The Organization and Substance of Class Work at Research Universities

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Annotation

This article examines the organizational principles and substance of class work at world class research universities, substantiates its role and place in the provision of global competence to today's students, which the abilities and skills of the 21st century comply with. Key priorities in academic activities for the efficient mastering of global competence have been determined and the strategies of leading world universities in this sphere have been highlighted. Effective models and methods for the activation of class studies on the basis of research, existing approaches to the evaluation of class work and motivational factors for the productive academic activities of the students in the class have been systemized. World trends of the informatization of higher education have been distinguished and the contribution of open education in the development of the research potential of universities has been shown.

Key words: class work, research university, global competence, abilities and skills of the 21st century, learning and teaching on the basis of research, motivation of the academic activities of a student, open education.

Today's society is characterized by the latest world trends — economic, cultural, technological and economic changes, which are part of the entire globalization process. The growing mutual dependence of national economies requires a generation of highly qualified people, who can effectively resolve the problems of mankind and at the same time, take an active part in local, national and international public life. This is why, in the dynamic educational and scientific environment of the 21st century, the main purpose of universities is the training of competitive graduates, capable of quickly and creatively reacting to social challenges, as well as immediately adapting to rapid changes in external conditions. The training of such students for fully-fledged participation in today's world and that of the future requires the development of their own new level of skills and practices — global competence, the orientation for the attainment of which should be a key element of the class work at modern research universities.

As is well known, the urgent issues of the development and the attainment by students of global competence during the learning process were

examined for the first time on the international level in the Report of the International Commission on Education for the Twenty-First Century, which was presented by UNESCO in 1997. Jacques Delors' report, «Learning: a hidden treasure» distinguished the four «pillars» of global competence, on which the education of the 21st century should be based: learning to know; learning to do; learning to live together; and learning to be[1]. This approach was extended and developed by other authoritative organizations and individual university institutions, particularly by the team of educational experts, practitioners and scholars under the name *Global Competence Task Force*, under the aegis and within the framework of a special educational initiative of the Council of Chief State School Officers (CCSSO-EdSteps) and the patronage of the Asia Society Partnership for Global Learning. Specialists from this expert group proposed a definition of the category of global competence as «the ability and disposition for understanding and actions on issues of global significance» and the characteristics of «globally competent citizens»[2]. It is considered that globally competent citizens are interested in discovering about the world and the means by which it functions. They aspire, and have the ability to use great ideas, instruments, methods and languages, which are important for any sphere of learning, in order to take part in the resolution of today's urgent issues. They use and develop this experience, taking different approaches into account, efficiently exchanging views and drawing out their thoughts and taking measures for the purpose of improving the environment's conditions. The purpose-oriented group presented key and basic global competence in the form of a global competence matrix (Table 1).

[1] *Delors, Jacques* et al. 1996. Learning: The Treasure Within. Paris: UNESCO.

[2] Veronica Boix Mansilla & Anthony Jackson. Educating for Global Competence: Preparing Our Youth to Engage the World. Council of Chief State School Officers' EdSteps Initiative and Asia Society Partnership for Global Learning, 2011. *Available at:* http://www.edsteps.org/CCSSO/SampleWorks/EducatingforGlobalCompetence.pdf

Table 1

GLOBAL COMPETENCE MATRIX[2]

Investigate the world	Recognize perspectives	Communicate ideas	Take action
Students investigate the world beyond their immediate environment	**Students recognize their own and others' perspectives**	**Students communicate their ideas effectively with diverse audiences**	**Students translate their ideas and findings into appropriate actions to improve conditions**
Identify an issue, generate a question, and explain the significance of locally, regionally or globally focused researchable questions.	Recognize and express their own perspective on situations, events, issues or phenomena and identify the influences on that perspective.	Recognize and express how diverse audiences may perceive different meanings from the same information and how that affects communication.	Identify and create opportunities for personal or collaborative action to address situations, events, issues or phenomena in ways that improve conditions
Use a variety of languages and domestic and international sources and media to identify and weigh relevant evidence to address a globally significant researchable question.	Examine perspectives of other people, groups or schools of thought and identify the influences on those perspectives.	Listen to and communicate effectively with diverse people, using appropriate verbal and nonverbal behaviour, languages and strategies.	Assess options and plan actions based on evidence and the potential for impact, taking into account previous approaches, varied perspectives, and potential consequences.
Analyze, integrate and synthesize evidence collected to construct coherent responses to globally significant researchable questions.	Explain how cultural interactions influence situations, events, issues or phenomena, including the development of learning.	Select and use appropriate technology and media to communicate with diverse audiences.	Act, personally or collaboratively, in creative and ethical ways to contribute to improvement locally, regionally or globally and assess the impact of the actions taken.
Develop and argument based on compelling evidence that considers multiple perspectives and draws defensible conclusions.	Articulate how differential access to learning, technology and resources affects quality of life and perspectives.	Reflect on how effective communication affects understanding and collaboration in an interdependent world.	Reflect on their capacity to advocate for and contribute to improvement locally, regionally or globally

It is worth noting that in recent times, world class research universities (Harvard and Michigan Universities, etc.) have joined the initiative for the development of global competence, developing their own competence hierarchies, learning and practice systems, which are necessary for students in the current globalization era, developing their own methods for their evaluation and implementing effective means for the training of globally competent students and teachers into their own practice. In addition, active discussions regarding transformation of existing competence approaches in higher education for the purpose of training globally competent specialists, are currently being held in the world. An example of such discussions is the approach towards the classification of abilities and skills in the 21st century, which was proposed and developed by the specialists and experts of the Metiri Group consulting agency, which is involved in the development and implementation of the latest educational technologies (Figure 1). The indicated classification of abilities and skills is characterized by relative universality, since it reflects competence, which is globally meaningful today, which each student has to attain during the course of studies at any university institution.

In his recent publications for the «Change» magazine, «The Globalization of College and University Ratings» (2012), renowned American researcher, P. Altbach, Director of the Center for International Higher Education at Boston College, focused his attention on the fact that the main function of any university is teaching[1]. It is this important component that is ignored in most current international university ratings. The scholar stresses the fact that currently, world practice does not have a generally accepted approach to the evaluation of the teaching process at higher education institutions, but methods are used which

[1] *Altbach Philip* G. The Globalization of College and University Rankings // Change. The Magazine of Higher Learning — 2012 (January-February). *Available at*: http://www.changemag.org/Archives%20Issues/2012/January-February%202012/Globalization-abstract.html.

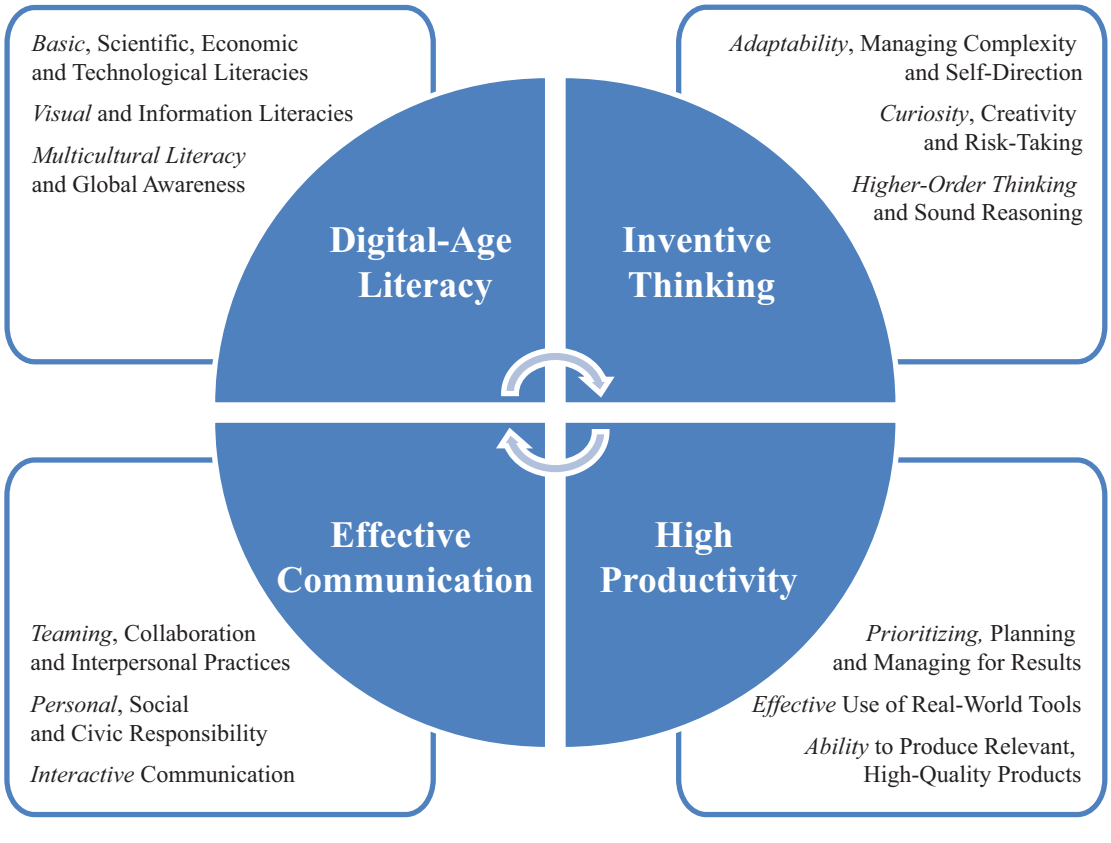

Figure 1. Abilities and skills of the 21st century

Source NCREL & Metiri Group 2003. enGauge 21st century skills. Literacy in the digital age. Naperville, IL: NCREL & Metiri Group. *Available at*: http://pict.sdsu.edu/engauge21st.pdf

operate with such indicators of teaching quality as the evaluation of the university's reputation in the teaching sphere (based on a survey of respondents), the correlation between the number of students and lecturers with a scientific degree, etc. (particularly applied during the compilation of the *Times Higher Education* university rating), which only indirectly pertain to the teaching process and do not show the contribution of the latter in education and the results of the students' learning.

Similar conclusions are reflected in the research of other American scholars — A, Richards and R. Coddington, particularly their work «30 Ways to Rate a College» (2012), published in the popular world edition of «The Chronicle of Higher Education»[1]. Scholars have analyzed six of the most famous of today's university rating systems for the existence in them of indicators pertaining to the quality of education, including teaching. As a result, it was discovered that the list of applied indicators does not include a single one that directly pertains to the results of the academic activities of students. This is why, in the absence of an appropriate system for controlling the process and results of learning, there are often situations, particularly in the practice of research universities, where the weight of the initial process (teaching) becomes of a secondary significance, and is somewhat ignored by university institutions because of the immediate priority of research components.

Arshad Ahmad, a well-known Canadian professor from McGill University, appeals for a similar practice and the necessity for its liquidation in his article «Ensuring Student Success — Students are not to blame» (2012)[2]. The scholar draws attention to the fact that it is possible to see many fragmented and homogenized undergraduate programmes today that are adapted neither to the needs of individual students nor to the needs of various employers. There are not enough interdisciplinary courses; those that exist are inadequately interconnected while first-year students are generally taught by teaching assistants and part-time instructors' assistants. Thus, the researcher argues that it's no wonder that students miss classes or, what is worse, drop out university due to underachievement. However, in no case should the students be blamed, claims Arshad Akhmad. If the learning environment and key parameters (such as exposing them to good teachers) that influence learning outcomes are changed, those uninterested students will never miss a class, show sophisticated, deep approaches to studying and become passionate about their learning.

Arshad Ahmad also focuses attention on the fact that today's teachers and professors at western universities are forming a somewhat erroneous behaviour model, pitting research against teaching, trying to minimize their teaching load at a higher education institution and accordingly focusing their attention on research grants. Pitting teaching against research is not only a false dichotomy; it also has the deleterious effect of degrading the role of teaching in the broader definition of what counts as scholarship. As long as this culture in the university environment exists and teaching is viewed as a poor cousin of what we have come to define as true scholarship, it will be difficult to expect dramatic changes in the quality of teaching.

Overall, regardless of the fact that in the university and expert environment and the strengthening and promotion of student learning is recognized as the top priority of an educational institution, generally recognized and effective indices of the evaluation of the results of studies, or the quality of learning and teaching do not exist. As a result, an objective situation emerges, whereby students, teachers, experts, employers and representatives of the public have irrelevent information regarding the actual successes of universities in the sphere of learning and teaching, while there are simply no comparable international indicators. In view of this, world class research universities develop and implement their own policies and systems of measures, directed towards improving the efficiency of the learning and teaching process, and with the mediation of relevant indices, ensure their monitoring and make effective decisions regarding the modernization of strategy in the sphere of learning, teaching and evaluation.

The issue of learning and teaching strategy under new conditions is viewed by many universities as an imperative for their future development. A vivid example of the development of university strategies, directed towards the improvement of the learning and teaching process, is Harvard University, which in 2012 saw the launch of the so-called «Harvard Initiative for Learning and Teaching», which is a perspective plan for the renewal of the learning and teaching system, based on the latest innovative achievements of world science and technology. According to the President of Harvard University, Drew Faust, the fundamental purpose of the Initiative is to «use the unique

[1] *Richards, Alex* and *Coddington, Ron.* «30 Ways to Rate a College» The Chronicle of Higher Education. 29 Aug. 2010. 21 Oct. 2010. *Available at*: http://chronicle.com/article/30-Ways-to-Rate-a-College/124160/.

[2] *Arshad Ahmad.* Ensuring Student Success — Students are not to blame // University World News. — 2012 (05 February). — Issue No: 207. *Available at:* http://www.universityworldnews.com/article.php?story=20120131141103909

enlightenment of Harvard for the reformation of teaching on the basis of the ideas, experience and technologies of the modern world»[1]. It should be noted that for the realization of this idea, a USD 40 million private grant was used, the funds of which are also to be used for the modernization of student classes and the establishment of an up-to-date learning environment.

The goals of the systematic improvement and updating of the learning and teaching process are reflected in the Learning and Teaching Strategy for 2009—2012, which was developed by Cambridge University. The priority directions of this strategy provide for:

— support in the creation of new research courses;

— encouraging the initiatives of teachers on issues of teaching innovations;

— the continuation of the development of a stimulated academic environment process;

— the creation of new teaching programmes;

— the priority of students learning in small groups;

— the setting up of close contacts between teachers and researchers;

— the introduction of certified programmes for learning foreign languages;

— the development of a student exchange programme;

— further orientation on a feedback system;

— informing students on the substance and philosophy of the learning process at the stage of enrolment at a university[2].

The University of Hong Kong has also developed similar initiatives for gaining strategic leadership in the sphere of the training of graduates, post graduates and doctors of philosophy (Figure 2). Thus, the main goal of the University of Hong Kong for «making every effort to select prominent university entrants» is the attraction of the most talented youth for learning. In order to achieve this, there are plans to develop and support the spirit and innovative atmosphere at the university, encourage teachers to develop new courses and the practical use of innovative teaching methods, giving the English language teaching a prominent status.

[1] Harvard Initiative for Learning and Teaching: 2012-2013 Hauser Fund Grant Guidelines / Harvard University: http://www.harvard.edu/sites/default/files/content/HILT-guidelines_111018.pdf.

[2] The University of Oxford. University Strategic Plan 2008-9 to 2012-13. *Available at:* http://www.admin.ox.ac.uk/media/global/wwwadminoxacuk/localsites/planningandresourceallocation/documents/planningcycle/strategicplan.pdf.

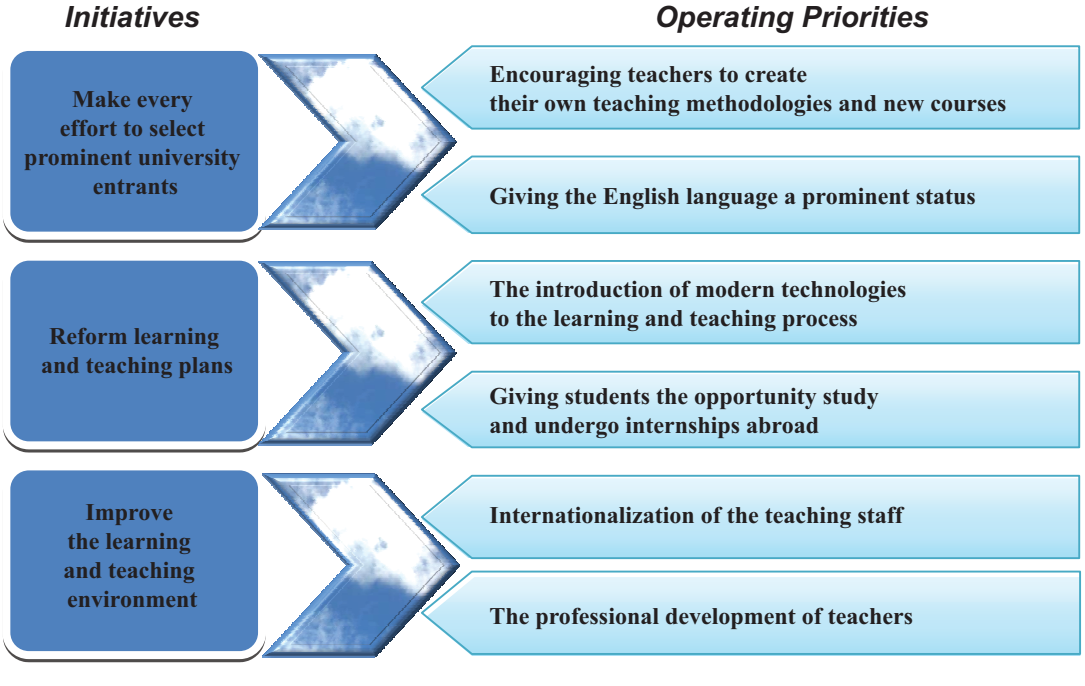

Figure 2. Strategic initiatives for attaining strategic leadership in the sphere of the training of graduates, post graduates and doctors of philosophy (University of Hong Kong)

Source: The University of Hong Kong. Strategic Themes for 2009-2014 / Strategic Initiatives and Operational Priorities. Available at: http://www.sppoweb.hku.hk/sdplan/eng/strategic-themes-for-09-14/enhancing-the-student-learning-experience.php.

The next initiative was directed towards the reform of learning and teaching plans, strategically oriented towards giving students freedom in the selection and breadth of learning. The main qualities, which are anticipated for development in students and, accordingly, integration in the learning and teaching plan, provide for critical and independent thinking, the development of communication practices and teamwork, creative leadership, as well as the due moral qualities of students. The introduction of modern technology to the learning and teaching process and giving students the opportunity to study and undergo internships abroad, will be part of the operative priorities within the framework of this initiative.

The purpose of the improvement of the learning environment (third initiative) is the creation and support of favourable conditions at the university and for the learning and research activities of both students and teachers. In this case, operational priorities are the internationalization of the teaching staff and their professional development. It also provides for the support of students through relevant consultations and the opportunity for practical training in partnership with state authority bodies, private organizations and commercial enterprises.

Another world class research university, Stanford, published a list of recommendations in its paper, «The Study of Undergraduate Education and Stanford University» (2012), which determines top priority modern learning disciplines, oriented towards the attainment of new and necessary learning, knowledge and skills throughout life[1]. More specifically the expected reform of teaching programmes at Stanford provides for a reorientation of class work and giving students, particularly undergraduates and first-year students, core knowledge and skills, instead of overly narrow disciplinary ones.

The most important aspect of the reform of teaching programmes, as stressed in the document, will be the introduction of a new learning and teaching discipline during the first year — *«Thinking Matters»*. Other new courses proposed, include *«Art of Living»* — based on the philosophy of thought; *«Freedom, Equality, Security»* — a combination of political science and jurisprudence; *«The Science of Myth Busters»* — covering biology and chemistry using television programmes, which will teach different scientific methods of research. Other proposed innovative teaching courses include *«Brain, Behavior and Evolution»* and *«Everyday Life: How History Happens»*. Overall, as a result of a review of university strategies and reforms implemented by leading world research universities in the sphere of learning and teaching, it is possible to make a conclusion regarding the granting of priority status to class work, the efficiency of which, to a great extent, determines the global competence of today's students.

An original international standard in higher education as pertains the organization of teaching activities in classes is considered to be the seven principles for good practice in undergraduate education in the USA[2], proposed by American researchers, A. Chickering and Z. Gamson. The first edition of their work was published in 1987, while the generalizations and results were based on 50 years of learning and teaching experience. The substance of these principles is determined as follows:

1. Encouraging contacts between students and the faculty — it is considered that good (pedagogical, class, teaching) practice promotes student-faculty contact in and out of classes and is the most important factor in student motivation and involvement. Faculty concern helps students get through rough times and keep on working. Knowing a few faculty members well enhances students' intellectual commitment and encourages them to think about their own values and future plans.

2. The development of interaction and cooperation between students — it is considered that this good practice encourages cooperation between students. Learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one's own ideas and responding to others' reactions improves thinking and deepens understanding of one study material or another.

3. The use of active learning — it is considered that this good practice provides for the involvement of active learning methods, when the learning and teaching process is not based on passive observation, but on active involvement and the direct integration of students outside the class, which is directly related to the practice and is in line with the realities of life.

4. Ensuring prompt feedback — it is considered that good practice gives prompt and effective feedback between the faculty and the student,

[1] The Study of Undergraduate Education at Stanford University (SUES) / The Board of Trustees of the Leland Stanford Junior University, 2012. *Available at:* http://news.stanford.edu/news/2012/january/SUES_Report.pdf.

[2] *Chickering Arthur W., Gamson Zelda F.* Seven principles for good practice in undergraduate education. American Association of Higher Education Bulletin. — 1987. — vol.39. — No.7. — P. 3—7.

as well as between the students themselves. To achieve this, the teacher must create all conditions and opportunities in the class, for students to perform and receive suggestions for improvement. At various points during college, and at the end, students need chances to reflect on what they have learned, what they still need to know, and how to assess themselves.

5. The allocation of time for the execution of tasks — it is considered that good practice is orientated on clear time limits for the execution of learning tasks, in order for students to learn efficient time management, which encourages effective learning.

6. Informing students of high hopes and expectations of them — it is considered that good practice anticipates informing students of good performance expectations. High expectations are important for everyone - for the poorly prepared, for those unwilling to exert themselves, and for the bright and well motivated. Expecting students to perform well becomes a self-fulfilling prophecy when teachers and institutions hold high expectations of themselves and make an extra effort.

7. Respect for diverse talents and ways of learning and teaching — it is considered that good practice respects diverse talents and ways of learning and teaching, so that students are able to express themselves and have more opportunities to do so.

The above-mentioned principles for the organization of the learning and teaching process are still relevant for the American training system today. The only difference is the method and mechanism for its implementation in practice, depending on the university's profile, its research potential, its well-established traditions and customs, etc. It is also worth taking into account the model for the activation of class work, developed by Professor S. Kozlowski and Professor B. Bell from Michigan State University, which is typical for most research universities (Figure 3). In this model, the process for students to gain global competence is an original cycle of transformation of knowledge, skills and practices, as well as inclinations and motives in one competence or another through the activation of class studies.

Recognizing the significance and priority of the teaching component in the learning process of research universities, in its time, the National Commission (Boyer Commission) on Educating Undergraduates in the Research University under the aegis of the Carnegie Foundation (USA)

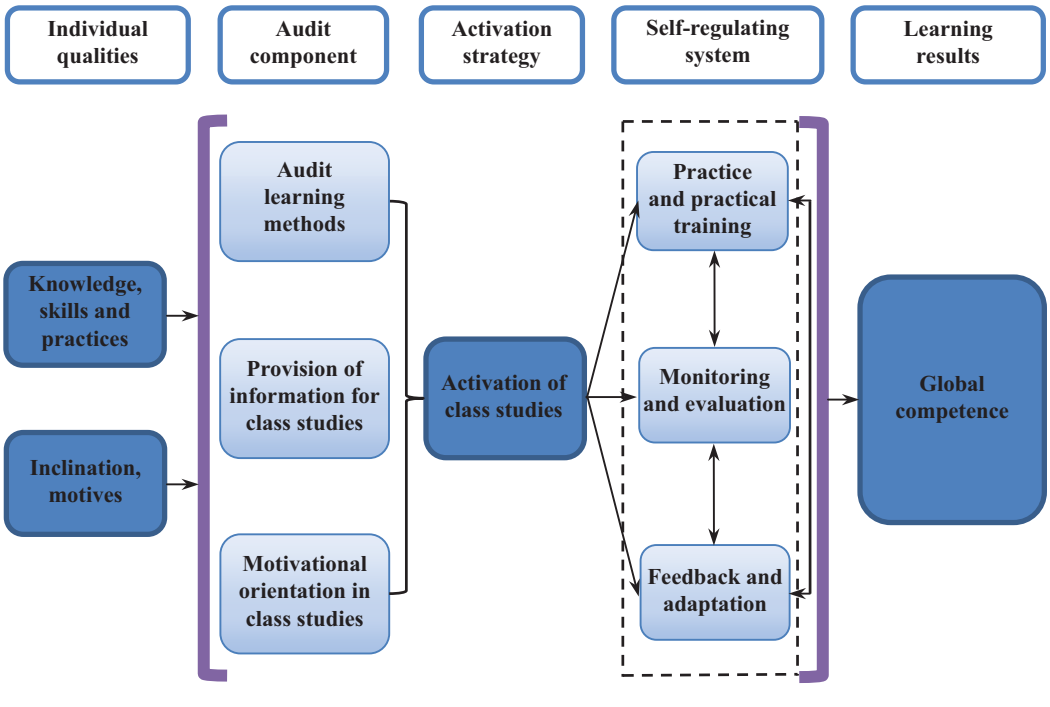

Figure 3. Model for the activation of class studies at research universities

Adapted from: S.W.J. Kozlowski & B.S. Bell (2008). Team learning, development and adaptation. In V.I. Sessa & M. London (Eds.), Group Learning (pp. 15-44). Mahwah, NJ. LEA.

conducted important research into teaching quality at American research universities[1]. This resulted in certain conclusions and recommendations regarding means for the qualitative improvement of the teaching process, such as:

1. Make research-based learning the universal university standard by engaging students in research in as many courses as possible, teaching to effectively convey the results of their scientific research, the inclusion of joint students' scientific projects in the structure of academic courses and the overall transformation of the research-based learning and teaching process into efficient practical experience.

2. Build the first year of university courses, based on research and the forming of research competence via: students' self-identification of stimuli for intellectual growth; the effective mastering of relevant fundamental knowledge and skills to continue further learning based on research; offering students diverse research seminars composed of small groups, conducted by experienced researchers, first-year students gaining competence in the written execution of their research (academic literacy), the establishment and conducting of scientific presentations and interpersonal cooperation.

3. Remove barriers in interdisciplinary student learning. Research universities must expand the directions and specialties of interdisciplinary studies for students in one sphere or another, first and foremost, taking into account the interests of the student body.

4. Give priority to students mastering communication skills, so that they are able to easily and effectively communicate both orally and in writing.

5. Creatively use modern information technology. Since research universities create new technologies and technological innovations, students should have the best opportunities to master them and be aware of means for the possible application of such technology.

6. Finalize undergraduate training with the defence of a scientific project. It is recommended that the last semester culminates with the execution of special research work on the basis of the research and communication competences that have been gained.

7. Teach Masters as potential lecturers. In this context, research universities must consistently review and update their teaching programmes, thus training masters in the teaching profession.

8. Create a strong system for stimulating lecturers. Research universities must be responsible for the highest standard of learning and conducting research, for which it is necessary to develop and implement effective systems for the material encouragement of scientific-pedagogical workers.

9. Develop an active scientific community atmosphere at the university. This aspect is not yet fully taken into account by modern universities, in particular in class work. It is considered that an active scientific community is formed under conditions, whereby during the learning process, students reach collective goals, a general purpose and professing the same values. It is under these conditions that students generate the greatest learning productivity and motivation.

As world experience shows, the formation of an effective scientific community as a key factor for accumulating the research competitiveness of the university is possible in the following key directions:

— the use of specially designed class premises;

— the application of information technologies for the establishment of contacts and cooperation.

A vivid example of such favourable learning environment is the modern learning office of London School of Economics and Political Science. This complex of classes is a replica of a real business office, where specialized types of class studies are conducted for students, with the participation of representatives of firms and companies, which, within a simulation regime, allows the recreation of business processes and on the basis of this, students can learn to take one decision or another. In addition, the office serves as a place for conducting joint government seminars, scientific forums, fulfils the function of an advisory centre, with the extensive involvement of the student body. In essence, it is the university's modern innovative laboratory.

An example of the rational support service of the learning process is Harvard University. Lessons at this institution are often conducted in auditoriums-amphitheatres, where up to 90 students can be seated at the same time. A name plate is placed in front of each student and lecturers can invite any student to a discussion, without moving away from the board. The auditoriums are equipped with parallel boards, which change in such a way, that there is no need to clean the relevant writing on them. The auditoriums also have video equipment with screens, which are used when required. In addition, each seminar is recorded continually by video cameras depending on the number of students, the recordings from which serve as proof of the activity of each student during the seminar, as well as material for

[1] Boyer Commission on Educating Undergraduates in the Research University. Reinventing Undergraduate Education: A Blueprint for America's Research Universities, 1998. — 53 p. *Available at:* http://www.eric.ed.gov

subsequent analysis by lecturers, representatives of companies and students. There are also live video transmissions of lectures on the Internet.

An important component of the system for the organization of class work at research universities is lectures. Many universities are developing general recommendations for conducting them and relevant materials are posted on their official sites. Thus, Stanford University has developed general recommendations for preparing and delivering lectures, the involvement of listeners in active work and particular significance is given to feedback after the lectures have taken place[1]. For the activation of class work during lectures, the lecturers at Stanford are advised, for example, to use small tests or other evaluation technologies, which check the understanding among the listeners of the goals of the lecture. Students, have to give one-two sentence answers to such questions: «What was the most important aspect of today's lecture? What did you not understand?» It is recommended that lecturers conduct such types of activities during several lectures, on which no more than 15 minutes are spent, but as a result, it is possible to gain a lot of information about the students. Also during the teaching, it is recommended that formative (continuous) assessments are applied mid-semester, or that questions are posed to students regarding relevant proposals and comments on a monthly basis, based on which it would be possible to efficiently adapt the teaching process. In addition, the university has developed a special programme — «Oral Communication Development Programme», which allows each employee and student to develop their communication and oratory skills, provides for the holding of diverse master-classes and seminars for improving the professional skills of the participants, etc.

Significant attention at US research universities is devoted to the integration of the research element into class work. To do this, as was shown by the generalizations we have conducted, the following effective combination of teaching and research methods is often used:

— the organization of so-called guest lectures, with the participation of colleagues or renowned scientific experts in one sphere or another, for the purpose of public debate with students on important aspects of research during a lecture;

— the use of special video materials, presentations or other materials during lectures which have been collected and prepared beforehand, pertaining to the issued being researched and reflecting the views of authoritative scholars in one sphere or another;

— the inclusion of the latest results of scientific research in the education programme in order to develop and discuss them during lectures and other studies;

— the development of a special package of scientific tasks for students, the purpose of which is to develop their skills for the professional review of literary sources, planning various types of scientific experiments, writing opinions, presenting scientific papers at conferences, the due execution of documents for receiving research grants, etc;

— engaging students for participation in scientific projects, specialized student scientific communities, internet forums and discussions, for discussing and developing important scientific issues.

For the purpose of researching the importance and level of the significance of the evaluation components in a university's class work system, current practices for the evaluation of educating students on the basis of a range of teaching disciplines, which are taught at world level universities, were studied and analyzed. Such indices as the share of class work (percentage of the contribution in the overall evaluation), compared with interim modules and final exam were taken into account (Table 2).

As a result of analytical research that has been conducted, it was determined that the class component share was quite high for the vast majority of the disciplines that were taken into account, and constitutes between 5% and 40%, and in individual cases, is the fundamental evaluation for the certification of a student of the discipline. At the same time, the final exam in the structure of the overall evaluation for the learning course constitutes 20—50%.

World practice for the development and use of information and communication technology (ICT) in education demonstrates a trend for the extensive inclusion of modern information and communication technology in class work. Together with these radical changes, the actual substance of education, educational methodology and didactic approaches are changed. Of the current world trends for the development of the informatization of education, it is worth paying attention to the principal ones:

— the development of open education;

— the active introduction of new means and methods of teaching, which are oriented towards the use of information technology;

— a synthesis of means and methods for traditional and computer teaching;

— the formation of a system for continuous teaching with the mediation of ICT as a universal form of activity, directed towards the continuous development of individuality throughout life as a whole.

[1] Lecturing / Center for Teaching and Learning. Stanford University — http://ctl.stanford.edu/handbook/lecturing.html.

Table 2

AVERAGE INDICES FOR THE EVALUATION OF THE CLASS COMPONENTS OF THE EDUCATION PROCESS AT WORLD CLASS RESEARCH UNIVERSITIES*

Teaching disciplines	Share of class work, %	Interim exams, modules, %	Final exam, %
Introduction to mathematical economics	5—25	30—40	35—45
Introduction to economics	10—30	30—70	20—50
Introduction to microeconomics	5—10	40—70	25—50
Global marketing	10—20	55—70	20—25
International economics	30—40	40—60	30—40
International finance	100 (there is no exam)	—	none

**Compiled* on the basis of the education programmes of research universities.

Experts interpret open education as being different types of educational activity, in which knowledge, ideas and important aspects of the methodology and organization of learning and teaching, which are freely extended and used with the help of information and communication technology. Since its introduction in 2000 open education has been one of the determinant trends of the development of the world higher education system and adult education in many countries. This is evidenced by both objective changes in education institutions and the teaching process, and ever more attention is being paid to open education by governments and international entities, education and scientific institutions. As noted by specialists, more than 10 years have passed since the decision of the Massachusetts Institute of Technology, approved in 2001, was made regarding the provision of open access to all of its teaching materials, but the principles of open education are increasingly becoming a modern standard[1]. Large scale initiatives for the introduction of elements of open education are today being implemented in dozens of countries, among which are both leaders (the USA and Great Britain), as well as countries, striving to make up the distance in the education and scientific spheres as quickly as possible (China and Vietnam).

The broad concept of open education is closely related to the active application of modern information and telecommunication technology (first and foremost, the capabilities of the Internet) in the education process and scientific research. In connection with this, open education particularly provides for:

— giving open access to educational and teaching materials (text books, manuals, courses, etc.), as well as the results of scientific research;

— the essential expansion of the opportunities for collective work within the framework of the teaching process on both the vertical lecturer-student level (as well as in long-distance education), and the horizontal level — between colleagues-teachers and lecturers in higher education institutions (as well as students and postgraduates within the framework of the resolution of specific educational and scientific tasks);

— management of the education process, based on modern computer technology, which opens extensive opportunities for the essential improvement of both the awareness of the public regarding the state of affairs in education and a significant growth in the efficiency of managing the education system at all levels.

Overall, the fundamental advantages of the application of ICT in university teaching and research practice lie in the capability to:

— combine academic and consolidation processes and control of the mastering of the learning material, which according to traditional teaching, are most often torn between themselves;

— individualize the teaching process, reducing the frontal types of work and increasing the share of individual-group forms as well as learning and teaching methods;

— promote increased motivation towards learning and the development of creative thinking;

[1] Opening up Education: The Collective Advancement of Education through Open Technology, Open Content and Open Knowledge (Edited by Toru Iiyoshi and M.S. Vijay Kumar) Translation from English by A. Ishchenko, O. Nasyka — K.: Nauka, 2009. — 256 p. — Access: http://vidkrytaosvita.org.ua/resources/vidkryta_osvita.pdf.

— economize on study hours;
— ensure interactivity, clearness and the better mastering of information.

At the same time information and communication technology will not squeeze out traditional methods and modes of teaching; it allows its methodology to come closer to the requirements of the latest university practice and the existing realities of today.

More specifically, a certain traditionalism is characteristic for the motivational factors of the teaching process, when interpersonal psychological relations and the attitudes of lecturers towards students are determinant.

Needless to say, motivation plays an important role in teaching students, particularly in the class work system. Lecturers should be aware of the fundamental means for adapting a teaching plan and class teaching methods to the requirements, needs and interests of the students, effectively motivating then to class work, in order for the learning and teaching process to be an interesting, fascinating and purpose-oriented activity, leading to the attainment of competencies. For this reason, modern researchers and experts devote considerable attention to the motivation component, proposing and developing their own approaches, principles and strategies for the motivation of students.

In this context, the classification of key principles for the motivation of students, developed by experts of the Centre for Educational Research and Innovation, OECD (Figure 4) deserves individual attention. The most important ones are cultivation at a university, favourable class environments where students feel competent to do what is expected of them; the existence of effective feedback between the lecturer and the student; the connection between the learning and teaching process and its results; the formation of such an emotionally saturated learning and teaching atmosphere, that the engagement of students stimulates a relevant intellectual process, etc.

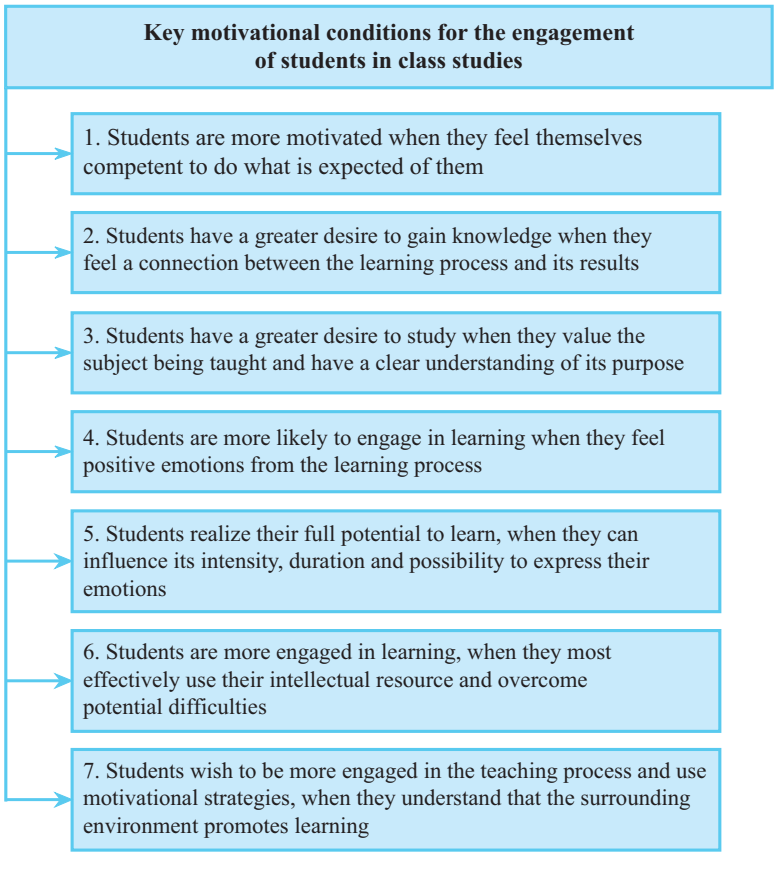

Figure 4. Key motivational conditions for the engagement of students in class studies

Source: The Nature of Learning: Using Research to Inspire Practice — Ed. By Hanna Dumont, David Instance and Francisco Benavides. — Centre for Educational Research and Innovation, OECD. — 09 Aug 2010. — P. 99—109.

Researchers have also developed many other theories for the motivation of students to effective class work. Particular attention should be paid to the theory supporting motivation by Jeremy Harmer (the «Five A's» theory). This theory largely focuses attention on the means to support motivation in the class in its five key elements format:

1. Activity — Students need to have a lot of good activities. Moving around, role-plays, hands-on experiences, singing/variety.

2. Agency — Students are more motivated when they are the doers, when they are the agents, intermediaries or lecturers, who delegate part of their responsibilities to the student auditorium, so give them some power to decide things when you can (the participation of students in the resolution of tasks, the execution of which is only designated for the lecturer — the presentation of teaching material, organization and management of processes in mini-groups, control of the learning and teaching process and participation in its evaluation).

3. Affect — How they feel. They need to know you care about them; you need to know their names. This stimulates their learning activity during the course of class studies (the lecturer should address students in a civil manner)

4. Adaptation — The teachers' ability to respond to the unexpected, which can emerge during class work. His/her flexibility and ability to adapt to changes in the teaching environment stimulates the increased engagement of students in learning.

5. Attitude — The teacher's attitude. The teacher should demonstrate high professionalism his/her sphere, in order for students to take in the material proposed to them with respect and interest (the lecturer who operates using the latest scientific research in his sphere during the course of class work, also skilfully and effectively uses modern education technology, calls forth greater fascination from students and a greater interest in studying).

Thus, in the current practice of world class research universities, the organization and substance of class work as a complex and multivariate system of actions and mechanisms, called upon to provide students with global competence, is of great significance. The key components of this system are: learning and teaching activity, the necessity for the priority development of which is determined in the strategic documents of many universities; methods for the activation of class studies, which allow the integration of the research component into the learning process; evaluation strategy and motivation conditions for the engagement of students in class studies. The scientific productivity of research universities and their international competitiveness depend on an effective combination of the indicated components.