Глобализация и резкое повышение роли интеллектуального фактора в современном обществе требует кардинальных изменений в теории и практике государственного образования. Главной движущей силой этого процесса выступают: резкое стимулирование ценности педагогического труда на государственном уровне і качественное изменение системы подготовки педагогических кадров на принципах гуманизма, приоритета духовности педагогической культуры.

## В.І. Панченко ДЕЯКІ МЕТОДОЛОГІЧНІ ПІДХОДИ ПРОЦЕСУ ПІДГОТОВКИ СУЧАСНОГО ПЕДАГОГА

Глобалізація і різке підвищення ролі інтелектуального фактору в розвитку сучасного суспільства потребує кардинальних змін теорії і практики державної освіти Головною рушійною силою цього процесу виступають: значне підвищення цінності педагогічної праці на державному рівні та якісна зміна системи підготовки педагогічних кадрів на гуманістичних засадах, пріоритету духовності педагогічної культури.

## Victor Panchenko SOME METHODOLOGICAL APPROACHES TO PROCESS OF MODERN PEDAGOGUES PREPARATION

Globalization and sharp raising the intellectual component role in modern society demands cardinal changes in the theory and practice of state education. Sharp stimulation of pedagogical labor's value on a state level and qualitative changes in the pedagogues' preparation system on principles of humanism, pedagogical culture spirituality are main motive power of this process.

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### MODERN TENDENCIES IN UNIVERSITY PEDAGOGY

In recent years, the teaching staff from the Universities faced problems regarding the undergraduates' educational activity. The pedagogues in our country(1) speak of the insufficient motivation of the undergraduates, the early academic education abandon, the poor appreciation of the intellectuals by society, these being only a few of the symptoms of the moral crisis of the present-day universities. In Belgium, the rector of the Catholic University of Louvain(2) highlighted aspects such as deficiencies of adaptation of undergraduates to the requirements of the university activity, their poor motivation, particularly in the first years of study, the higher ratio of instruction failure than before. Other researchers in the same university(9) notice that the undergraduates of the Faculty of Applied Sciences, studying to become engineers, are less interested in their own training than in finding means of taking their exams. Their low motivation leads to absenteeism and failure. In Hungary, K. Radnoti(8) points out that in ELTE( Eötvös Loránd University of Budapest) only 15-20% of undergraduates take all their credits by the end of the first year. The author considers that a major cause of the poor academic results lie in the fact that many high school graduates have a much worse education than before(the author especially refers to Physics). In this situation, the following situation was adopted: in the first

week of the first year, an initial assessment of the undergraduates' knowledge is made in the basic disciplines that were taught in high school as well. Those who are not well enough skilled, in order to deal with the competencies prescribed in the university syllabus, take additional recovery courses.

In the recent period, the requirements of the employers changed as well. The members of the European Round Table of Industrialist identified the basic skills, which in their opinion are not well enough acquired by numerous university graduates, which make their integration in the labour market difficult. Out of these we could mention: critical thinking, learning skills, communication skills(including speaking another European language, besides their mother tongue), team work, assuming responsibility, self-control, decision making, risk taking, initiative, curiosity, creativity, civic sense etc. In the opinion of the ERT members, our day graduates should be well trained for various and emergent carriers, rather than for a unique, well defined one(3).

Many researchers in the field of education science, teaching staff n universities, politicians have asked themselves how can activity in universities be improved, according to the new requirements of undergraduates and employers. A European Space of academic education was suggested at the level of the European Union wit a compatible, efficient, diversified and adaptable character. The fundaments of this process were laid by adopting the Declaration of Sorbonne(1998), followed by the declaration of Bologna(1999), reunions of Prague,(2001), Berlin(2003), Bergen(2005), London(2007).

At University level, alongside with adopting the objectives of these reunions, answers are looked for to questions asked and various measures are put to place. Some of those will be presented in the following.

Training competencies

A basic problem faced by teaching staff in universities is the identification of teaching-learning strategies adapted to the present situation, in which both undergraduates' and employers' requirements have changed. In our country, but in many other countries as well, not so long ago, the emphasis was on acquiring knowledge and accomplishing objectives. But even when the students acquire the knowledge delivered, many a times they have difficulty in activating it in non-educational, real contexts. This is one of the reasons for which the focus is now on competencies.

The concept of competency was initially used in social-professional environments. In the last decades, the term is used more and more in school. In pedagogy literature several definition of competency are found. J.M. De Ketele defines competency as an assembly of capacities(activities) applied on substance in certain situation families to solve the problems raised by those(5). Competency is an integrating concept taking in consideration in the same time the activities accomplished, the substance and situation in which activities are accomplished. All these can be synthesised in the formula: Competency= capacity x substance x contexts(4).

Paquay(7) understand by competency an assembly of resources mobilized to confront a family of problem-situations. Resources can be cognitive, affective, motor, willing. The can be represented by assemblies of knowledge, skills, attitudes, action schemes, algorithms etc. The student should become capable of mobilizing(activating) these resources in an integrated and dynamic way, to cope with complex, significant, operational tasks. Acquiring, practicing and assessing competencies is done in a family of problem-situations, by which pedagogues mean an assembly of situations with an equivalent difficulty level, referring to the same competency(for instance competency to write a letter can be practice/assessed asking the students to edit a letter to a friend, to parents etc.).

Competencies can be classified in various ways, for instance they can be divided in specific and transversal competencies. Specific competencies refer to tasks characteristic to a certain discipline. Transversal competencies are transferable from one field of activity to another and are applicable in a great variety of situation. They favour mobility in the labour market.

Transversal competencies can/should be developed by the teaching staff. They fall into competencies with intellectual, methodological and social character. Intellectual competencies refer to the capacity of looking for information, processing information (analysis, reformulation, synthesis etc), memorizing new information integrating them in those previously acquired, use of new knowledge to solve analogous tasks, communication of information etc. Methodological knowledge refer to the modality of learning: planning activities, time management, using reference documents etc. Competencies of social character are those favouring social cohesion and social integration. To train these competencies it is important for the student to know himself/herself, to have self-confidence, self-esteem, to understand the others, to accept differences among people, to assume team work, to have the capacity of listening to others, of having an efficient dialogue(5).

This new approach of the instruction-education process involve modifications regarding selection of learning objectives and substance, as well as teaching-learning and assessment strategies. The essential aim of teaching-learning is no longer to hand over and acquire substance. Substance becomes resources acquired by the student to train his/her competencies. The role of the teaching person is no longer to transmit substance, but to conceive and manage learning situations where competencies are trained.

Parmentier and Paquay(7) suggest a model of activities favouring training of competencies(Fig. 1). The starting point of these activities is represented by the problem-situation, which in most of the cases is proposed by the teaching person. This is a situation that cannot be solved by the student with the help of his/her present knowledge, skills, questioning his opinions. The student needs to understand the problem-situation, construe it and make the decision on how to act(alone or in cooperation with others) to solve it. The teaching person has the role to organize learning activities and to accompany each student in the process of competency training.

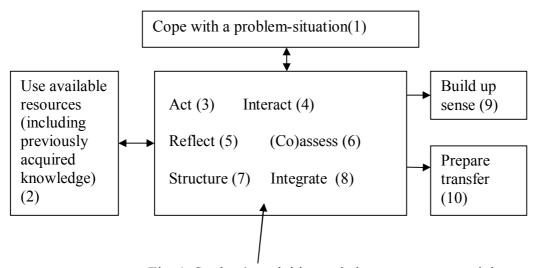


Fig. 1. Student's activities assisting competency training

This model shows teaching-learning elements that assist in competency development. These elements, from the teacher's point of view, are the following:

- 1. Organize problem-situation. The teacher confront the student with complex situations, as close as possible to real life situations(case studies, simulations etc.). Teaching-learning activity is centred around this problem-situation, which should be a challenge for the student, motivating him/her and with a sense. The teacher prepares the instruments, the necessary conditions for the student to act to solve the problem.
- 2. Use of various resources. The teacher supports the student so that he/she would see the acquired knowledge and the knowledge to be acquired as resources that might be exploited, helping him/her to ask questions such as: For what is this knowledge useful? When will I be able to use it? In what context? in what conditions? The teacher helps the student to use various resources: books lectures, other materials. Real life experience is applied(for example from the students' personal experience). Outside activities are organized, discussions with experts, etc.
- 3. High degree of stimulation of the student is provided. The student is asked to perform activities that would end with significant, and as far as possible, useful products (panels, models, research reports etc.). The results of his/her activity are presented to the colleagues, to a jury, etc. and debates are arranged. The teacher allows the students to be independent, have initiatives regarding task solving methods and result communication modalities.
- 4. The teacher organizes the situations in such a way as to make the students interact among themselves, with the teacher or other resource-persons. The students discuss their opinion regarding the problem-situation, and cognitive conflicts are analyzed, debated. Team activities are also organized.
- 5. By his/her comments and questions, the teacher encourages students to reflect on their actions. The students are directed to think about the resources used, about the conditions in which the action takes place, its consequences, to be aware of the way in which he/she operates etc.
- 6. The teacher uses assessment modalities centred around the student. The students take part in their own assessment by various ways; self-assessment, mutual assessment, co-assessment etc. They analyze their own errors in order to self-adjust the learning process. Portfolios, syntheses etc. are used for assessment, methods helping the students to synthesize their knowledge.
- 7. The teacher helps the students structure their new knowledge to integrate and fix it in long time memory and become transferable. From the starting point of a learning unit, the teacher highlights the structure of the elements to be acquired.
- 8. Integration by the student of various personal resources. By the questions asked, the teacher helps the student to be aware of his/her resources(knowledge, skills, attitudes etc.) and to make connections between those and the knowledge, skills that are taught-acquired so far. The teacher points out the relationships between the information delivered-acquired and the possibility of its future use.
- 9. Emphasis on the sense of the knowledge acquire. Activities are organized in such a way as to make the student become aware of the aim of acquiring knowledge, the way it can be applied. Thus, the student become aware of the sense of the activities performed.
- 10. Knowledge transfer is provided. The teacher helps the students identify personal and professional life situations where the acquired knowledge, skills can be applied. The student is asked to apply his/her new knowledge and skills in different situations than the ones in which the training was done.

The teacher assists each student in the process of developing competencies and training for independent action. He/she motivates the student for the learning process and helps him/her to

have confidence in his/her capability. The teacher puts the student in cognitive conflict situations and helps him/her to deal with incertitude in solving problems.

This model is seen to fall into a socio-constructivist learning process, where the student builds his/her own knowledge interacting with his/her colleagues(team learning) and with the environment(learning by dealing with problem-situations and applying various resources).

Stimulating and interactive teaching-learning strategies

Researchers in the field of education sciences believe that it is necessary to promote a student centred education, with a stimulating and interactive character. The experience of the Faculty of Applied Sciences of the Catholic University of Louvain will be presented, which developed a teaching centre based on active learning in small groups (9), for the firs two years of study. The activity follows three principles: contextualization of learning, group learning and tutoring.

<u>Contextualization</u> involves placing the student in front of problem-situations, and by solving them, new knowledge will be acquired. Problem-situations should be complex enough for a group activity to be required. In order to be motivating they should be inspired from professional reality and be a challenge. Two categories of problem-situations are applied at the Faculty of Applied Sciences: the problem itself and the project.

The problem itself refers to one discipline and its solving involves relatively short time – approximately 10 hours. Activity takes place in several stages. In the first stage the problem is presented to the students. The students discuss the task in group, make an "inventory" of the knowledge they possess, and establish the information that should be acquire in order to solve the problem. The second I an individual study stage, when the students obtain the necessary knowledge. In the third stage, the students present the acquired knowledge to the group, discus the, and develop in group one or several solutions for the proposed problem. By solving the problem, the students are trained both in competencies specific to the discipline and transversal competencies.

Learning through projects has an interdisciplinary character and runs for several weeks. A complex task is proposed to the students, their solving requiring application of knowledge and skills from several disciplines studied. Students thus learn to devise and manage a long term activity.

Learning by problem solving and projects is totally different from "traditional" learning, where a lecture is delivered, and the student memorizes the knowledge taught. By these "new" methods the student is active and is aware of the importance of the knowledge taught. The knowledge thus acquired is integrated and can be more easily transferred.

Group learning. Learning is always individual, but it can be stimulated, made efficient by group work. Problem solving and projects are activities run in group of 6-8 students. The group is stable, until the activity comes to end. Group activity leads to developing transversal competencies: work organized in group, developing efficient communication, questioning and criticizing other people's ideas, overcoming conflict situation, making choices and risk assessment, time management etc.

<u>Tutoring.</u> The group of students is assisted by a tutor, in certain period of the problem solving or project development activity, helping both in acquiring knowledge, skills and to train for transversal competencies Besides the tutor that coordinates these activities, the student also cooperate with the teaching staff that provide disciplines of speciality.

At the Faculty of Applied Sciences learning is based on problem-situation solving, but other specific educational activities are also performed, such as practice, magisterial course and assessment.

Activities based on practice are shorter. Practice is selected in such a way as to be as much as possible linked to real situations. The teacher not only shows a model to be followed,

but also proposes series of exercises build up in such a way as to make students discover, working in groups, the way in which they should be solved.

Magisterial course can be used before a problem-situation is proposed, with the aim of explaining basic notions and concepts which are considered more difficult to understand. More frequently the course is organized after the student had been familiarized with the problem that follows to be solved. By the contact with the problem, the students form a mental representation of the notions approached, and during the course the teacher points out the relationships between concepts, corrects the students' possible errors, synthesizes information.

Assessment is done both during the semester(assessment of the way students work to solve the proposed problems, test papers) and at the end of the semester, in the form of written exams at the basic disciplines.

Making activities efficient in large groups

In the "traditional" academic education, the basic type of didactic activity is the lecture, where a large number of students participate as a rule. The lecture generally gives a large volume of knowledge orally. This way of organizing didactic activity has numerous disadvantages but also benefits.

Pedagogues (10) consider that the possibly greatest disadvantage of lectures is that the students are kept in a relative passivity from a cognitive point of view. There are many other disadvantages. It is rather difficult to motivate the students. Attention drops after the first 15-20 minutes. Students find difficult to understand the objectives of the lecture. They are not informed about the way it runs, they are not sure if they work enough, if they understand correctly the notions delivered, they are not sure how to improve their activity. The relationship between the teaching staff and students is impersonal. The student attending the lecture has no relationship with the colleagues of the lecturer. The teacher treats the students as a homogeneous group, he cannot consider the heterogeneity of the group.

Another problem is the difference between the teacher, who is an expert in the field, and the students, who are novices. The teacher's knowledge is well organized and structured. His discourse tends therefore to be very specialized and technical, with numerous implicit interferences that are difficult to be understood by the students. The students have informal knowledge, poorly structured, sometimes erroneous even. This previous knowledge is occasionally a valuable starting point, assisting in the attainment of new information. There are cases, however, when this information is an obstacle in understanding the knowledge delivered. Therefore it is essential for the teacher to find out which is the previous level of knowledge of the students, so that he/she could put himself/herself in the students' shoes, so that the student would understand the language correctly.

The most important advantage of the magisterial lecture is that it is lucrative, that is a teacher can lecture to a great number of students in the same time. This is the reason why it is difficult to give up lectures in favour small group activities, although research proved the latter's efficiency. In this situation many pedagogues have asked themselves how could they organize courses in such a way as to increase efficiency and reduce disadvantages. A few answers will be given to this question below.

Activity improvement in large groups should be based on the principles of active pedagogy. The teacher should organize activity in such a way as to make the students become active, process the information delivered as thoroughly as possible, building up their own knowledge. In this sense, it is important to:

- motivate the students,;
- keep their attention for s long as possible;
- have in mind the students' previous knowledge;

- contextualize teaching;
- organize group activities during the course;
- assess the student frequently, especially from the point of view of training.

Vanpee, Godin and Lebrun(10) offer concrete suggestions regarding the way in which courses might be organized, to meet the previously presented conditions.

The first course. In this course, the teacher works on the students' motivation, providing information on the activity that will follow in the next moths. The focus on objectives of the discipline and competency training is discussed. Modalities of assessment of students are identified.

At the *next courses*, the position of the subject presented along the entire course is discussed, the information required for the understanding of the subject is updated, the students' knowledge on the subject is discussed. The previous knowledge can be used to understand and acquire the new knowledge, but it is important to identify the students' misconceptions and erroneous representations. The students will be helped to be aware of the cognitive conflict between their previous knowledge an the information expressed by the teacher. If this awareness does not take place, the old erroneous information will inhibit the new one, obstructing its accumulation in the long term memory.

At the beginning of each course, it is important to rouse the students' attention and interest. To this end, the teacher can suggest the students a problem inspired from a real situation, that can be met in the profession for which they are prepared. By an active listening, the students will manage by the end of the course to find answers to the problem raised by the teacher.

During the course, the teacher presents the new information. It is important for the students not to become passive recipients, but tot be stimulated to manipulate the information themselves. To this end, he teacher can ask questions, or can encourage the students to ask questions. In a psycho-pedagogic experiment performed by Ruhl(10), after 12-18 minutes of attendance, the students were asked to look over their notes and to discuss with their colleagues about the things passed on. These students grasped better the information conveyed than those who attended the same courses, without those short breaks.

The teacher will deliberately focus on transmission-acquisition of transferable knowledge in real situations. This could be accomplished by contextualization of the knowledge conveyed. The teacher should emphasize the relationships between the information conveyed, the relationships between the new knowledge and how it can be applied/used in real contexts. The teacher will give real(or possible) examples and will ask the students to do the same, from their life experience.

In order to make the students more active, motivated, to help them know themselves and mutually support each other in the learning activity, mall group activities might be arranged during the course. For instance, 3-6 students close by, discuss for 3-5 minutes about the attended subjects(buzz group). Small group might be set up to solve certain problems suggested by the teacher. Socio-cognitive conflict will take place, which makes the student question his/her own knowledge, restructures and synthesizes it with the new information. These cognitive activities will help the new knowledge to be fixed in long term memory. Small group activities might take place at the beginning of the magisterial course(with the role of rendering the students sensitive to the subject that will be taught) or during the course.

During large groups didactic activities, no individual *feedback* can be given regarding the knowledge acquisition. For the training assessment, the students can fill out check tests papers during the course or at the end. From the discussions related to the answers, a self-assessment of the acquired knowledge is done.

At the end of the course, a synthesis of the notions conveyed should be done. The teacher will also answer to the questions asked by the students. A *feedback* can be thus obtained that can be used when the teacher prepares the following course.

Pedagogic background of the teaching staff in universities

The modifications that take place in universities (including the point of view of diversification of organization forms for didactic activities, teaching-learning methods), resulted in the intensification of the wish/necessity to improve pedagogic instruction of the teaching staff in universities. In the last decades, the problem of training teachers for universities is more and more frequently debated in congresses of university pedagogy. Universities organize several training programmes for the university teaching staff. Problems related to planning, organization, assessment, didactic communication, training for tutorship, training in didactics etc. are embarked upon.

An essential objective of the training programmes is to develop professional competencies for the teaching staff n universities. At AIPU (Association Internationale de Pédagogie Universitaire) that took place in 1999 in Montreal, (6) these competencies were divided in three dimension:

- pedagogic dimension:
  - Representation of the act of teaching-learning that would allow an efficient activity(for instance, to wish and to be able to change the usual work with the students, with the intention of obtaining the best results in the learning activity; accept the evolution of the concept of "teaching", according to the evolution of the scientific concepts in this field).
  - o Planning and application of pertinent and efficient teaching activities: establish objectives, choice of teaching methods, of the material, didactic means etc.
  - o planning and application of assessment of the results.
  - o master various forms of pedagogic communication: oral, written, nonverbal, communication, use of the internet etc.
  - o Animate and manage interactions in groups of students of various sizes.
  - Assisting the students in learning(for instance tutorship, training assessment, counselling and directing the students with learning difficulties etc.).
- institutional dimension:
  - o facilitate success for as many persons as possible and personal development of each.
  - o availability and capacity to work in an interdisciplinary team to develop pedagogic projects or programmes.
- socio-professional dimension:
  - o develop a reflexive thinking on one's own pedagogic activity: self-evaluation of teaching activity, participation in permanent training programmes, application of pedagogic research projects etc.
  - o being concerned with the university teaching staff profession's ethical dilemmas: abide by deontological regulations in teacher-student relationships, permanent professional progress, involvement in community problems etc.

There are authors(11) who highlight efficiency criteria for these training programmes, from pedagogic and motivational point of view. The four principles set out by J.M. De Ketele(2) at the AIPU colloquium in Montreal, 1999, should be taken into consideration:

o principle of isomorphism between the way in which teacher training is achieved and the way in which we wish the teachers to work with their students:

- o principle of contextualization by considering the need of the participant(for instance, the teaching staff working with groups made up of 300 students have other needs than those working with 30 students;
- o Principle of "exactly what's necessary... in due time": it is important for the training activities to run when the participants are ready to take part in activities and when the material acquired could be applied as soon as possible;
- o principle of variety: using a great variety of teaching-learning methods there are great chances for the information and competencies to be understood, grasped and applied in didactic activity.

On a motivational plane, the fact that participation in training activities is mostly voluntary, should be taken into consideration. Therefore, it is important to support the motivation of the teaching staff and this can be done by providing scientific legitimacy to the programme, provision of a programme in accordance with the individual requirements of the participants and by pedagogic competency of the trainers.

Training programmes should respond to the wish of the teaching staff to improve professionally, but institutional use of the pedagogic competencies is important as well.

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#### MODERN TENDENCIES IN UNIVERSITY PEDAGOGY

High school graduates come to universities with different motivations, behaviours, compared to previous years. Due to the social and economic changes, graduates have to be confronted with modified requirements in order to be able to be integrated in the labour market. The University needs to react to the new requirements of undergraduates and society by making changes. This

paper analyzes a few aspects pointed out by the teaching staff and researchers of Universities from the European Union, as well as some of their solutions suggested.

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#### СОВРЕМЕННЫЕ ТЕНДЕНЦИИ ПЕДАГОГИЧЕСКОГО УНИВЕРСИТЕТА

Выпускники средней школы приходят в вузы с различными мотивациями, поведением по сравнению с предыдущими годами. Из-за социальных и экономических изменений, выпускники должны иметь дело с изменением требований, с тем чтобы иметь возможность интегрироваться в рынок труда. Университет должен реагировать на новые потребности студентов и общества путем внесения изменений. В статье анализируются некоторые аспекты указанные преподаватели и исследователи университетов из стран Европейского союза, а также некоторые предложенные ими решения

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# СУЧАСНІ ТЕНДЕНЦІЇ ПЕДАГОГІЧНОГО УНІВЕРСИТЕТУ

Випускники середньої школи приходять до ВНЗ з різними мотиваціями поведінки, в порівнянні з попередніми роками. Через соціальні та економічні зміни, випускники повинні мати справу зі зміною вимог для того, щоб мати можливість інтегруватися в ринок праці. Університет має реагувати на нові потреби студентів і суспільства шляхом внесення змін. У статті аналізуються деякі аспекти, вказані викладачами та дослідниками університетів з країн Європейського союзу, а також деякі запропоновані ними рішення.

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## ПРОБЛЕМИ ТА МОЖЛИВОСТІ СТВОРЕННЯ ДИДАКТИЧНИХ ЗАСОБІВ В УМОВАХ ІНФОРМАТИЗАЦІЇ ВИЩОЇ ШКОЛИ

Постановка проблеми. Інформатизація освіти, поряд із цілою низкою позитивних впливів на інтенсифікацію навчального процесу, породила й низку проблем. Окрім соціально-психологічних (інформаційна нерівність учасників навчального процесу, психологічна залежність від комп'ютера та ін.), інформатизація вищої школи спричинила кардинальні зміни й у методичному забезпеченні навчального процесу, зокрема й у можливостях дидактичних засобів.

Аналіз наявних досліджень та невирішених аспектів проблеми. Незважаючи на постійну еволюцію дидактичних засобів (від кінопристроїв до комп'ютерних програм) і їхнє значення в підвищенні ефективності засвоєння навчального матеріалу (А.Т.Ашеров, Є.В.Громов Р.С.Гуревич, М.Ю.Кадемія та ін.), визначення цього поняття у педагогічній і навіть енциклопедичній літературі відсутнє. До цих пір немає також їхньої чіткої класифікації. Підкреслюючи значну роль дидактичних засобів у пізнавальній діяльності студентів, Д.В.Чернілевський і О.К.Філатов намагаються класифікувати їх за принципом