**LECTURE 1-2**

1.Conceptual part, features of contents and procedural characteristic of context-based learning

2.Main theoretical sources of the concept of sign – context-based learning education

3.Heuristic scheme of context-based teaching (Verbitsky A.A.).

4.Heuristic scheme of the bases of developing the textbook.

**Context-based learning** (CBL) has influenced teaching and learning science in many countries over the past decades. Twelve years ago, a special issue on CBL was published in this Journal, focusing on CBL curriculum development. Seven papers in this current special issue on CBL now address the question of how a context influences the learning process. The papers focus on the stimulation of learning STEM subjects within contexts, how the learning process occurs and is enhanced, and the application of contexts in different settings. The approaches, results, and implications of the papers are located in a larger view that considers the question of what must be the case if a student not only engages in the tasks of learning but also succeeds at them. Concerning willingness and effort by learners, the papers draw conclusions about which STEM-related interests of students endure and are ephemeral across a decade, design criteria for maximising students’ situational interest, and students’ engagement with content and context simultaneously. Focusing on the opportunity to teach and learn, the papers reveal how a professional development approach functions to support STEM teachers to develop CBL materials, and how specific scaffolding acts in teaching bring students to more complex reasoning. Regarding good teaching, insights are offered on how metacognitive prompts improve teaching. Centring on the social surround that supports teaching and learning, a comparison of two contexts for teaching the same content reveals which aspects of the contexts move student learning forward. From this mapping, paths toward future research are projected.

**An heuristic approach**

Molich and Nielsen (1990) and Nielsen (1990) have introduced the notion of a set of heuristics that can be used by expert evaluators to identify usability problems in the design of a software package. Typical heuristics include "Visibility of system status: The system should always keep users informed about what is going on, through appropriate feedback within reasonable time", and "Consistency and standards. Users should not have to wonder whether different words, situations or actions mean the same thing. Follow platform conventions" (Nielsen 1994). Research has shown that the use of these heuristics by five expert evaluators will typically lead to the identification of about 75% of the design problems associated with a package (Nielsen 1992).

In an educational context expert evaluators should be teachers; they have the experience and understanding of practical issues to enable realistic predictions of likely classroom uses for software. However, this experience needs to be utilised in a principled framework which takes account of curriculum issues and concerns originating from learning and teaching research. In addition this framework will need to address usability issues and the relationship between usability concerns and educational issues (Squires and Preece 19996). Given this framework teachers can then be considered as expert evaluators as required in the notion of heuristic evaluation advocated by Nielsen. In this context it is proposed that a set of heuristics should be developed for the evaluation of educational software, which would enable experienced teachers to act as expert evaluators.

Although not formally articulated as such, the heuristic approach is becoming evident in the educational hyper- and multi-media evaluation literature. For example, Thornton and Phillips (1996) give eight evaluation questions "to which answers need to be found if multimedia is to improve and become an effective and efficient mainstream learning tool". Their questions are simply expressed enquiries, such as "Do students find it stimulating" and "How can the interactivity be improved". In the following section an embryonic attempt is made to articulate this approach more clearly.

Motivation and attention are very much connected in the world of the classroom, as in all areas of human activity. When learners are motivated, they are much more likely to give a higher level of attention than in situations when motivation is poor. They are also more likely to put effort into the learning process, especially when difficulties are encountered. As a result, and this is fairly obvious, motivation and effort over time, especially if supported by a good teacher, typically results in better learning outcomes. This provides the basis for further motivation, as well as enhancing confidence. Over time increased mastery is likely to be achieved and, many years down the line, even expertise. However, while motivation is recognized as fundamental to learning, there is much debate about how it works and, more significantly, how we as teachers can harness such human energy in the pursuit of educationally desired learning goals.

Similarly, Marzano’s (2007) research is of particular interest in terms of explaining how different aspects of human psychological functioning interact in terms of influencing individual’s motivation to learn. His new taxonomy focuses on three internal systems, all of which are important for learning. These are summarized below:

• The Self-system—This relates to the set of beliefs (and related feelings) the student holds about his or her capabilities, the meaning attributed to the task in hand, along with the perceived likelihood of success

• The Meta-cognitive system—This relates to the higher level self-regulation of the student in terms of being able to monitor and evaluate his or her own thinking process (e.g., setting goals, monitoring progress towards these goals and adapting to difficulties)

• The Cognitive system—This is the system that reasons, and thinks in specific ways (e.g., analyses, compares and contrasts, makes inferences and interpretations, evaluates) with the information at its disposal, to achieve the desired goals. When faced with the option of participating in a new learning project or activity, it is the Self-system which initially decides (whether consciously or subconsciously) to give attention and then activates the Meta-cognitive and Cognitive systems to provide structure and direction for the appropriate learning strategies and skills to acquire necessary knowledge, build understanding and skills to move progressively to goal attainment. He found that teaching strategies that activated the Self-system had greatest effect on student learning, the Metacognitive system the next most effect, and the Cognitive system least, though it is still substantial. What this means is that it is the Self-system that activates the Metacognitive system, which actives the Cognitive system, which creates learning. In the ideal situation for effective learning we would like to get all systems fully ‘up and running’ towards meeting the demands of the desired learning goal. What we now can be reasonably sure of is that without a desire to meet a task’s outcomes, belief in one’s capabilities to attain the necessary knowledge and skill components and a perception of likely success, there is likely to be little effort to commit to task requirements. Quite simply, unless the Self-system is firmly activated, the other important systems are not likely to be working at anywhere near optimal levels In the context of education, the same scenario is likely to play out for a student who is experiencing new perceptions of ‘I am developing a good understanding of this subject’ but this is conflicting with an existing belief of ‘I’m not bright enough to learn this subject’. There will be the same conscious and unconscious processes of conflict resolution.

This heuristic of effective teaching is fundamental to all aspects of planning learning experiences and the practices of teaching. It is also the area in which much creativity can be generated and applied as it offers almost limitless possibilities in terms of how teachers can maximize attention and variation in the learning process.

**Lecture 3-4**

1.Context-based training as implementer of competence-based approach.

2.Essence of competence-based approach.

Nowadays education in a broad sense has been distinguished as the investment in the development of the society. The governments and the wide public are concerned about adequacy of quality of education, training and economic, social efficiency of the means invested in education. The matter of educational contents corresponding to future demands has become a vital issue in educational reforms all over the world. The significance of flexibility, adaptability, mobility, creativity of education and life-long learning in the global, changing world is the focal point of modern national and international discussions concerning higher education and vocational training. In the light of Bologna agreements assuming the academic and professional recognition of the state diplomas within the European space, graduation of qualified specialists, capable of life-long learning and performing professional work in conditions of multicultural environment, the problem of professionally orientated communicative language competence development acquires a special meaning (Jonnaert, Barrette, Masciotra, 2005). The essential contribution to the theoretical analysis of concepts “competence”, “competency”, withreference to young specialists in conditions of a contemporary competitive market, was made by such scientists and researchers as Hymes D., Canale M and Swain M., Bremer C. and Kohl K., Schneckenberg D. and Wildt J., Rychen D. S. and Salganik L. H., Weinert F., Nunn R., Tiļļa I., Maslo I., Maslo E., Bolotov V. А., Shishov S. Е., Novikov А. М., Zimnyaya I. А., Elkonin B. D., and others. In a number of works the concept “competency” is defined as intellectual and personal ability of an individual to practical activities, and “competence” as a contents component of the given ability in the form of knowledge, skills and aptitudes (Zimnyaya, 2003).

According to F. E. Weinert, in the light of terminological and conceptual disorder connected with the concepts *“competence”, “skill”, “professionalism”* and so on, it is necessary to develop an explicit definition of the concept ‘competence’. F. E. Weinert tries to lay a bridge between a psychological-pedagogical concept, on the one hand, and a sociological concept on the other. He defines “competence” as a “slightly specialized system of aptitudes, abilities or skills necessary for achievement of a specific goal. It can concern both the individual abilities and the distribution of abilities within a social group or establishment” (Weinert, 2001).

In I. A. Zimnyaya's opinion, ‘competency always displays the actual competence’ (Zimnyaya, 2003). B. D. Elkonin believes that ‘competency’ is a degree of a person’s involvement into activity (Elkonin, 2001). S. E. Shishov considers the category of competence as a general ability based on knowledge, values, aptitudes, enabling to establish relationship between knowledge and situation, to reveal a procedure (knowledge and action), suitable for a problem.I. Тiļļa defines competence as an individual combination of abilities and experiences stipulated by opportunities to gain these (Tiļļa, 2005).

An invaluable contribution to investigation and implementation of competency – based approach to teaching foreign languages in Kazakhstan was made by Salima Kunanbayeva, the rector of Kazakh Ablaikhan University of International Relations and World Languages. Her work is characterized by immensity, efficiency and in-depth content understanding of modern tasks. She is a leading expert on problems of the content and structure of foreign-language formation in Kazakhstan, the representative of education reforming programs, the coordinator of a number of European Union international programs. Author of more than 100 scientific works. According to her investigation cross-cultural and communicative competences contain a key aspect as linguo-cultural orientation of functionally substantial vector of competences. Within the meaning of component structure “cross-cultural and communicative competences”, in terms of basic theoretical principles “cognitive – linguo-cultural methodology”, we consider it’s fair to point out "cross-cultural-communicative competence" as an independent competence. The structure of “cross-cultural and communicative competences” that we assumed is presented by the following subcompetences reflecting the training system, forming cross-cultural competence-based level of linguistic skills (Figure 1).

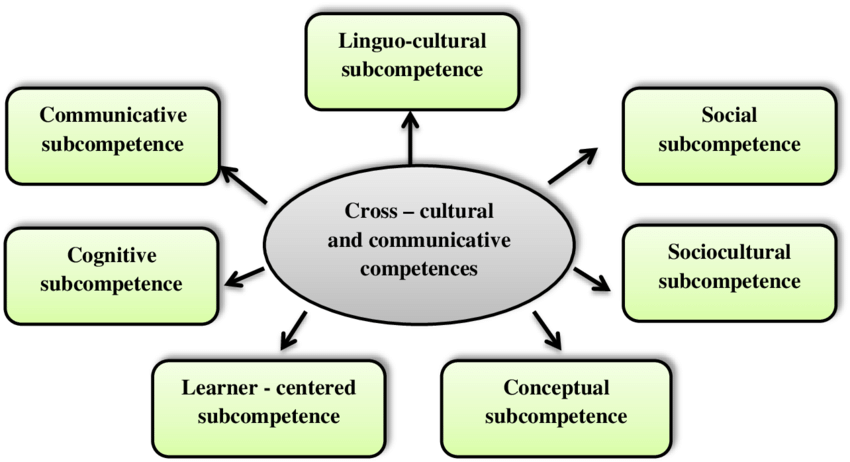


Figure 1 The structure of cross – cultural and communicative competences (adapted from Кунанбаева, 2010)

According to the conception of developing educational system of Kazakhstan on modern lines, such issues as communicative teaching of foreign languages, which are oriented to reach practical effects, are of paramount importance. All branches of professional state education standard involve a foreign subject, which aims to form and develop communicative competence of an expert. Future professional is a graduate, who extensively has a hand in vocational training in a foreign language which covers the spheres of science, technology, production and education. Mastering the communicative competence means for the student not just having a better command of language, but breaking of communicative barriers. The achievement of language competence helps to realize personal and business contacts in order to satisfy professional necessities, self – education and self – improvement.

**Lecture 5-6**

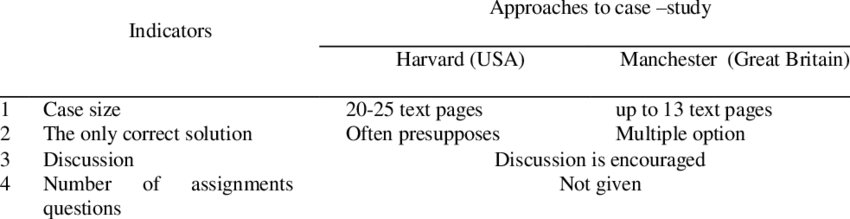
1.Case method and its opportunities in professional training

2.Educational tasks of case technology.

3.Principles of using case technology.

**Case study** is an investigation of practical situations that actually occur in managerial practice. This is a special method of teaching: the connection of theoretical knowledge obtained with the analysis of real practical experience according to the major. Myagkov considers that a distinctive feature of a case study is abandoning linear science development model; the challenge is to interpret the past event and not to place it in a single series with other events as possessing similar features, but to view it as unique, impossible to replicate under different conditions. There are American and European approaches to case studies. Table 2 presents a comparative analysis of these approaches.

Table 2. A comparative analysis of the American and European approaches to case studies

  
 **Case technology** (from the English “case” - case) is an interactive learning technology aimed at the formation of students' knowledge, skills, personal qualities based on the analysis and solution of a real or simulated problem situation in the context of professional activity, presented in the form of a case.

The technology consists in providing students with a description of the situation that contains the problem (contradiction, question) that can provoke a discussion, an active discussion. Students are invited to analyze the situation, understand the problem, suggest possible solutions and choose the best one based on existing knowledge and studying additional sources of information. It is believed that the optimal solution can be one, while there are several alternative solutions.

The use of case technology in training allows the teacher to implement problem-based learning, assess the formation of competencies (ability to work in a team, ability to organize and self-educate, the ability to search, store, process and analyze information from various sources and databases, present it in the required format with the use of information, computer and network technologies, the ability to take into account current trends in the development of engineering and technology in their professional activities news, etc.).

Case technology is aimed at the development of interdisciplinary knowledge and skills, since the solution of a problem situation can be at the “junction” of different sciences, require the application of knowledge from other disciplines and scientific fields. The establishment of interdisciplinary relations takes place in the process of work of students on the case (during its analysis and decision making).

**The case study method**, or the method of specific situations (from the English case - case, situation) is a method of active problem-situational analysis based on training by solving specific problems - situations (solving cases). The case study method is based on the principles of problem-oriented learning. The essence of this method is that a group of students, analyzing a specific situation, should offer solutions to the problem and develop algorithms for further development.  
 Acquaintance with the case, an independent search for a solution (internal monologue in English), the process of analyzing the situation during the lesson (monologic and dialogic speech, prepared and spontaneous, also in English) are all examples of communicative tasks.  
 Cases can be classified based on the goals and objectives of the learning process.

In the case, the following types of cases can be distinguished:

* training in analysis and assessment;
* training in problem solving and decision making;
* Illustrating a problem, solution, or concept as a whole;
* highly structured case in which the minimum quantity is given additional information;
* when working with him, the student must apply a certain model or formula;
* tasks of this type have an optimal solution;

small sketches (short vignetts), containing, as a rule, from one to ten pages text and one or two pages of applications; they introduce only key concepts and with them parsing the student must also rely on their own knowledge;

* large unstructured cases (long unstructured cases) of up to 50 pages -the most difficult of all types of educational tasks of this kind; the information in them is very detailed, including completely unnecessary; the information necessary for analysis conversely, may be absent; the student must recognize such "tricks" and deal with them;
* ground breaking cases, in the analysis of which from students It is required not only to apply the already acquired theoretical knowledge and practical skills, but also offer something new, while students act as researchers.

**Case structure and principles of its construction:**

- The formation of the didactic goals of the case. This step involves locating the case in

the structure of the discipline, the definition of the section of the discipline to which it is devoted

this situation; the formulation of goals and objectives; identification of a “zone of responsibility” for knowledge, abilities and skills of students.

- Definition of a problem situation.

- Building a program map of the case, consisting of the main points that need to translate into text.

- Construction or selection of a model of the situation that reflects the activity; checking her

matching reality.

- The choice of the case genre.

- Writing the text of the case.

- The introduction of the case into the practice of training, its application during training sessions

**Tasks and functions of case technology.**

There is a wide range of educational tasks and possibilities of the case study method:

* acquisition of new knowledge and development of common ideas;
* development of students' independent critical and strategic thinking,
* ability to listen and take into account an alternative point of view, to reasonably express

your opinion;

* acquisition of skills to analyze complex and unstructured problems;

development of common sense, sense of responsibility for the decision, skills to communicate;

* acquisition of skills in developing actions and their implementation;

**Communication skills development:**

 So that students can feel confident in real life situations, they should be placed in the classroom in such conditions under which with a foreign language, they could solve the problems they need.

The use of case technology in English classes pursues two complementary goals, namely:

* improvement of communicative competence;
* linguistic competence;
* sociocultural competence.

**USING THE CASE-METHOD IN TEACHING ENGLISH**

In modern education, the task of paramount importance for the teacher is the quality language training of future specialists: economists, engineers and farmers. Modern educational trends dictate their requirements and approaches to teaching students foreign languages ​​using various interactive methods. At present, the case-method, or case-study, is gaining more and more popularity in the field of foreign language education. The case study method (from the English case - case, situation) is an active simulation method that is based on the analysis of real situations and solving specific problems (cases).

The case method can be used in specific training sessions in terms of examining various situations (cases), describing certain conditions from the life of the organization, a group of people or individuals, thereby orienting students to formulate a problem and search for solutions to it with subsequent analysis

This method of interactive learning can be successfully used in English classes, as it is complex and contains all the main types of speech activity: reading, speaking, writing, listening. In the process of creating a real situation, students have the opportunity to communicate in English with other members of the group and the teacher. The result of applying the case method in the lesson depends not only on the quality of the case (material prepared in advance by the teacher), but also on the students' desire and ability to communicate.  
 Using the case method when teaching a foreign language involves creating a real problem situation, knowing the alternative of its solution, as well as formulating a common goal and principles of group work to create the optimal solution. It is important to create a favorable atmosphere in foreign language classes and to take into account the emotional state of students in the classroom using the case method.

This method has many important educational opportunities. Students not only acquire new knowledge and develop a common horizons, but also learn critically and strategically.  
 The case method is complex and includes the following teaching methods: modeling (building a model of a real situation), system analysis (system representation and situation analysis); thought experiment (mental play-off of the situation); description (the formation of a system of facts for the purpose of inference); problematic method (isolating a problem from case information, choosing an appropriate solution from a variety of alternative options and developing a practical model for its implementation); classification (creating lists of properties, characteristics that make up the situation); game methods (presentation of behaviors of persons acting in a situation); Brainstorming method (generating ideas through a collective discussion of the situation), discussion and / or polemics (exchange of views on the problem and ways of solving it with argument).

Using this method in a foreign language class is an excellent simulator for practicing monologic and dialogical speech. Students develop their ability to argue, to conduct a discussion in English.

The case method teaches, first of all, to put into practice material obtained in English classes. Students have the opportunity to use their personal experience in solving specific problems. It should also be noted that the discussion shows the communicative shortcomings of the student in order to improve language skills.

This teaching method involves a certain level of English language proficiency by students. It follows that the teacher needs to carefully consider the future lesson in order to successfully organize the educational process. I would like to give a concrete example of the use of the case-method in English classes on the basis of an agricultural university.

**Lecture7-8**

**1.Conceptual features, procedural characteristic problem solving teaching.**

**2. Individual approach to students in the system of problem teaching.**

**3. Didactic coordination of problem-solving teaching with other technologies.**

Many instructors have students solve “problems”. But are their students solving true problems or mere exercises? The former stresses critical thinking and decision­making skills whereas the latter requires only the application of previously learned procedures. True problem solving is the process of applying a method – not known in advance – to a problem that is subject to a specific set of conditions and that the problem solver has not seen before, in order to obtain a satisfactory solution.  
 Problem solving as a method of teaching has long been recommended by leading educators. Research substantiates its advantages, and contains many descriptive elements of what should be included in the problem-solving process.  
 The literature, however, is vague as to the systematic arrangement of these elements so that a classroom teacher could be specifically guided in how to conduct a class via the Problem-Solving Approach. Even with all its publicity the average-teacher would have difficulty if asked to define this classroom teaching method.

A teacher should know the extent of both his responsibility as well as that of students in order to effectively plan and execute a problem-solving experience.

Below you will find some basic principles for teaching problem solving and one model to implement in your classroom teaching.

**Principles for teaching problem solving**

* ***Model a useful problem-solving method.* Problem** solving can be difficult and sometimes tedious. Show students by your example how to be patient and persistent and how to follow a structured method, such as Woods’ model described here. Articulate your method as you use it so students see the connections.
* ***Teach within a specific context.*** Teach problem-solving skills in the context in which they will be used (e.g., mole fraction calculations in a chemistry course). Use real-life problems in explanations, examples, and exams. Do not teach problem solving as an independent, abstract skill.
* ***Help students understand the problem.*** In order to solve problems, students need to define the end goal. This step is crucial to successful learning of problem-solving skills. If you succeed at helping students answer the questions “what?” and “why?”, finding the answer to “how?” will be easier.
* ***Take enough time*.** When planning a lecture/tutorial, budget enough time for: understanding the problem and defining the goal, both individually and as a class; dealing with questions from you and your students; making, finding, and fixing mistakes; and solving entire problems in a single session.
* ***Ask questions and make suggestions.*** Ask students to predict “what would happen if …” or explain why something happened. This will help them to develop analytical and deductive thinking skills. Also, ask questions and make suggestions about strategies to encourage students to reflect on the problem-solving strategies that they use.
* ***Link errors to misconceptions.*** Use errors as evidence of misconceptions, not carelessness or random guessing. Make an effort to isolate the misconception and correct it, then teach students to do this by themselves. We can all learn from mistakes.

An important goal of foreign language teaching is to teach the student to apply their knowledge in everyday life. The motivation in this case is very important, because only well-motivated student is capable of learning efficiently, regardless of the marks it receives for a well-done work, regardless of the opinions of others about himself and his knowledge. A well-motivated student starts to develop a desire to acquire knowledge independently without external pressure and then apply it in practice. But there are not enough students with a high level of motivation, with a desire to independently acquire knowledge. To address this issue we identified the most significant methods to increase motivation of learning a foreign language. We can highlight several factors that increase motivation: students’ level of concern about achieving success, positive emotions in the process of learning a foreign language, feeling of success, cognitive interest, positive results, internal and external motivation.

Great attention should be paid to the development of cognitive interest of students in learning foreign language. There are two ways of developing this quality. *The first* is to attract materials from the life of the student, using examples from his own life, the positive reviews of his work in class and his abilities*. The second* way is to interest – to highlight something new and interesting from a vast amount of materials. Nothing can remain new for a long time, the teacher should manage to use attention reflex in order to teach a student a material during this time and so that this material began to have an independent significance for him. The knowledge of results is a kind of a feedback, which helps students to learn about their successes or failures. Motivation will increase if students know the results of their work, specified information about what needs to be changed or fixed, modified. The positive results particularly encourage and stimulate them. External and internal motivation, taking into account all the above factors, is able to improve the quality of education.

The teacher needs to be aware of the incentives that resonate with the motivational factors and that may stimulate learners. Such incentives include*: the incentive of trust, the incentive of interest (for students’ tasks to acquire the interesting status*, they should be easy to understand for both strong and weak students), *the incentive of importance* (the teacher should highlight all the important points, pointing to their importance in a particular task), *incentive of control* (ensures a stimulating learning situation, encouraging students to systematically prepare their tasks, follow all the teacher’s instructions, exercises will*), incentive of liability* (creates a responsible attitude to learning, the teacher can awaken this responsibility assigning the student some responsibilities for group work), *incentive of time* (the students should be limited in time to develop a “sense of time”). The simultaneous use of incentives makes the learning process interesting, and educational working process – productive. Developing the motivation, the teacher can move from intuitive and random selection of pedagogical techniques to usage of motivational factors in learning activities.

For successful academic work in teaching a foreign language it is important to have an idea about the real level of development of independence, motivation, knowledge and skills of students in this subject. The teacher should know and take into account the levels of motivation:

– **high** – characterized by a high educational activity, the desire to do all the tasks given, appears less dependent on strict requirements and standards while answering questions, such students study with pleasure, they are driven by internal motives;

**– intermediate** – positive attitude towards school, but the school attracts more on the extra-curricular side, such children feel good at school but often go to school to socialize with friends and students; internal motivation of these students are formed to a lesser degree than students with high level of motivation;

– **low** – students with low motivation attend school reluctantly, prefer to skip classes, have significant difficulties in learning activities, internal motivation is almost not formed.

Components of a complex process of learning a foreign language is extra-curricular and classroom learning activities. While extra-curricular (home) work is a necessary preparatory stage of the language, classwork is a speech stage that logically concludes the formation of speech skills.

In terms of learning a foreign language outside the language environment, well-organized understandable reading can give a great psychological effect – give students a sense of progress and success in a foreign language acquisition. It also creates an opportunity to experience reading as a real speech activity in school – mediated communication, literature and culture of the people, the language of whom the students acquire. Such reading requires a deeper consideration, it is able to make the desired changes to the hierarchical structure of motivational sphere of educational activity of students of a foreign language acquisition, to the development of personal qualities of students, because reading “sharpens the intellect and sharpens the senses”. The success in this activity, in particular, depends on how pedagogically and methodologically reasonably will be formulated the functions and tasks of foreign language teaching and the ways of their implementation.

Thus, in teaching a foreign language the teacher must develop the cognitive interest of students, choose adequate didactic objectives and the most effective methods of teaching, great importance should be given to the selection of educational material, using an individual approach.

**Didactic coordination of problem-solving teaching with other technologies.**

More generally in education, it can be useful to define problem broadly — as any situation, in any area of life, where a teacher have an opportunity to make a difference, to make things better — so problem solving is converting an actual current state into a desired future state that is better, so a teacher have "made things better."  Whenever a teacher are thinking creatively-and-critically about ways to increase the quality of life (or to avoid a decrease in quality) for himself and/or for others, a teacher are actively involved in problem solving.   
 The use of multimedia teaching aids in English lessons and in extracurricular activities increases the cognitive activity and motivation of students, provides an intensification of the learning process and independent activity of students. The latest multimedia technologies help you quickly and effectively master the perception of oral speech, put the correct pronunciation and teach fluent speaking. Interactive programs and games help create real communication situations, remove psychological barriers and increase interest in the subject. Let us call the most frequently used elements of ICT (information computer technology) in the educational process: - electronic textbooks and manuals, demonstrated using a computer and multimedia projector; - interactive whiteboards; - electronic encyclopedias and reference books; - simulators and testing programs; - educational resources of the Internet; - CD-ROMs with paintings and illustrations; - video and audio equipment; - interactive maps and atlases; - interactive conferences and competitions.

***Let us dwell on the most commonly used ICT in English lessons:***

1**. Internet resources.** The possibilities of using Internet resources are huge. The global Internet creates the conditions for obtaining any information necessary for students and teachers located anywhere in the world: news, regional material, foreign literature, etc. In English lessons, the Internet helps to solve a number of didactic problems: to form reading and reading skills using materials from the global network; improve writing skills of students; replenish the vocabulary of students; to form a steady motivation for students to learn a foreign language. In addition, the work is aimed at exploring the possibilities of Internet technologies for expanding the horizons of students, establishing and maintaining business ties and contacts with peers in English-speaking countries.

**2.Using a projector.** The advantages of the projector over traditional visual aids are related to providing visibility as an important component of teaching methods. A projector is a device through which a static image from a transparent A4 film is transferred to a large screen. The image on a transparent film serves as a teaching aid and can be prepared using a computer, a copy machine or using a felt-tip pen. What are the advantages of a projector, unlike traditional visual aids? First, image sizes may vary depending on the distance from the projector to the screen. In addition, the image is highlighted and perceived more easily. Secondly, the teacher independently sets the time for displaying the image, turning the projector on and off. Thus, images appear on the screen only when necessary. Thirdly, the teacher can easily change the slides, and therefore, the number of illustrations for the material presented can be quite large. This contributes to the maximum correspondence between the lecturer's stories and visual representation.

**3. Electronic textbooks.** The advantages of electronic textbooks are their mobility, accessibility of communication with the development of computer networks and the adequacy of the level of development of modern scientific knowledge. On the other hand, the creation of electronic textbooks also contributes to the solution of such a problem as the constant updating of information material. They can also contain a large number of exercises and examples, and various types of information are illustrated in detail in dynamics. In addition, with the help of electronic textbooks, knowledge is controlled - computer testing. The use of modern technologies in education creates favorable conditions for the formation of the personality of students and meets the needs of modern society. Using information resources of the Internet, integrating them into the educational process, it is possible to more effectively solve a number of didactic tasks in the lesson English, namely: a) to form reading and reading skills, directly using network materials of varying degrees of complexity; b) to improve listening skills based on authentic audio texts of the Internet, also prepared accordingly by the teacher; c) to improve the skills of monologic and dialogical utterances on the basis of problematic discussion presented by the teacher or someone from the students, network materials; d) to improve writing skills, individually or in writing, writing answers to partners, participating in the preparation of essays, essays, and other epistolary products of joint activities of partners.

**The problem-solving approach** is supposed to give rise to doubt or uncertainty; it is a form of inquiry learning. It includes a task, question or inquiry that is to be investigated applying the existing knowledge to a new or unfamiliar situations. Social-leaning, cognitive-exploratory, peer learning make approach possible. Problem-solving approach creates a learning environment that fosters the development of the learner’s foreign language skills and abilitiesю Choosing tasks, a teacher should bear in mind that they should correspond to the learners’:  
-        intellectual abilities;  
-        individual peculiarities and age interests;  
-knowledge of the subject.  
Moreover, a task should be a meaningful, open-ended problem, promoting ideas and knowledge sharing, and should further insight into the subject being taught. The teacher should monitor the learning process and give advice as necessary. He should serve as a behavior driver and model, thinking aloud with students. Researches highlight the following benefits of this approach, it:  
-        stimulates interest in cognitive activity;  
-        fosters persistence for goal achievement;  
-        develops concentration;  
-        exercises capacity for work;

In general, in the process of project training, the continuity of training and education is traced. The introduction of information technology in training greatly diversifies the process of perception and processing of information. Thanks to the computer, the Internet and multimedia tools, students are given a unique opportunity to master a large amount of information with its subsequent analysis and sorting. The motivational basis of educational activity is also expanding significantly.

**Lecture 9-10.**

**1. Methods of problem-solving teaching.**

According to Ormond (2006) problem solving is using existing knowledge and skills to address an unanswered question or troubling situation, while problem based learning is approach to instruction in which students acquire new knowledge and skills while working on a complex problem similar to those in the outside world (Ormond, 2006). Problem solving was introduced to education as early as ancient times. Socrates, in particular, was famous for applying it (History… ). Later it was almost totally abandoned and revived only in the 1960s. Recently it has been widely studied and popularized (Martinez, 1998; Botti, J.A. & Myers, R., 1995, Simon, 1980), especially for teaching mathematics and science at school and at university. However, surprisingly for us, problem solving has not been very widely applied towards either teacher training or teaching foreign languages.

Problem based learning seems to be equivalent or slightly better than other models of instruction for producing gains in general academic achievement and for developing lower-level cognitive skills in traditional subject matter areas.According to Finkle and Torp (1995:1), “*problem-based learning* is a curriculum development and instructional system that simultaneously develops both problem-solving strategies and disciplinary knowledge bases and skills by placing students in the active role of problem-solvers confronted with an ill-structured problem that mirrors real-world problems.”

Foreign language as a school subject is skill oriented. Thus, problem solving approach applied to it implies different components than when it is applied to subjects that are knowledge oriented (e.g. history). We believe that problem solving in teaching a foreign language means:

- avoidance of giving ready-made answers in the process of presentation of new grammar and vocabulary, involvement of students in the formulation of grammatical rules and elicitation of vocabulary meanings from the given examples,

- ability of students to overcome independently the language problems arising in the process of communication,

- discussing / solving non-professional, everyday life problems through communication in the foreign language, - discussion of texts dealing with problems,

- discussing / solving professional problems through communication in the foreign language.

***Problem solving teaching*** usually is understood as such organization of lessons which assumes creation of problem situations under the direction of the teacher and active independent activity of pupils to solve it.

Problem-solving teaching approaches deal with «investigations, open-ended questions, and modeling tasks, as well as providing opportunities for students to pose questions and explore new ideas.

Problem-solving teaching approach consists in the creation of problem situations, in comprehension, acceptance and the permission of these situations during joint activity of students and teachers, at optimum independence of the first and under the general directing management of the last. Problem-solving teaching joints together process of teaching with processes of perception, research, creative thinking.

**Problem-solving teaching can promote realization of two purposes:**

The first purpose — to generate necessary system of knowledge, skills at

The second purpose — to reach a high level of the development of students, development of ability to self-teaching, self-education.

**Both these problems can be realized with the big success in the course of problem-solving teaching because mastering occurs during active search activity of pupils.**

It is important to note one more of the important purposes of problem-solving teaching is to generate special style of mental processes, research activity and independence of pupils.

**The feature of problem-solving teaching consists that it aspires to use psychological data about close interrelation of processes of teaching, cognition, research and thinking.**

Problem-solving teaching is therefore an approach in which teachers see themselves as guides, listeners, and observers rather than authorities and answer givers. There is the shift from teachers to student as an active participant of education (fig. 1). If to speak about traditional system of teaching, teacher has the leading role: he explains prepared information; students only perceive it. But for problem-solving teaching student has the main role: he works mainly himself to identify problem and ways of solving it; teacher is facilitator who gives only directions.

Figure 1. The shift from format teaching to format learning

Problem solving incorporates multiple means of action and expression and engagement and providing options for sustaining students' efforts by varying the demand of challenges and emphasising the importance of the objectives.

          Activities like the following generally have the potential to become effective tasks:

***Listing and/or brainstorming***  
A teacher can list people, places, things, actions, reasons, everyday problems, things to do in various circumstances etc.  
• (1) In pairs, agree on a list of four or five people who were famous in the 20th century and give at least one reason for including each person; Can a teacher remember his partner’s busiest day?  
• (2) On his own, make a list of all the things he/she did. Then check with his partner. Were there any things a teacher forgot?  
***Ordering and sorting***  
This can be sequencing, ranking, or classifying.  
• (3) In pairs, look at his list of famous people. Which people are most likely to remain popular and become 20th century icons? Rank them from most popular to least popular, and be prepared to justify his order to another pair.  
• (4) Look at the four pictures. They are mixed up. Work in pairs. Put the four pictures in a sequence so that they tell a story. Prepare to tell his story to another pair.  
***Matching***  
A teacher can match captions / texts / recorded extracts to pictures; short notes or headlines to longer texts, e.g. news items.

**2.Research, heuristic, method of problem statement**

**A heuristic method** is an approach to finding a solution to a problem that originates from the ancient Greek word ‘eurisko’, meaning to ‘find’, ‘search’ or ‘discover’. It is about using a practical method that doesn’t necessarily need to be perfect. Heuristic methods speed up the process of reaching a satisfactory solution. Previous experiences with comparable problems are used that can concern problem situations for people, machines or abstract issues. One of the founders of heuristics is the Hungarian mathematician [György (George) Pólya](https://en.wikipedia.org/wiki/George_P%C3%B3lya), who published a book about the subject in 1945 called ‘How to Solve It’. He used four principles that form the basis for problem solving.

Pólya describes the following four principles in his book:

***First principle of the heuristic method- understand the problem***

It’s more difficult than it seems, because it seems obvious. In truth, people are hindered when it comes to finding an initially suitable approach to the problem. It can help to draw the problem and to look at it from another angle. What is the problem, what is happening, can the problem be explained in other words, is there enough information available, etc. Such questions can help with the first evaluation of a problem issue.

***Second principle – make a plan***

There are many ways to solve problems. This section is about choosing the right strategy that best fits the problem at hand. The reversed ‘working backwards’ can help with this; people assume to have a solution and use this as a starting point to work towards the problem. It can also be useful to make an overview of the possibilities, delete some of them immediately, work with comparisons, or to apply symmetry. Creativity comes into play here and will improve the ability to judge.

***Third principle – carry out the plan***

Once a strategy has been chosen, the plan can quickly be implemented. However, it is important to pay attention to time and be patient, because the solution will not simply appear. If the plan doesn’t go anywhere, the advice is to throw it overboard and find a new way.

***Fourth principle – evaluate and adapt***

Take the time to carefully consider and reflect upon the work that’s already been done. The things that are going well should be maintained, those leading to a lesser solution, should be adjusted. Some things simply work, while others simply don’t.

There are many different heuristic methods, which Pólya also used. The most well-known heuristics are found below:

1. Dividing technique

The original problem is divided into smaller sub-problems that can be solved more easily. These sub-problems can be linked to each other and combined, which will eventually lead to the solving of the original problem.

2. Inductive method

This involves a problem that has already been solved, but is smaller than the original problem. Generalisation can be derived from the previously solved problem, which can help in solving the bigger, original problem.

3. Reduction method

Because problems are often larger than assumed and deal with different causes and factors, this method sets limits for the problem in advance. This reduces the leeway of the original problem, making it easier to solve.

4. Constructive method

This is about working on the problem step by step. The smallest solution is seen as a victory and from that point consecutive steps are taken. This way, the best choices keep being made, which will eventually lead to a successful end result.

5. Local search method

This is about the search for the most attainable solution to the problem. This solution is improved along the way. This method ends when improvement is no longer possible.

Аction research as a tool to elicit information about the students’ language and cultural background, motivation, gender, age, preferences, learning strategies, and styles so that teachers can provide strategy instruction that the concerned students need. Through action research, the teacher can test different theories of language teaching in his class to see if they work and finally get feedbacks from the students. Action research can provide a tool for the teacher to make a link between his theoretical and practical knowledge advocating a more active role for the teacher and, hence, a step toward teacher autonomy.

Individually guided activities help the novice teachers experience expertise at the individual level. For example, as a reliable method to receive feedback from the students, questionnaire can provide the teacher with immediate, first-hand information about the quality of his teaching and the need to change or improve his teaching style and behavior. Action research is an effective way to develop teacher’s professionalism and as a site for self-exploration and self-improvement. The  following methods can be suggested ways to embark on action research:  
(1) using questionnaire, surveys, and interviews to collect data about learning strategies, styles, attitudes, etc.  
(2) identifying research questions;  
(3) exploring the learners’ sociocultural and linguistic knowledge to exploit for learning; and  
(4) engaging in self-evaluating.  
 Involvement in a development process and study groups serve as two models of professional development which provide educators with a chance to gain new knowledge and expertise as well as opportunities to deal with educational problems by forming groups, having collaboration with peers, conducting research, or engaging in discussions. These types of professional development look upon the school setting as learning communities where teachers and learners are jointly involved in learning.

**Lecture 11-12**

1. **Teaching foreign languages on the basis of problematic approach**
2. **Three levels of problem-solving tasks& linguistic, communicative, spiritual and informative**

Problem solving is an instructional method or technique where by the teacher and pupils attempt in a conscious, planned and purposeful effort to arrive of some explanation or solution to some educationally significant difficulty for the purpose of finding a solution.

Students are presented with problems which require them to find either a scientific or technological solution. It is a student-centered strategy which require students to become active participants in the learning process.

Problem solving is a teaching strategy that employs the scientific method in searching for information.

Problem solving: arriving at decisions based prior knowledge and reasoning

**DEFINITION** • A systematic approach to defining the problem and creating a vast number of possible solutions without judging these solution. • “Problem solving is a cognitive processing directed at achieving a goal where no solution method is obvious to the problem solver”.

• **Yokam & Simpson** define it as “A problem occurs in a situation in which a felt difficulty to act is realized. It is a difficult to clearly present and recognized by thinker”. • According to Gates “ A problem exists for an individual when he has a definite goal he can not reach by the behaviour pattern which he already has available” • According to skinner, Problem solving is a process of overcoming difficulties that appears to interfere. In a problem solving the entire subject matter is organized in such a manner that it can be dealt with through the problems identified during the study. SKINNER • The problem solving is a process of overcoming difficulties that appears to interfere with the attainment of goal. It is a procedure of making adjustment in spite of interferences.

**•PURPOSE**

• Train the students in the act of reasoning.

• Gain and improve the knowledge

• Solve puzzling question

• Overcome the obstacles in the attainment of objectives.

**STEPS OF PROBLEM SOLVING**

1. **Formation and appreciation of** problem The nature of the problem should be made very clear to the students so that they can understand the actual solution for the problem.

2. **Collection of relevant data and information** • The students should be stimulated to collect data in a systematic manner full co- operation of the students should be secured. The teacher may suggest many points to them. Like extra books for read, organise a few educational trips together the relevant information.

3. **Organization of data** • The students should be asked to sift the relevant material from the superficial one put in a scientific way.

4. **Drawing of conclusion** • After the organizing data discussions should be arranged collectively and individual with each student so that essential thing is done by the students themselves and that their educative process provides the particular solutions. “Care should be taken that judgement is made only when sufficient data is collected.”

5. **Testing conclusion** • No conclusion should be accepted without being properly verified. The corrections of the conclusion must be proved.

**ESSENTIAL FEATURES OF THE PROBLEM**

• The problem should be meaningful, interesting, and worthwhile for children. • It should have some correlation with life. • It should have some correlation with other subjects if possible. • It should arise out of the real needs of the students. • The problem should be clearly defined. • The solution of problem should be found out by the student themselves working under the guidance and supervision of the teacher.

**Levels of problem-solving learning**

Problematization acts as the mechanism of problematicity creation. Such a problematization supposes a conscious (if needed) inclusion of a certain difficulty (practical or theoretical), which forces the student to overcome it, thereby activating his/her mental activity. With respect to the question under study what is stated above in a generalized form can be summarized in the following table.

**Levels of foreign-language problem teaching**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Level** | **Problem** | **Problematization (existence of the problem)** | **Problem situation (level)** | **Problem task** |
| **I**  **Linguistic level** | **linguistic** (differences in phonetics, grammar, vocabulary in the comparable languages) | linguistic differences | **means** (at the linguistic level) | **collation**  of specimens at the language level of different cultures |
| **II**  **Speech level** | **communicative** (differences and similarities in the methods of discourse) | a barrier on the way of communicative aim achievement | **method** (at the speech level) | **collation**  of verbal behavior styles in different cultures |
| **III**  **Spiritual cognitive level** | **spiritual** (perennial problems of morality, right and wrong, et cetera) | axiological confrontation, conflict | **spiritual values** (at the level of thought, soul) | **collation**  of universal values in the specimens of folklore of different cultures |

1. **At the linguistic level** a means of formation/formulation of a thought, i.e. a language is not known. Therefore this level includes linguistic problems correlated with the levels of language: phonetics, vocabulary, grammar. An example is problem-project tasks on the search of analogies and similar phenomena in the following languages: Tatar, Russian and English. Below there is the independent unpublished researches by D. M. Hayrullina (2015), who has found similarities between English and Tatar lexical alanogues. For example, it is often used in both languages «a baby» - a child. In the Tatar language it sounds almost the same and has the same meaning: бәби(әй) In this case even comments are not required. The English word «bad» - part of the бәдбәхет, formed by joining two roots of the opposite sense: бәд is bad, but in the modern Tatar language it is not used separately, but бәхет is happiness. This is one of ways of word-building in the Tatar language. «Basic» is the main. In the Tatar language there is the word базык that means solid, reliable, steady, it’s often used as a sign of man, his/her physical abilities. «Be» means to exist. It’s a similar word, which is now an obsolete word биthat meant in the past a noble and respected man, a big boss, an officer, a tartar prince, it is possible that a well-to-do man. To think it deeply a noble and respected man’s existence seems to be more solid and reliable.
2. **At the speech level** a method of forming and formulating of a thought, i.e. speech is not known. A speech level has communication problems, correlated with the levels of speech activity: speaking, listening comprehension, reading, writing, translation. An activity for training of lexical and grammatical material contained in the socalled equivalent proverbs and sayings precedes the development of skills. The comparison of such proverbs and sayings in Bashkir, Russian and English is very useful in terms of expanding of linguistic horizons acts For example, give your students the task to answer the question: Why do the Russian and the Bashkir say «Цыплят по осени считают» «Себеште көҙ һанайҙар», the British - “Don’t count your chickens before they are hatched”? During the lessons as well as during the extra-curricular activities students can be proposed puzzles, games and other entertaining tasks, which contain the texts of proverbs. As a rule, a communicative task consists in the following – one of the components of the communicative events - the purpose of communication, dialogue participants, circumstances (place, time) of communication should be unknown.
3. **At the spiritual-cognitive level** where the object is unknown, i.e. the idea, content, complex subject – communicative tasks in problem situations can be applied, which have spiritual-cognitive value. Even without speaking about the content, one can say that a comparison of the native Russian and English languages is a very important source of problematicity. That is why G.I.Gontar uses the principle of "contrast" as a result of collating and studying three contrasting languages and three contrasting cultures while creating problem situations. Indeed, the principle of contrast can be applied in studying a foreign language in relation to the native language. It is this principle that ensured spread of the intercultural approach, the problematicity of which is implicitly embedded in the very fact of comparing the contrasting languages (Gontar, 1987). Problem-project spiritual-cognitive tasks are in the basis of the problematic situations creation with the previously worked methods of forming and formulating of a thought by known foreign language means to express the unknown new content, a thought, i.e. the subject of the utterance. Here the decision of its own subject mental tasks is carried out which are given in a problem situation and which are understood disciple as his/her own personalspiritual problems of the spiritual level of varying degrees of complexity. It is at this level that the samples of folklore (tales, songs, proverbs and sayings) can be methodologically appropriate. **On the spiritual-cognitive level**, first of all, one should pay attention of trainees to universal values expressed in the best samples of folklore of different nations. In the context of a problematic situation in which simultaneously with problem solving the development of knowledge and skills of practical use is simultaneously mastered, a parallel mastering of the means and the methods of forming and formulating of a thought occurs (Kovalevskaya, 1999: 64). In other words, in a foreign language teaching the use of problem-project tasks allows not to separate from the preparatory stage of the process of speech, during which only skills can be formed and fixed.

**Lecture 13-14**

1. Ways of creating problem situations on the basis of the text
2. Presentation of the phenomena, the facts demanding theoretical explanation.
3. Statement of educational problem tasks for an explanation of the phenomena, facts.
4. Motivation to comparison, comparison and opposition of the facts, phenomena.

***Problem-solving*** is a process—an ongoing activity in which we take what we know to discover what we don't know. It involves overcoming obstacles by generating hypo-theses, testing those predictions, and arriving at satisfactory solutions. Problem-solving is the ability to identify and solve problems by applying appropriate skills systematically. Problem-solving involves three basic functions in teaching reading:

-Seeking information

-Generating new knowledge

-Making decisions

*Problem-solving* is, and should be, a very real part of the curriculum. It presupposes that students can take on some of the responsibility for their own learning and can take personal action to solve problems, resolve conflicts, discuss alternatives, and focus on thinking as a vital element of the curriculum. It provides students with opportunities to use their newly acquired knowledge in meaningful, real-life activities and assists them in working at higher levels of thinking

Here is a five-stage model that most students can easily memorize and put into action and which has direct applications to many areas of the curriculum as well as everyday life:

Here are some techniques that will help students understand the nature of a problem and the conditions in the text.

List all related relevant facts.

Make a list of all the given information.

Restate the problem in their own words.

List the conditions that surround a problem.

Describe related known problems.

Illustrations are helpful in organizing data, manipulating information, and outlining the limits of a problem and its possible solution(s). Students can use drawings to help them look at a problem from many different perspectives.

There are some instructions for an FL teacher on the use of problem solving approach:

*Understand the problem.* It's important that students understand the nature of a problem and its related goals. Encourage students to frame a problem in their own words.

*Describe any barriers.* Students need to be aware of any barriers or constraints that may be preventing them from achieving their goal. In short, what is creating the problem? Encouraging students to verbalize these impediments is always an important step.

*Identify various solutions.* After the nature and parameters of a problem are understood, students will need to select one or more appropriate strategies to help resolve the problem. Students need to understand that they have many strategies available to them and that no single strategy will work for all problems. Here are some problem-solving possibilities:

*Create visual images.* Many problem-solvers find it useful to create “mind pictures” of a problem and its potential solutions prior to working on the problem. Mental imaging allows the problem-solvers to map out many dimensions of a problem and “see” it clearly.

*Guesstimate.* Give students opportunities to engage in some trial-and-error approaches to problem-solving. It should be understood, however, that this is not a singular approach to problem-solving but rather an attempt to gather some preliminary data.

*Create a table.* A table is an orderly arrangement of data. When students have opportunities to design and create tables of information, they begin to understand that they can group and organize most data relative to a problem.

*Use manipulatives.* By moving objects around on a table or desk, students can develop patterns and organize elements of a problem into recognizable and visually satisfying components.

*Work backward.* It's frequently helpful for students to take the data presented at the end of a problem and use a series of computations to arrive at the data presented at the beginning of the problem.

*Look for a pattern.* Looking for patterns is an important problem-solving strategy because many problems are similar and fall into predictable patterns. A pattern, by definition, is a regular, systematic repetition and may be numerical, visual, or behavioral.

*Create a systematic list.* Recording information in list form is a process used quite frequently to map out a plan of attack for defining and solving problems. Encourage students to record their ideas in lists to determine regularities, patterns, or similarities between problem elements.

*Try out a solution.*When working through a strategy or combination of strategies, it will be important for students to …

*Keep accurate and up-to-date records of their thoughts, proceedings, and procedures***.** Recording the data collected, the predictions made, and the strategies used is an important part of the problem solving process.

*Try to work through a selected strategy or combination of strategies until it becomes evident that it's not working, it needs to be modified, or it is yielding inappropriate data.* As students become more proficient problem-solvers, they should feel comfortable rejecting potential strategies at any time during their quest for solutions.

*Monitor with great care the steps undertaken as part of a solution.* Although it might be a natural tendency for students to “rush” through a strategy to arrive at a quick answer, encourage them to carefully assess and monitor their progress.

*Feel comfortable putting a problem aside for a period of time and tackling it at a later time.* For example, scientists rarely come up with a solution the first time they approach a problem. Students should also feel comfortable letting a problem rest for a while and returning to it later.

*Evaluate the results.* It's vitally important that students have multiple opportunities to assess their own problem-solving skills and the solutions they generate from using those skills. Frequently, students are overly dependent upon teachers to evaluate their performance in the classroom. The process of self-assessment is not easy, however. It involves risk-taking, self-assurance, and a certain level of independence. But it can be effectively promoted by asking students questions such as “How do a teacher feel about his progress so far?” “Are a teacher satisfied with the results a teacher obtained?” and “Why do a teacher believe this is an appropriate response to the problem?”

**Lecture 15**

1. **Lesson planning on context-based teaching**

In planning CBT has to use approached directed to use a problem solving, investigative, open-ended approach—one which uses real materials and situations, and identifies the connections between the subject and the real world. Using a problem solving approach, especially one that is based around making connections with the real world, can be demanding—certainly harder than teaching out of a textbook. It requires more planning and preparation in advance if it is going to work successfully.

The teacher has ask questions- how can I plan what to do and how to link the subject with the real world? And what can I do in the classroom and out? The following flow chart maps out one possible process to use for negotiating and planning what to teach that supports this approach. This process is often best done in collaboration with other teachers – it makes it more creative and a teacher can share the development time.

The first and crucial task is to decide what the theme or context is that will be the topic for students to investigate and work on. Importantly, it should be of interest to the students. It could be a current popular topic, or an issue of concern. It might be about sports, food, travel, cars, holidays, fashion or music. However, it is important to remember that one topic may not be of interest to all students in the group, so a few different options can help. As teachers, we need to remember that negotiation is a two way process—not just one way from the students’ perspective. The teacher is there as an educational leader and has a vital role to play with their knowledge and expertise about what topics are appropriate, what investigations are achievable and manageable, and what mathematics needs to be covered to meet curriculum guidelines.

It can also help if students are involved in the decision making process, so that they can feel ownership in some way. There are several ways to involve students: discussing ideas with them, suggesting topics, brainstorming with them, working in small groups to develop ideas, getting them to write down ideas on cards, and much more.

Talking with other teachers who teach the same group of students will give a teacher an idea of what the students might be working on in their other classes.  If topics are chosen that are related to what students are learning in their other subjects, this provides a cross-curricular approach to teaching and the curriculum.

One of the main components of being an effective teacher is to know how to design and effective **lesson plan.** A lesson plan is the framework for a lesson; it is a map that shows teachers where to start, where to finish, and what they need to do to get there. A well developed lesson plan should reflect the interest and needs of the students. It should also include realistic goals and activities that will promote learning for children.

**What are the most important elements of effective lesson design?**

* **Objectives and goals** - The lesson objectives must be clearly defined and in lined with district and/or state educational standards.
* **Anticipatory set** - This is where the stage is set for students to tap into their prior knowledge and give the objective a content.
* **Direct instruction** - Where the teacher explains in great detail the lesson's concepts to the students
* **Guided practice -** Teacher will guide the students while they practice and apply the skills that was taught to them through direct instruction.
* **Closure** - Teacher will outline how they will wrap up the lesson by given the lesson concepts further meaning for the students.
* **Independent Practice-** Students will demonstrate whether or not they absorbed the lesson's learning goals through homework or independent assignments.
* **Required materials and Equipment** - Determines what supplies are required to help the students achieve the stated lesson objectives.
* **Assessment and follow-up -** Where teachers will assess the final outcome of the lesson and to what extent the learning objectives were achieved. (Lewis, 2014, p.2).

**Context based teaching on Mathematics**

