) toys; c) pictures of the objects; d) counting sticks; e) pictures from the textbook. Using back counting is also useful: 10, 9, 8, 7, 6, 5, 4, 3, 2, 1. While practicing objects students should know that the sequence of counting does not depend on our counting sequences; while counting any objects not counting some objects or count one object twice is not allowed.
- 2) *More? Less? Same amount?* The main objective of this topic is encourage students to define what groups of objects are more, less or the same amount.
- 3) *Placement of objects towards each other:* "in front of ", "between", "behind" and the advantages of the number sequence.

Numeration of the first decimals

While learning numerations of the first decimal students should master the following knowledge, skills and abilities:

- Learn the sequence of numbering from 1 to 10, and be able to count in progression and regression sequence;
 - Recognize that how each before and after number appears;
 - Compare any two numbers, i.e. define what number is bigger, smaller or equal and use ">", "<", "=" signs;
 - Learn the relations between addition and subtraction by hearing the instruction for math problems and simple task; know the parts of the math problem and able to solve them;
 - Know how to count the numbers and write them accurately.

When learning numerations students develop understanding of numbers.

2. Hundreds

The following issues are learned during mastering “hundreds”: numerations of numbers, addition and subtraction, multiplication and division.

- Students will learn new units of measurements – decimals and new term - digits;
- Student learn different oral and written counting and define the links between the parts and results based on the arithmetic actions;
- Learn the table for multiplication and division and if appropriate learn subtractions and division;
- Separate the contents of the math problem and continue working with simple math problems;
- Learn more math terms and continue learning new geometric shapes.

During learning of numerations up to 100 students should obtain the following knowledge and skills:

Be able to count the objects by tenth and learn two digit numbers;

Learn the sequence of the numbers while counting of objects;

Be able to compare the numbers;

Be able to read and write numbers up to 100.

Numeration up to “Hundred” is taught in two stages: 1) oral numerations; 2) written numerations.

3. Thousands

Numeration up to 1000 and arethmetic actions consist of the following:

- At this stage numeration of first class numbers, unit class (hundreds, tens, units) that serve as basis for learning multi digit numbers are completed;
- Oral and written counting methods are strengthened;
- Oral methods of multiplication and division are introduced;
- Solve math problems by introduction of new dimensions, learning geometric and algebraic materials continued.

As the result of learning numerations up to 1000 students should be able to:

- Read and write three digit numbers;
- Reconginze that three digit numbers are composed from hundreds, tens and units;
- Recognize the names of the units and write the sum of the additions;
- Apply knowledge about numerations during oral counting.

Methodology of teaching numbers up to 1000 is the same as teaching numbers up to 100. The difference is that one unit is added – hundreds.

Before learning numerations up to 1000 the teachers repeat all math actions/practices with numerations up to 100.

6. Multi digit numbers

Numerations and actions with multi-digit numbers cover the following issues:

- Multi-digit numbers are composed, read and written from units and class;
- Arithmetic actions, mainly using written calculations.

As the result of learning numeration of multi-digit numbers students will be able to:

- recognize the names and sequence of natural numbers up to million;
- name classes (unit class, thousands class, millions class) and the names for each unit within the class (units, decimals, hundreds, thousands, ten thousands);
- read and write any numbers up to million and write them as the sum of additions;
- apply all types of arithmetic actions that they learned.

Learn numerations of multi-digit numbers started from repeating numerations of the numbers up to 1000.

After introduction of numbers 10000, 1000000 students learn the classes: Class 1 – Units; Class 2 – thousands.

Works with numeration table is continued.

Learning outcomes:

- be able to apply sequence of core math teaching course;
- demonstrate several examples of tasks and math problems using multi-digit numbers.

3.3.2. Methodology of teaching arithmetic actions and math problem solving (3 hours)

«Math problems” and “Problem solving” in primary education “Math” course

At the primary math teaching course term “math problem” refer to the statement about text and arithmetic problems.

Students face the following problems while solving text and arithmetic problems:

- 1) **Problems with definition of math problems in primary grades.** Existing grouping do not impact this: “one, two, simple complex math problems” would not help students to solve math problems.
- 2) **Challenges in developing math problem statements.** Short math problem statement does not show its structural connections, showing the statement separately requires abstract thinking skills that make it difficult for weak students. Defining the ways of solving math problems appears at this stage.
- 3) **Challenges in defining correct ways of solving math problems.** Usually the problem solving methods are not reviewed, but the main focus is given to arithmetic actions, they are different from each other.
- 4) **Challenges in solving math problems and developing students thinking skills.** Solving math problems has important role in primary education. It supports development of students’ higher order thinking skills. Regular math problem solving helps students to:
 - Learn different ways of solving life problems;
 - Develop experience;
 - Improve debating skills.

Different math problems are introduced in primary education. The following stages are used during applying math problems:

- 1) Read and understand the meaning of the math problem.
- 2) Search for different ways to solve the math problems.
- 3) Select suitable way to solve the problem.
- 4) Check the results.
- 5) Creative action with the solved problem.

Cognitive activities, individual thinking that are derived from solving math problems serves as basis for defining students' positions in new conditions, finding new methods in solving the math problems and motivation to learn new knowledge and also find ways to obtain this knowledge.

To do so, students have to:

- Read the text attentively,
- Imagine its meaning,
- Write short statement in different ways (drawing the object, picture, diagram)
- Developing a plan,
- Writing the instructions,
- Checking the results
- Develop backward plan etc.

Therefore, solving math problems support development students higher order thinking skills, involve them in cognitive activities and individually solve math and life problems.

Solving math problems also plays significant roles in understanding of math statements; students can develop theoretical comprehension of math actions.

Ways of applying methods to support students' higher order thinking skills are shown in the examples below.

I. Introduction to the meaning of the text

- 1) Working with complex part of the problem start from its meaning. In order to understand the problem every student should not only listen to the text, but read it individually. If students need to think to understand the meaning, thus they should be given enough time (1-2 minutes). While reading the math problem students should focus on the meaning. This will help them to understand the structure of the problem and math terms, and find out the link between volumes, unknowns are very important.
- 2) While working with the text the students should be encouraged to construct meaning of each word and numbers, this will help them to imagine real environment and to solve the problem. Separate the known and unknown values, defining problem statement and question, and writing short statement of the math problem should be taught.

- 3) After oral discussion of the text the meaning should be changed into math and short statement should be created (as plan or picture). This helps to show the links between values visually. During writing short statement the links between the known and unknown numbers are defined. What is clear and what should be defined? What new information is needed to answer the key question?

II. Comprehension of the meaning of math problem

Math problem:

From Dushanbe city and from Balhki district two buses start at the same time, after 2 hours they met. The speed of one bus was 31 km/h, and the speed of another was 33 km/h.

Find the distance between Dushanbe and Balkhi district.

In order to analyze the meaning of the problem the statement should be separated and the questions should be answered.

What is the problem about? (About movement of two buses; their movements are defined by the speed, time and distance.)

What should be found out? (Distance between Dushanbe and Balkhi district)

What information is available about each bus?

- 1) *Buses moving toward each other;*
- 2) *They met each other in two hours;*
- 3) *The speed of the first bus is 31 km/h;*
- 4) *The speed of the second bus is 33 km/h;*
- 5) *The start time of both buses is the same.*

What is unknown in the math problem?

Distance between Dushanbe and Balkhi district.

To understand the meaning of the problem and develop its plan it is necessary to simplify it. To do so the division of its logical parts is very important. As the problem shows the movement, it can be stated as following: "The speed of the first bus is 31 km/h; the speed of second bus is 33 km/h. In two hours buses meet each other. Find out the distance between Dushanbe and Balkhi district"

III. Usually the short statement of the problem can be written in the table. The following table can be developed for this problem:

Speed		Time	Distance
I м.	31 km/h	2 hours	?
II м.	33 km/h		

It is not necessary to write the short statement of the problem again and again, it is better to develop a table.

By creating the table students will improve their skills in defining known and unknown things, selection of the appropriate ways to solve the problem and gradually develop higher order thinking skills.

IV. Finding the ways to solve the problem

One of the well-known ways to find out the ways of solving math problem is to divide text into the separate parts.

Evaluation of the problem can be done through the chain of discussions that can be based on the given statement or question.

During reviewing the given text first additional guiding questions should be defined, that key math problem questions can be presented. Therefore, the question that is derived from the problem text could be understood through additional guiding questions. Students should ask questions in a way that they could differentiate between known and unknown values. This helps them to solve the problem.

V. Analyzing stage

The problem can be solved through analytical method. In order to define the distance between two cities:

1. The speed of both buses are known
2. Time is known
3. What should be done to define the distance?

Main objectives of this method are to segment the text into separate parts in order to understand the problem in more details. This requires students to apply higher order thinking skills.

VI. Checking the result of the problem solving

The results of the problem solving are correct or incorrect responds. While checking the results the conclusion should be made based on the cognitive approach: "Because this problem solved ... it is correct/incorrect".

Learning outcomes:

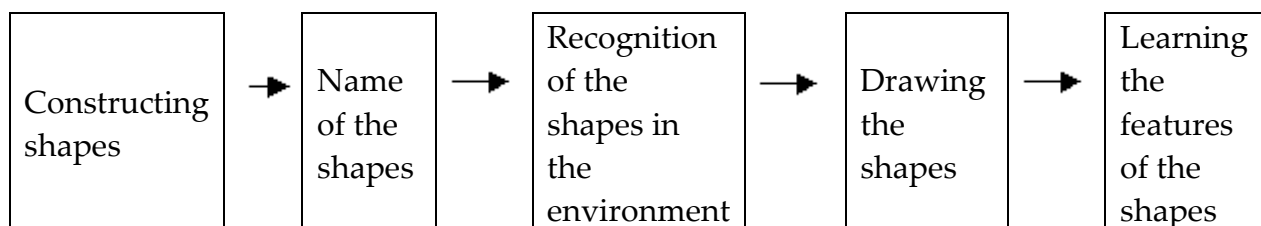
- Be able to implement methods for problem solving;
- Demonstrate some examples of math/life problem solving in accordance with give stages.

3.3.3. Methodology of teaching geometric shapes (2 hours)

The main objectives of teaching geometric shapes in the primary education level are to help students to develop primary understanding of geometric shapes, develop logical thinking skills, and visual imagination skills, recognition of geometric shapes and their parts, create new models from their parts, group geometric shapes, segmenting them into integral parts, and drawing the shapes. The studies of the well-known psychologists Vygotsky L.S., Zankov V.V., Davidov V.V., and others show that learning geometric shapes should be maintained through psychological processes, mainly cognition processes. Cognitive development requires understanding of geometric shapes because

geometric shapes are composed from characters and signs. Characters and signs are samples of the real objects.

Learning geometric shapes are maintained based on the following plan:



Learning outcomes:

- Be able to explain simple features of geometric shapes in teaching math;
- Be able to define the sequence of teaching geometric shapes in different primary grades.

3.3.4. Methodology of teaching units (2 hours)

Units are important math terms that develop visual imaginations, empowers students with practical skills and helps to establish the link between real lives.

The following volumes are taught in primary grades: lengths, square, weight, volume, time etc.

The following procedures are used to introduce students with new unit:

- 1) Students understanding of the given unit is defined (refer to students experience)
- 2) Same units are compared (visual, by different sense, putting the together, using different measurements)
- 3) Introducing the unit and measurement instrument.
- 4) Develop students measuring skills.
- 5) Addition and subtractions of similar units, showing in similar measurement scale (in solving math problems.
- 6) Introduction of new units in close connections with numerations from small units to big units and otherwise.
- 7) Addition and subtractions that represent 2-3 titles of units.
- 8) Multiplication and division of units with numbers.

Teaching of units of measurements (length, time, volume etc.) is given serious attention in primary grades. Students are introduced with the systems of measurements through visual and practical approaches.

Learning outcomes:

- Be able to explain using units of measurements for each grades;
- Be able to define the sequence of teaching units of measurements in different primary grades.

3.3.5. Methodology of teaching data processing (1 hour)

«Data processing» is integrated part of each primary math lessons. Along with discussing the logic of the math lesson students learn to work with data. Students develop their knowledge on “Data processing” through different means (pictures, texts, models, graphs, sight, figures, tables and diagrams).

During solving math problems and doing the tasks use different terms to comprehend the learning issues, they use words, such as “and”, “or”, “then”, “correct/incorrect” etc.

Primary computer skills are introduced from grade 2 (if the schools have enough computers). In grade 1 the learning process is organized in accordance with available resources.

Learning outcomes:

- Being able to apply different methods to help students to develop data processing skills;
- Be able to reflect the requirements of the standards, teacher's guides and textbook supplements on data processing skills.

3.4. Methodology of teaching “Nature” (4 hours)

3.4.1. Teaching observation, experimenting and analyses (2 hours)

Nature always put on new clothes. It changes every year. Along with changing the seasons the nature also changes and this is recognized by children.

Observation in teaching nature plays signature role and develops students' observation, comparison, analyzing skills and helps them making conclusions.

Observation will have learning values when teachers plan, organize and conclude it more carefully. This will impact overall children's development.

Young learners usually face the following observation in schools:

- Observing classroom board (what will be written on it?);
- Observing visual learning aids (Now teachers demonstrate them?);
- Observation based on specific learning instruction.

Observation in mature lessons is one of the integrated parts of learning process. First, two types of observation should be differentiated:

1. Observation of learning objects and events in natural states;
2. During experiments create the learning events to observe the process.

These two types of observation are managed within the class or out of class depending on the school and community conditions.

Learning observation is a type of observation that students act based on the given instructions. Observation questions should encourage students to define features and aspects of the learning subject.

The following observation can be conducted during mature lessons:

- Changing the color of the tree leaves and taking notes in “Nature observation” notebook;
- Temperature check;
- Observe the strongest wind of the year;
- Types of precipitation during seasons;
- Honey bee activities for winter preparations;
- Seasonal and local birds;
- Growing wheat;
- Difference among grass, bush and trees;
- First snowfall of the year;
- Blossoming of plant buds;
- What temperature do the ants start work;
- Birds constructing nests;
- Growing fruits;
- Feeding of chicks by their mother;
- Ecological situation of the community etc.

Observation object should be selected in accordance with seasons. Observations can be managed during a lesson, week, and month or even till the end of school year. Depending of the teaching syllabus requirements and community conditions teachers should define the observation place and objects in advance. During observation students not only see the object, but they learn the features and structures.

Observation of nature improves sense organs and supports development of higher order thinking skills. From other hands observation helps students to analyze and define the links between objects and events.

Students should start special observation notebooks. They will observe and make notes in accordance with the given instructions. The results of observation is noted in “Notebook for Nature Observation” every day, week, month or during a schooling year.

Observation, experiment and analyze are closely linked. In teaching nature without observations it will be impossible to conduct experiment or analyze the results.

Any observation should follow the following stages:

1. Preparation – setting objectives, defining problem and making observation more specific.
2. Focusing student’s attention to the observed object.

3. Research the observation object that will help to adjust the methods of studying the object. Specific level of teacher's support to master the learning material.
4. Final stage – conclusion of the results, strengthening the received imaginations about the object and research approaches, gathering student's ideas regarding completed task.

Conducting an experiment consists of the following stages:

1. Preparation. It consists of two parts:
 - a) for teachers – checking equipment, defining the needed volume, conduct plenary experiment;
 - б) for students – encouraging students to create new specific natural event, setting learning problem and select needed tools, instruct students, defining the topic, objectives and developing plan and presentation of the results of experiment.
2. Conducting the experiment. This stage consist of implementing of the objectives, defining specific tasks, noting the equipment and venue for conducting experiment, instruction and step by step implementation.
3. Reviewing the archived results. Reminding the objectives, equipment, and sequence of the experiment actions, conclusion and theoretical justifications.

Thus observation, experiment and analyze are linked with each other, every experiment is followed by observations.

Using these approaches will increase the level of students learning motivation and develop their observation skills and help them to analyze and make conclusions.

Learning results:

- Be able to explain the definition for observation, experiment and analyses and tgheir role in teaching “Nature” subject;
- Planning and implementing learning activities that support students’ competency development.

3.4.2. System learning in teaching “Nature” subject (2 hours)

Taking into consideration the skills and advantages of system thinking, chines strategies and philosophy system by Konfutsi “Think deeply!” were presented, this means students should be encouraged to be successful.

System thinking skills are important for those who want to work successfully for themselves and for others.

A clear example of system thinking skills not only reflected in the personal life, but also in system actions, as lesson process is also a system. Sometimes when any unknown

and less important aspect will be out of the focus and this can lead students to misunderstanding. Therefore teachers should cover all aspects of learning.

Using system approach teachers would be able to develop the following skills in their students:

- Segment main events during expressing the event and provide evidences;
- Find out main parts and define the relationship among these parts;
- Work with different type of information;
- Changing the evident, predict events in the timeframe.

Human is naturally an observer. Spontaneous observation is true for every person. Children are very good observers, but they can't explain their observations. They remember the event immediately; however, not always derive appropriate conclusions. System teaching helps to correct this natural contradiction. Its objectives to give opportunities for students act as researchers and provide new sights and information. Research based approach helps students practice principles of setting research objectives, define observation and interpretation and find the reasons and the results during learning nature.

Human world is a great system that is composed from different complex subsystems. Therefore it is necessary for students to master system thinking skills.

In order to understand the system thinking skills, we would like to present some examples of non-system approaches and system thinking.

- Dramatic drying of Aral Sea did not happened abruptly, but because of irrigation activities along Sir and Amu rivers. They did not take into consideration wasting of water and used a lot of it. They did not listen to scientific evidences. This is a system error.
- Construction of nuclear power station without thinking of burying nuclear waste is an example of non-system approach.

If people develop their system thinking skills from young ages, there is a possibility to avoid many problems before they occur.

System thinking skills, system analyses and system approach terms are interrelated and show generic methodology.

System approach – learning strategy. Designing learning contents of the schools subjects based on the system thinking helps to visualize the teaching objects (laws, rules, concepts). As the results you can see not only the object, but also subsystems and other integrated systems will be observed. Cooperation and communications between the systems will be noticed and learned. This will result on developing understanding of the world of systems.

Applying different visualization tools (graphs, figures, tables, diagrams) while teaching develops system thinking and imaginary skills.

Using system approach helps to change lesson into small discovery and improves student's research and inquiry skills. Moreover, small successes in understanding the world and person will make the learning results better.

One of the advantages of system learning is conducting research activities. Collecting information, system analyses of learned objects, discovery of laws of system development – all are research principles. This process helps teach students research based methods both during specific subject matter or cross curriculum activities.

Learning outcomes:

- Tell about necessity of system approach in learning;
- Provide definition for term “system”;
- Explain the value of system thinking;
- Be able to show the parts and links of the system,;
- Planning “Nature” lessons using system approach.

3.5. Methodology of teaching “Art and Craft” (4 hours)

“Art and Craft” subject is taught in primary grades and is integration of former “Painting arts” and “Labor Training” subjects.

During art and craft lessons students draw pictures and do craft works based on the drawings. Every lesson divided into two parts: first part – drawing and second part is craft or otherwise. However, the content of the lesson and its organization depends on the topic. Depending on the volume of the work teachers can devote one lesson to the drawings and another lesson to the crafts.

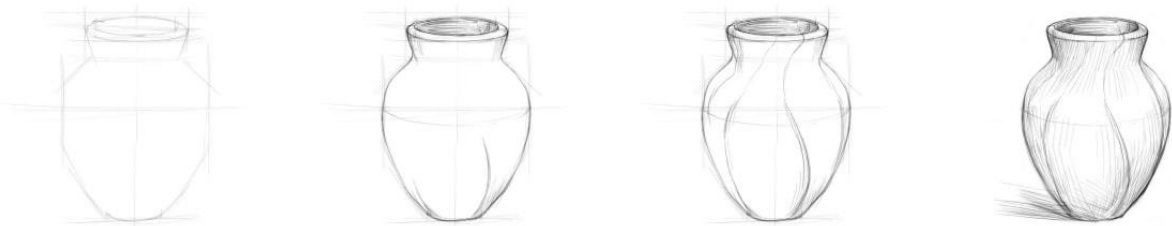
One of the objectives of “Art and Craft” subject is developing students' fiction characteristics, encourage them to create beauty and be creative. Provision of suitable environment, ensuring working instruments and materials, organize targeted and continued learning of “Art and crafts” subject will prepare primary students to master primary technology skills as part of overall secondary education. Students also develop simple labor and drawing skills and are ready for the practical works and life. In accordance with the labor and drawing skills this subject is divided into four following sections:

- Drawing;
- Work with paper and carton;
- Working with natural materials and plasticine;
- Working with yarn and fabric.

3.5.1. Methodology of teaching drawing (1 hour)

Through drawing students improve their imagination and visual thinking skills. Drawing works can be divided into five groups:

Drawing based on observation. While drawing based on observation students' abilities to select colors, balanced and similarities of drawing with the object will improve. During teaching based on observation teachers should try to demonstrate every step on the board using think aloud approach. During this types of the lessons students should try and practice to draw like their teachers. Therefore, drawing should be progressing from simple to more complex actions. While using think aloud approach teachers should use simple and clear language structures and take into consideration children's ages. See steps of drawing the vase.



Drawing based on the text meaning. While drawing based on the read text students draw what they derived from the text. In this type of work teachers should not guide students. This is purely students' creativity. Just the picture should reflect the meaning of the text and students should be able to explain their pictures. Texts can be selected from the textbooks, fictions or folktales.

Retell from the picture. This activity also depends on the level of students' creativity. Teacher can demonstrate a sample oral text based on the picture. Then can divide students into the groups and ask them to develop a story based on the picture. This activity helps students to understand the meaning of the picture.

Free drawing based on the imaginations. In these types of activities students draw pictures based on their imaginations. Teachers can only present the topic of the picture. For example, "Tajikistan in the far future". Students imagine Tajikistan in the future and draw its picture. In this types of the activities teachers should focus at students' imagination and creativity skills, not to drawing skills. It means that even the picture is not good, it should convey new ideas. In addition students should be able to explain drawn picture and these criteria should be taken into considerations by teachers during evaluation of students' works.

Decoration. In these types of the activities different types of drawings and paintings are used as decoration. For example, drawing and/or painting handmade things etc. Teachers explain the advantages of drawing, and teach how to work with different objects, such as cups or teapots. Students create different graphs and decorations.

Learning outcomes:

- Define and explain competencies for drawing;

- Select and apply methods that support development of drawing skills;
- Plan lessons based on the standards, teacher's guide and textbook supplements.

3.5.2. Methodology of working with paper and carton (1 hour)

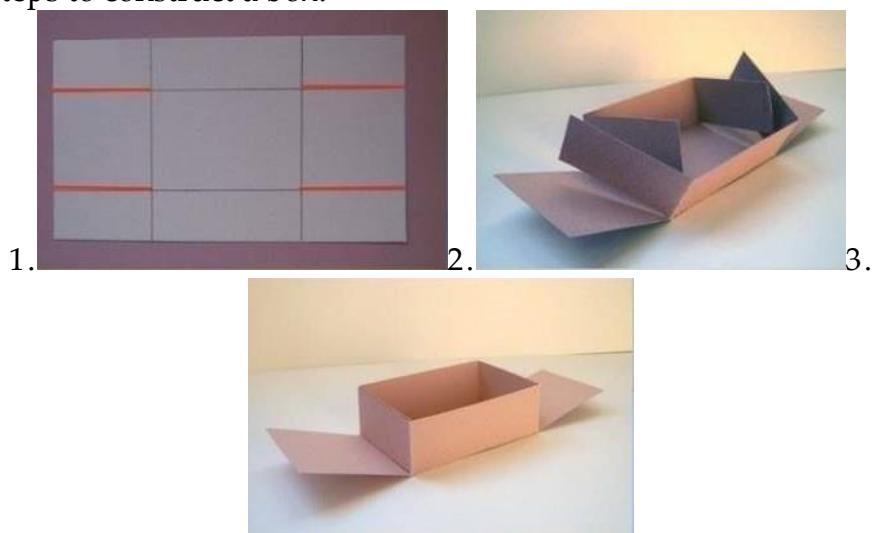
From the first moments of teaching art and crafts we need to give students information on different types of paper, its quality and values. Knowing the characteristics of the paper helps students to manage their handmade things high quality. While demonstrating the types of paper or carton teachers should tell about its features. Carton like paper can be thick, thin, flat, hard, tight, easy or difficult to break, colored etc. providing information about the quality of paper and carton supports development students' imaginations.

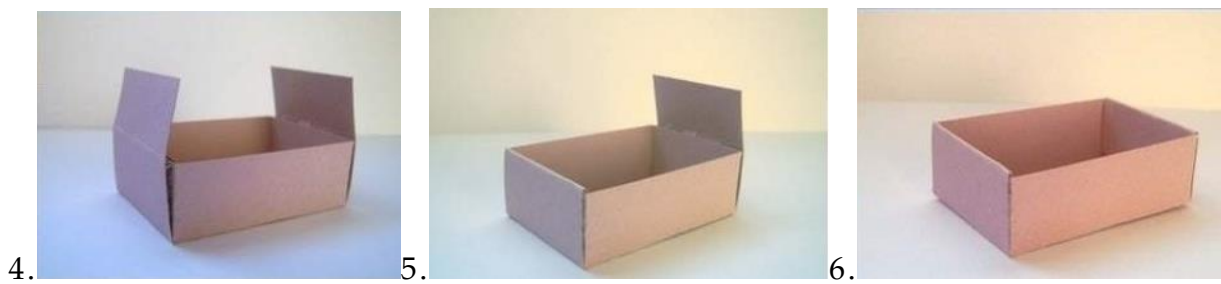
Paper used to print money, books, notebooks, tickets, pictures, maps etc. Wallpaper is used to decorate rooms. Photographer prints photos on the paper. Twisted paper is used to construct flowers. Paper is widely used in different sectors and there are no other materials that have been spread so widely in the worlds.

Students should be informed about how to use paper and carton what safety rules they should follow. The below methods are mainly used while working with paper or carton:

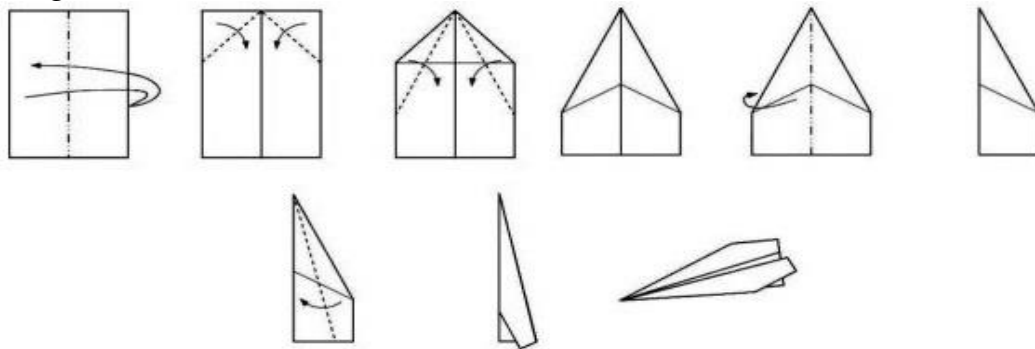
Constructing by cutting and gluing. This type of work would not be possible without glue and scissors. For example, constructing of boxes, models, house, cars etc. To construct these objects you need glue and scissors. Teachers should demonstrate constructions step by step and observe students works, define where students face problems and help them. Teachers also can pair weak students with strong ones so they can help each other.

Sample steps to construct a box:



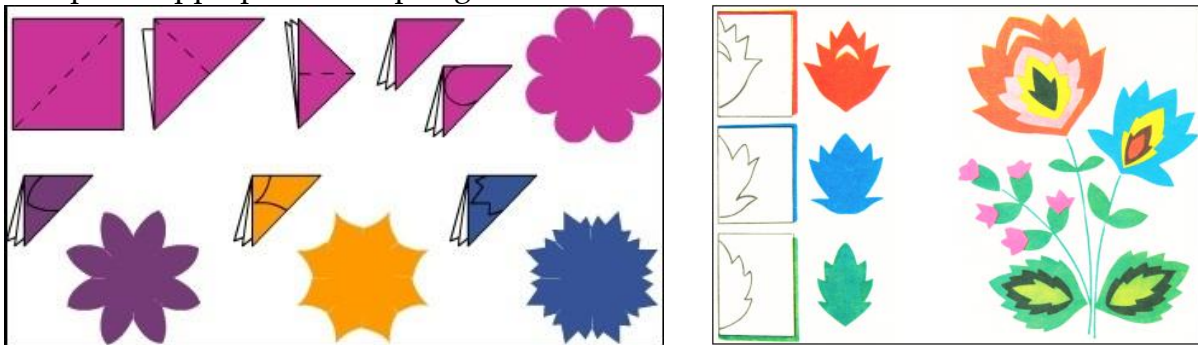


Construction by folding (origami method). In this type of work glue and scissors are not used at all. This activity is mainly managed by folding paper. This activity should be demonstrated by teacher using think aloud approach. See below steps using folding method (origami):



Teachers also should teach students how to construct based on the schemes. Explain the meaning of the lines and dashes.

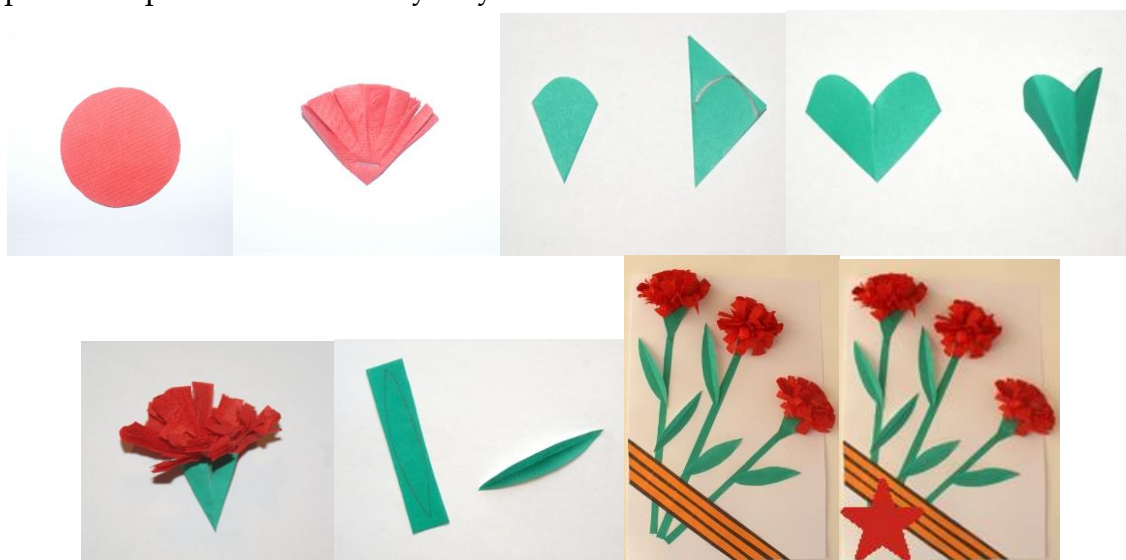
Applique using paper. This type of activity is conducted through cutting and gluing of paper. The difference of this method from previous one is that students do not construct objects; they create beautiful landscape or flowers. It means flowers; leaves are cut from a piece of paper or other material and are glued on another paper. See below example of applique about spring:





Teachers through think aloud method demonstrate and explain steps of creating flowers and leaves that ask students to create something new. The talks should match the student's abilities.

Constructing using different methods. In this type of work all types of actions with paper are used. This activity mainly devoted to designing postcards, toys and other decorative objects using paper and carton. Here students can apply cutting, gluing and folding approaches. Teachers demonstrate the steps using think aloud methods. See below example of the postcard for Victory Day:



Gypsum method. This method is sticking paper with gypsum or glue. Students can use this approach to create jars, models of fruit and vegetables, animals etc. While teaching this method teacher should use think aloud approach and demonstrate every step. This type of activities can be organized individually or in small groups.



- 1) Cut the paper into slips.
- 2) Dunk these paper slips into the water or glue.
- 3) Put the plate up-side down and put the wet paper slips on it.
- 4) Stick wet paper slips on each layer until it becomes thick.
- 5) Keep it until it become dry, than cut redundant parts.
- 6) Decorate paper plate with different pictures.

Learning outcomes:

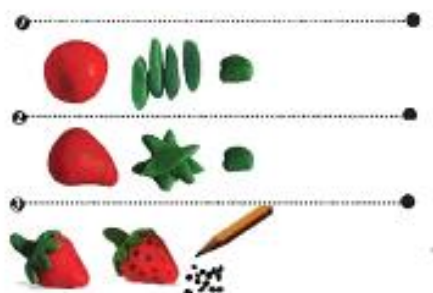
- Select and apply methods that support development of students' competencies in working with paper and carton;
- Plan lessons based on the standards, teacher's guide and textbook supplements.

3.5.3. Methodology of working with natural materials and plasticine (1 hour)

Natural materials are leaves, branches of trees, cone, nut shell, pistachio, corn, stones, etc. These types of work help students to develop their creative thinking skills and motor skills.

Constructing toys and objects from plasticine and natural materials. This type of activity can be used by different approaches. For example, constructing objects, toys, animals, vegetables, fruit etc. (see picture 1).

We can also use only plasticine or we can integrate both plasticine and natural materials. For example, we can create a bird using plasticine we can use the cone as its body and stick other parts by plasticine. (see picture 2).



Расми 1. Сохтан аз пластилин



Расми 2. Сохтан аз пластилин ва маводҳои табиӣ

This type of activity should be demonstrated by teacher using think aloud approach. Teachers can group students and give each group different tasks. One group can create vegetables another fruit etc.

Appliques with plasticine, corn and stones. This method is usually done on the carton. Students can design different landscapes and pictures using any type of corn, plasticine or stones. Teachers demonstrate some types of work to teach students. Than students individually create new landscape or pictures.



Picture 3. Appliques with corn

Picture 4. Appliques with plasticine



This approach can also be used to decorate any object. For examples the vase can be decorated using corn or stones by gluing.

Learning outcomes:

- Select and apply methods that support development of students' competencies in working with plasticines and natural materials;
- Plan lessons based on the standards, teacher's guide and textbook supplements.

3.5.4. Methodology of working with yarn and fabric (1 hour)

Information about the fabric

Methods of preparation of fabric are known from the ancient times. Archeological studies show that our ancestors in XV B.C. were engaged in weaving and preparing cloths.

For many years weaving was handmade and developed in the Middle Ages. The production grew from handmade, simple instruments to more advanced machines.

Raw materials for textiles are: cotton, furs, silk etc. Cloths are also made from chemical elements.

Cloths depending on the raw materials are divided into origin and artificial. Origin group consist of natural products, such as cotton, furs etc.

Cloths are prepared through following process:

- a) the raw material is planted, grow and cleaned;
- б) make yarn;
- в) make ropes;
- г) weave cloths.

Differences and similarities of cloths and paper.

Teachers provide information about differences and similarities between paper and cloths:

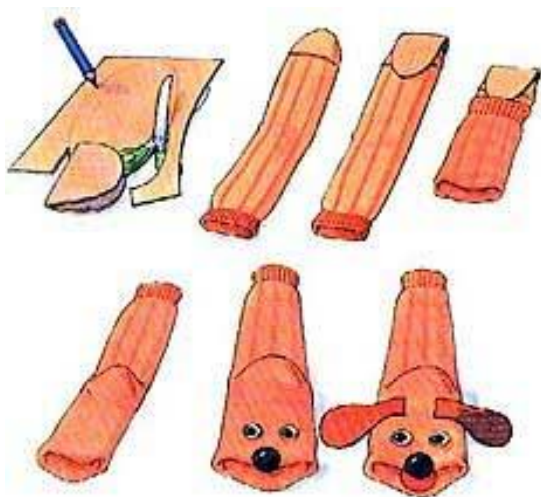
- Both paper and cloth are thin;
- Both paper and cloth consist of fiber, only fiber in paper is mixed and in cloths it is weaved
- Scissors used to work with papers and with cloths;
- Both paper and cloth are materials that can be glued or sew.

Teachers must explain to student's safety rules about using needle, yarn and scissors.

Cutting. Cutting cloth is similar to cutting the paper. While teaching to cut the cloths students should be taught how to use scissors and measure with ruler.

Embroidery. While teaching this method first teach students to draw with pencil on the cloth and then demonstrate and teach how to sew.

Using piece of cloth and old clothes. Teaching primary students reuse pieces of cloth and old clothes will be useful. In one hand it does not require additional resources, in other hand students actively work. For example, a toy can be prepared from the old socks.



Learning outcomes:

- Select and apply methods that support development of students' competencies in working with cloths, paper and other materials;
- Plan lessons based on the standards, teacher's guide and textbook supplements.

VI. Methodology of teaching "Music and Song" (4 hours)

6.1. Teaching singing skills (2 hours)

Teaching and learning music and song is conducted based of different learning theories. Taking into consideration transition to competency based education and introduction of new subject standards where four learning strands are defined as core subject competencies, and where singing is one of the learning strands we also based methodological training on these aspects. It is to mention that competencies for each learning strands are equally developed during the learning process. Covering the learning cycles depend on the teacher's professional skills and the level of students' abilities. Especially to develop singing skills implementation of several cycles are recommended, including, beginning learning the song, listening-introduction to the song, discussion of the meaning of the song (analyzing the important parts), learning the song, singing, performance and concert.

Learning outcomes:

- practically explain the main cycles of developing students; singing skills in primary grades;
- demonstrate one song using methodological aspects;
- review and plan "Music and song" lessons based on the standards, teacher's gudes and supplements to the textbooks.

6.2. Teaching listening to music skills and musical knowledge (2 hours)

One of the important objectives of listening to music is to comprehend the music, develop the culture of listening to music that is necessary to listen to the different music genres.

Three main objectives of the listening to music are supported through teaching music and song. Teachers should pay attention to these objectives:

1. Develop students understanding of the music through practicing listening. Listening to music develop students' abilities to comprehend musical works that have high value. They will be able to feel musical characters, sympathetic expression and kindness, create interest to listen to music and develop motivations through practicing listening skills. Comparison of the meaning of music with the environment also provides students' with opportunities to comprehend the music.
2. *Developing attitudes during selection and listening to music.* It is important for students to have experience of informed selection of music for listening. Informed selection of music and listening of music not only requires feeling, but comprehension of music, features of music, logical development of music, main idea of the music's and its meaning.
3. *Develop practical attitudes/activities to music,* not only during listening, but also while performing small aspects of the musical works or classical heritage.

Effectiveness of comprehension of the music can be defined based on the different methods that are used by teachers. Some methods that help students to comprehend the music are presented below.

Oral methods (retell, explanation, discussion) play specific role in developing students listening skill. Teacher's demonstration also plays important role in this learning process. If teacher's speech is used at appropriate period it can highlight high level of feeling and helps teachers to develop practical skills and recognize the value of listening to music arts.

While organizing listening to music process the following stages should be conducted:

- Teacher's introduction;
- Listening to the music;
- Discussion around listened music;
- Analyzing the music;
- Repeated listening.

Before listening to music usually teachers can tell students about the composer, a story or interesting moment of his/her life or the situation when this particular music was composed (this should not take long time, one or two minutes will be enough).

Musical knowledge is a type of arts that has close link with the life and should be developed. Each subject learning strand, including singing, listening and composing music linked with the musical knowledge, and based on these activities develops primary students' fundamental knowledge about music. Musical knowledge is supported with samples from singing, listening and composing. Teachers should know that theory is the result of the performed music, not otherwise. It means that through performing and/or listening the musical theory is learned more effectively and this should be remembered.

Musical knowledge can be used in different parts of the lesson. Usually it conducted using two approaches: 1) theoretical information about musical knowledge and 2) practical learning of the theoretical materials.

In grade two students start writing some musical conventions, such as notes, music key (sol key or violin). Thus students already mastered reading and writing skills through other subjects.

To improve students' musical knowledge they should be involved in different activities such as:

- Solmization,
- Analyzing after listening to music,
- Musical dictation,
- Rhythmic practices,
- Musical and didactical games,
- Improvisation,
- Playing musical instruments,
- Music and rhythmic movements.

Teachers depending on their abilities select any of above mentioned learning activity and present to students every lesson.

Learning outcomes:

- Be able to explain important issues of listening to music methodology and music knowledge;
- Be able to apply main objectives of the text in listening to music and activities to improve musical knowledge;
- review and plan "Music and song" lessons based on the standards, teacher's guides and supplements to the textbooks.

3.6. Methodology of teaching "Physical Instruction" (4 hours)

Teaching "Physical Instruction" is conducted based on the following methods:

- 1) **Structural:** theoretical, audioligustic;
- 2) **Practical:** practice, repetition, defense, following safety rules and values;
- 3) **Active methods:** individual, sequenced, communicative, connections, independent, encouragement, natural, motivation, retell, discuss, discovery, competitions, debates.

Complete methodological and informational provisions for teaching “Physical Instruction” are learning tools that are integrated part of the teaching and upbringing process. These tools are as following:

- Improving the level of visual aids, and access to learning tools;
- Construct motivation for students cognitive and physical development;
- Find the information sources that helps to effectively use the allocated time and thus provide more opportunities to practice;
- Applying classroom management tools by teachers and coaches.

Selection and use of learning tools are maintained jointly taking into consideration features and specifications of the learning process.

Teaching syllabus is defined as complete document defining the methodological and information aspects of teaching “Physical Instruction”. The syllabus defines the contents of the learning process in accordance with the modern production, improvement in science and techniques. Set of the learning tools should cover the learning materials defined by the syllabus. Overall provision of methodological and informational system means that each session should be supported with necessary learning tools and equipment.

Strengthening the methodological process of teaching and upbringing devoted to the selection of appropriate learning tools and equipment.

Teaching “Physical Instruction” in primary grades requires specific training tools and specific teacher’s teaching skills during introduction with new learning materials, practicing, strengthening and improving skills and abilities.

Teaching process of “Physical Instruction” in competency based education has four key objectives – teaching, upbringing, practicing and development. Complete methodological provisions of the teaching and upbringing process during teaching “Physical Instruction” means effective use of any defined learning tools

The methodological and information provision system is consisting of:

- **Teaching materials:** teaching plan, teaching syllabus, set of unit plans, weekly plans, calendar topic plan, lesson plans, textbooks, visual aids and list of additional literature.
- **Learning tools:** textbooks, training guides, teacher’s guides, set of recommended individual and guided practice.
- **Learning tools for lessons:** natural visuals, equipment, sports tools, learning instruction machine.
- **Teacher’s tools:** specific subject methods, methodological guides, practicing each type of sports.

According to the age specification and students' learning motivations the "Physical Instruction" subject helps students to improve their primary sport competencies, gain more knowledge and apply them when is necessary.

Quality and effectiveness of the "Physical Instruction" lessons depends on overall teachers' preparation.

In order to be ready for the lesson the "Physical Instruction" teacher is obliged to:

- Define the topic of the lesson, set the learning objectives and select appropriate methods;
- Develop questions related to the lesson;
- Select sports tools and equipment;
- Define the place for conducting the lesson;
- Develop lesson plan;
- Practice those actions that students are intended to do during the lesson;
- Whenever is necessary to instruct the head of the classes.

Teachers should present competencies, teaching methods, questions, time, venue, visual aids and lesson steps in the lesson plan. The lesson steps should specifically define what should be taught, what should be introduced and what actions should be practiced?

Teachers should provide students with the list of additional literature and other training guides.

Before the lessons teachers should practice those activities that they are going to teach students, especially in managing the instructions and following the safety rules.

Developing lesson plans is an important action that makes the teacher more successful. Teachers should develop lesson plans in accordance with the methodological requirements of the subject and taking into consideration communication behavior, following sports code of conduct and requirements of instructions and strictly follow them from the first lesson.

Student's introduction with "Physical Instruction" subject starts from the introduction lesson and this lesson should develop students' learning motivations and encourage them to the healthy life. Introduction to the subject requires from teachers specific professional skills, because the subject has specific pedagogical, psychological and physical characteristics.

Briefing during "Physical Instruction" lessons is an important aspect of the lesson that prepares students to the lesson and practicing exercises.

Appropriate organization of teaching "Physical Instruction" in secondary education schools can support rapid development of upbringing, improving students' knowledge and selection of healthy lifestyle.

Learning objectives:

- Select and apply methods that help students to develop students' sports skills;
- Planning and implementation of "Physical Instruction" based on the standards and teacher's guid.

IV. Assessment in competency based education (6 hours)

Assessment in competency based education is used to improve learning and developing students' cognitive skills. It helps to monitor students' achievements. Assessment in competency based education is different from traditional evaluation system. In competency based education teachers are able to work with students individually. Teachers will be able to diagnose students learning skills, first support students and also adjust learning process. Students feel responsible for the learning process and outcomes.

Assessment is an integrated part of learning process. Assessment instruments and methods are defined at the lesson planning stage. Assessment tools are defined after setting lesson learning objectives. Assessment is conducted after completion of learning activities that are aimed at helping students to achieve learning goals. At this stage assessment helps to check students' progress toward achieving learning goals and if the results do not match intending outcomes, teacher adjusts teaching and learning approaches to achieve intended results.

Based on the assessment results further planning of learning process is maintained. When teachers define that students had mastered specific skills or not (this can be defined only through assessment) they plan teaching process accordingly.

4.1. Formative assessment (3 hours)

Formative assessment is assessment for better learning and enhancing pupils' learning culture. Formative assessment allows monitoring pupils' learning achievements and using these achievements as basis for further development. Formative assessment is different from traditional assessment approach. In this type of assessment teachers are able to work individually with each pupil. Using formative assessment tools teachers can identify pupils' weaknesses and help them to develop and organize further steps for development. In other hand pupils take more responsibilities for their learning.

Formative assessment has its characteristics and principles¹.

Assessment is a part of effective planning. During planning a lesson a teacher should identify activities that provide opportunities for both learner and teacher to obtain and use information about progress towards learning goals. The plan should also be flexible to respond to initial and emerging ideas and skills. Planning should include strategies to ensure that pupils understand the goals they are pursuing and the criteria that will be applied in assessing their work. How pupils will receive feedback, how they will take part in assessing their learning and how they will be helped to make further progress should also be planned.

¹ British Association of Education

Assessment focuses on how students learn. The process of learning has to be in the minds of both learner and teacher when assessment is planned and when the evidence is interpreted. Learners should become as aware of “how” of their learning as they are of the “what”. Pupils should answer questions to discuss the learning process with its challenges and successes and how they overcome those challenges. This will help pupils to reflect learning process and develop confidences. After each learning activity teacher asks pupils to reflect the learning processes that they were involved.

Assessment is the central to classroom practice. Much of what teachers and learners do in classrooms can be described as assessment. That is tasks and questions prompt learners to demonstrate their knowledge, understanding and skills. What learner say and do is then observed and interpreted. And judgments are made about how learning can be improved. These assessment practices are as essential part of everyday classroom practice and involve both teachers and learners in reflection, dialogue and decision making.

Formative assessment should be as a key professional skill for teachers. Teachers require the professional knowledge and skills to: plan for assessment; observe learning; analyze and interpret evidence of learning; give feedback to learners and support learners in self-assessment. Teachers should be supported in developing these skills through initial and continuing professional development in colleges and in-service teacher training courses.

Formative assessment should be sensitive and constructive. Teachers should be aware of impact that comments, marks and grades can have on learners’ confidence and enthusiasm and should be as constructive as possible in the feedback that they give. Comments that focus on the work rather than the person are more constructive for both learning and motivation.

Formative assessment should take into account of the importance of learner motivation. Assessment that encourages learning fosters motivation by emphasizing progress and achievement rather than failure. Comparison with others who have been more successful is unlikely to motivate learners. It can also lead to their withdrawing from the learning process in areas where they have been made to feel they are “no good”. Motivation can be preserved and enhanced by assessment methods which protect the learner’s autonomy, provide some choice and constructive feedback, and create opportunity for self-direction. It is recommended to highlight and communicate the better achievements first and then provide feedback to further development. Thus make pupils not to lose learning motivation.

Formative assessment should promote understanding of goals and assessment criteria.

For effective learning to take place learners need to understand what it is they are trying to achieve – and want to achieve it. Understanding and commitment follows when learners have some part in deciding goals and identifying criteria for assessing progress.

Communicating assessment criteria involves discussing them with learners using terms that they can understand, providing examples of how criteria can be met in practice and engaging learners in peer and self-assessment.

Formative assessment helps learners know how to improve. Learners need information and guidance in order to plan the next steps in their learning. Teachers should pinpoint the learners' strengths and advice on how to develop them; be clear and constructive about any weaknesses and how they might be addressed; provide opportunities for learners to improve upon their work.

Formative assessment develops capacity for self-assessment. Independent learners have the ability to seek out and gain new skills, new knowledge and new understandings. They are able to engage in self-reflection and to identify the next steps in their learning. Teachers should equip learners with the desire and capacity to take charge of their learning through developing the skills of self-assessment. This can be achieved by answering the following questions: How? What tools were used to solve the problem? What was challenging? How this challenge was addressed? These questions will help learners to evaluate learning process.

Formative assessment should recognize all pupils' educational achievements. Formative assessment should be used to enhance all learners' opportunities to learn in all areas of educational activity. It should enable all learners to achieve their best and to have their efforts recognized.

Learning outcomes:

- Be able to explain values, aims, objectives, and principles of formative assessment in competency based education;
- Select and apply appropriate formative assessment tools to define the level of students developing competencies.

4.2. Summative assessment (3 hours)

Summative assessment is used for determination of teaching results and pupils' achievements and thereby collection of information about the level of learning of content (text, topic), knowledge or skills. The result of such information is summarized in the

register of attendance, different school progress records, and school-leaving certificate in the type of marks/scores. Depending on the goal, you can conduct final assessment through tests (prepared by teachers) or broad assessment (oral examination, composition, dictation, summarizing academic quarter). Measuring and comparison of pupils' achievements, their conformity with measurable criteria, for instance, with requirements of programs and standards, are the pivots of final assessment.

Summative assessment tools and methods are used to formally prove or note the students' learning achievements. In spite of types of assessment instrument, it can be checklist, project work or text summative assessment is very important to define students learning achievements.

While developing summative assessment tools several factors should be taken into considerations. Including:

Assessment should be valid Validity ensures that assessment tasks and associated criteria effectively measure student attainment of the intended learning outcomes at the appropriate level.

Assessment should be reliable and consistent There is a need for assessment to be reliable and this requires clear and consistent processes for the setting, marking, grading and moderation of assignments.

Information about assessment should be explicit, accessible and transparent Clear, accurate, consistent and timely information on assessment tasks and procedures should be made available to students, staff and other external assessors or examiners.

Assessment should be inclusive and equitable as far as is possible without compromising academic standards, inclusive and equitable assessment should ensure that tasks and procedures do not disadvantage any group or individual.

Assessment should be an integral part of program design and should relate directly to the program aims and learning outcomes Assessment tasks should primarily reflect the nature of the discipline or subject but should also ensure that students have the opportunity to develop a range of generic skills and capabilities.

The amount of assessed work should be manageable the scheduling of assignments and the amount of assessed work required should provide a reliable and valid profile of achievement without overloading staff or students.

Learning outcomes:

- Be able to explain values, aims, objectives, and principles of summative assessment in competency based education;
- Select and apply appropriate summative assessment tools to define the level of students developing competencies.

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