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The Meaning Behind Concepts in Different Subject Disciplines and Cultures: Reflections on developments of Europe and of European Secondary Education

***Summary**: The article discusses the development of the content of secondary education in Europe in the context of globalization and the information society. The authors emphasize the urgency to move from education based on knowledge to education based on working with the meaning behind denominated objects. The authors argue that the methodological application of new pedagogical thinking and new technologies, a re-organization of the educational process, but also new educational content are methods and factors which can move knowledge-transfer forward. There must be a productive introduction of these methods and factors to pedagogy, a synthesis of existing practices of interdisciplinary teaching and the use of the unrealized potential of modern information technologies to build an original model for the world of European education. To achieve this, a new project for a European educational network is necessary. It will provide not only economic and social integration, but also intellectual understanding and cooperation.*
***Keywords:** informational technology, European educational network, the new content of education, subject and interdisciplinary learning, levels of learning content.*

***Zusammenfassung** (Alexander Yaroslavovich Daniliuk & Alla Arkadievna Faktorovich: Die Bedeutung hinter den Begriffen in verschiedenen Fachdisziplinen und Kulturen: Reflexionen über die Entwicklungen in Europa und die europäische Sekundarbildung): Der Artikel diskutiert die Entwicklung der Inhalte der Sekundarstufe in Europa im Kontext der Globalisierung und der Informationsgesellschaft. Die Autoren betonen die Dringlichkeit, von einer wissensbasierten Bildung zu einer Bildung überzugehen, die auf der Arbeit mit der Bedeutung hinter den benannten Objekten basiert. Die methodische Anwendung neuen pädagogischen Denkens und neuer Technologien, eine Reorganisation des Bildungsprozesses, aber auch neue Bildungsinhalte führen zu Methoden und Faktoren, die den Wissenstransfer vorantreiben können. Erforderlich ist eine produktive Einführung dieser Methoden und Faktoren in die Pädagogik, eine Synthese der bestehenden Praktiken der interdisziplinären Lehre und die Nutzung des nicht realisierten Potenzials der modernen Informationstechnologien; es geht um ein originelles Modell für die Welt der europäischen Bildung. Um dies zu erreichen, ist ein neues Projekt für ein europäisches Bildungsnetzwerk notwendig. Sie wird nicht nur die wirtschaftliche und soziale Integration, sondern auch das intellektuelle Verständnis und die Zusammenarbeit fördern.*
***Stichworte:** Informationstechnologie, Europäisches Bildungsnetzwerk, neue Bildungsinhalte, fachliches und interdisziplinäres Lernen, Niveaus der Lerninhalte.*

***Резюме** (Александр Ярославович Данилюк и Алла Аркадьевна Факторович: Значение на фоне терминов в разных дисциплинах и культурах: размышления о событиях в Европе и европейском среднем образованииЗначение терминов по различным дисциплинам и культурам: размышления о событиях в Европе и европейском среднем образовании): В статье рассматриваются вопросы развития содержания среднего образования в Европе в условиях глобализации и информационного общества. Обосновывается актуальность перехода от образования, основанного на знаниях, к образованию, основанному на работе со смыслами. Авторы доказывают, что универсальным методом нового педагогического мышления, новых технологий*

организации образовательного процесса, нового содержания образования может стать метод перевода. Продуктивное введение этого метода в педагогику, обобщение сложившихся практик междисциплинарного обучения и использование нереализованных возможностей современных информационных технологий позволяет выстроить оригинальную модель европейского образовательного пространства, основой формирования которого является европейская образовательная сеть. Европейская образовательная сеть представлена в статье как новый проект, который может дополнить политическую и экономическую интеграцию Европы интеграций интеллектуальной.
Ключевые слова: *информационные технологии, европейская образовательная сеть, новое содержание образования, дисциплинарное и междисциплинарное обучение, методология смыслообразования.*

Social and economic challenges and education

The creation of a united Europe is an important factor in the successful social economic and cultural development of its constituent countries. Each country has a rich history and culture. Integration is intended to accelerate their further development. At the previous stage, the integration of European states had taken place mainly around economic and political issues. However, in order to solve the problems which a united Europe is facing today (low rates of economic growth, migration challenges, the threat of disintegration), it is necessary to set up a system of sociocultural, spiritual, and moral orientations that are understood and accepted by all Europeans. The weakness of pan-European consciousness significantly reduces real possibilities for development of the EU.

European culture is capable of strengthening and enriching a modern pan-European consciousness. Education is a basic social technology for supporting cultural development. In the context of a post-industrial society, a knowledge-driven economy, the information society, globalization and multiculturalism, its role is taking on key importance. Education ensures the accumulation and development of human capital, the main productive force of an innovation economy, and develops values, motivation, competencies, ways of thinking and human activity.

European history clearly demonstrates a direct relationship between the economic and cultural progress and the qualitative development of education. When responding to internal and external challenges with the creation of a new education system, which in turn was stimulating an intensive development of the arts, philosophy, politics, science and technology and enhancing the quality of human potential, Europe was rising to the new heights of its historical development. The challenges Europe is facing today are not just about the development of education, but its profound reformation, which is of no less significance than such historic modernization as the establishment of universities (12th century), the class-and-lesson system (16-17th centuries), the research university (19th century). The development of culture and European consciousness requires that economic and political integration be complemented by integration of education at all its levels and on the basis of the latest educational technologies. This requires a new paradigm of pedagogical thinking, new approaches and methods of organizing the educational process, and most importantly new content.

Educational content in the context of globalization and the information society

Most reforms in schooling have recently been aiming at improving the conditions of education and introducing the new technologies. The critical issue for evolving reform is educational content. This is due to a significant change in the understanding of its role in the global information society influenced by changing attitudes to knowledge. Two issues are of fundamental importance: who produces knowledge and for what purpose? The information society is not only a system of social relations based on knowledge. It is a society that eliminates the rigid division of those who produce new information and those who consume it. New knowledge is not born in scientific backrooms. In ever greater amounts and with ever greater intensity, it is produced in a very real open innovation activity. This activity democratizes the processes of gaining new knowledge and involves almost countless representatives of different social groups. An innovation-driven economy turns knowledge into a tool for transforming real-world objects and relationships and gaining new knowledge.

In the current context, the core content for education should not be knowledge per se, but rather students' intellectual and subject-based practical activity grounded in knowledge, i.e. knowing how to get at knowledge and then what to do with it. Rational knowledge within the system has been and will always be the foundation. But activity is not limited by that. Activity can be performed with a lack of knowledge, but it is unlikely, if not impossible if it is not meaningful. Assessing the effectiveness of higher education, Gary M. Galles notes: «If the students don't find meaning in what they are taught, then no reform of content will be able to stem the growing tide of mediocrity» (Galles, 1993, slightly paraphrased). It is meaningfulness that gives rise to a need for activity, its motive and purpose, and determines a choice of means and conditions. Implementation of an activity-based approach to education objectively introduces the most important categories of pedagogy (Данилюк & Факторович [Daniliuk & Faktorovich], 2017).

In traditional didactic systems, the main components of content are knowledge, skills and experience in their application for a more solid and conscious learning. Within the boundaries of an activity-based paradigm, the structure of learning content is substantially changed:

- ***meaning and meaningfulness*** (a basis for knowledge and its acquistion)
- ***knowledge*** (a basis for skills)
- ***skills*** (components of activity)
- ***initial experience of the real activity*** (shaping a meaningful attitude to the world and oneself)
- ***new meanings arising out of activity*** (a basis for responsible human activity and independent thinking).

The principle of the unity of knowledge and action as the prerequisite for conscious (meaningful) learning is essential for the new European secondary school. It has proven to be effective in higher education: the Humboldt University in Berlin integrated learning, teaching and research work which led to the intensive development of Europe in the 19th century and on into the first half of the 20th century.

At the turn of the 19th and 20th centuries, J. Dewey proved this theoretically and tried to extend this principle to secondary education in selected pilot schools in the United States. At the end of

the 20th century, a competence-based approach that established different kinds of human preparedness for action as essential learning results began to dominate in education. In the school system, research, problem finding, design and heuristic methods were actively developed and widely used. The second half of the twentieth century and the first decades of the twenty-first century have been marked by the concept of interdisciplinary learning (Boix-Mansilla, 2010; Wineburg & Grossman, 2000; Fogarty & Pete, 2009 and others) which is seen as a condition for addressing complex philosophical challenges and turning the learning process into a conscious sense-making activity.

The demand for a new education which content would be activity-based is clearly stated in the report by Jacques Delors "Learning: The Treasure Within" (Delors, 1996) which defines four key human challenges in the 21st century: learn to perceive, learn to do, learn to live together and learn to live. "Learning to perceive" meaning, to embrace the known for discovering the new. "Learning to do" meaning to integrate theory and practice. "Learning to live together" meaning, to work together for a better real future. "Learning to live" meaning to continually expand the limits of one's existence, to embrace the whole world by one's consciousness and activities, comprehending and appreciating each of its manifestations at the same time. The four fundamental theses of the European pedagogical thinking of the 21st century indicate that the learning content is developing through interaction with science ("perceive"), practice ("do"), society ("live together"), and through the fullness of one man's real life and his opportunities ("live").
The change in the principles of building-up educational content should be based on a new methodology - a sense-making methodology. However, numerous studies on the problem (a detailed analysis of its results is done in the work of E. Spelt, 2015) provide mainly descriptions of selected successful practices and models: evidence-based learning, outcome-based learning, learning to provide competency in problem solving, critical thinking and etc. V. Boix-Mansilla points to the lack of a common conceptual foundation, a methodological platform, a theory explaining the nature and the patterns of integration in education (Boix-Mansilla, 2010). Attempts to rely on the ideas of the neo-Piagetian theory, neo-positivism, the theory of coincidence by Wilson, E. (Wilson, 1975) or the computational theory by S. Wolfram, (Wolfram, 2002) happened to be ineffective. The solution to the problem is seen in the theory of translation as a principal method of sense-making.

The theory of translation as a conceptual basis for sense-making

Meaning has never before been considered as part of learning content by classical didactics. This situation is paradoxical, as everyone understands the importance of meaning for life, consciousness and activity, and no one will claim that education can be meaningless. The reason is that education has so far not had any easy and reliable technologies to process meaning which might be applied in a mainstream school to guarantee better learning results than the technologies for working with knowledge.
Pedagogical meaning processing begins with the understanding that meaning does not equate with knowledge, although it is deeply related to it. Knowledge of an object (event, process, state, phenomenon, etc.) is the information about it expressed in a particular language ("language" in this case refers to any familiar system: the languages of science, philosophy, religion, art, etc.). Knowledge of an object depends on the language in which it is presented. Digesting knowledge, we learn the contents behind the characters or signs of a particular language. However, the entirety of the object is lost because each language system gives one view of the object. In one

language, there is system-based knowledge of some object, in a second language - a different knowledge of the same object, in a third one - another knowledge that is substantially different from the first two languages and so on. It is for this reason that in the traditional practice of subject education, one and the same object which is considered in the discourse of different sciences is often perceived by students as different unrelated objects. Because of the "fragmented" presentation of an object, it is difficult to discover its meaning — what is behind different characters and forms of expression. Students do not have an understanding of the entity properties of an object, of a single base expressing its uniqueness.

Knowledge-based activity allows you to work with particular qualities of real-world objects. Meaning-based activities cover an object as a whole, in the context of its relations with other objects and the world. To discover meaning, it is necessary to bring together different pieces of the knowledge of the same object in the space of thought and education. This idea is at the heart of an interdisciplinary integrative approach. However, an obvious need to harmonize and agree on the descriptions of the same object in different scientific fields is not always accompanied by an understanding of the specific technological pedagogical solutions to this problem, which are not limited to the mechanical compilation of information.

The theory of translation gives an answer to the question about a method to process meaning (Barkhudarov, 1975; Catford, 1965; Latyshev, 1918; Newmark, 1988; Recker, 1974, Schweitzer, 1988 etc.). In a classic definition, translation is an interpretation of the meaning of a source text in one language and creation of a new equivalent text in another language. Converting a speech product in one language to a speech product in another language occurs when the essential content is retained unchanged. The character systems of different languages are treated as tools for the expression of a single meaning. An adequate and complete translation results in a correct, accurate and full delivery of the particularities and the content of the original. An interpreter operates in language characters, but it is meaning not words (characters) that translation aims for. Translation is frequently metaphorically referred to as a form of language mediation, and its purpose is to draw together multilingual information as tightly as possible in order to recognize a common ground hidden behind the diversity of the forms of its expression. Translation is possible due to an invariance of meaning. Translation is a process internally separated and spanning two major phases: a phase of comprehension when an interpreter analyzes an original text in the light of sense (semantic) intent, and a language reconstruction phase when the interpreter reproduces the semantically analyzed original text with the best possible consideration of the requirements of communicative equivalence. In essence, in the first stage of the process, translation separates the form and the content of the signs, releases the content from the language tools and provides access to its meaning. In the second step, this meaning gets expressed in a new form with additional nuances deepening and detailing an idea about the object.

The same patterns apply in cases where we use translation as a sense-making tool in the learning process. The meaning of an object lies at the heart of all the knowledge about it. This meaning is defined at the borders of different languages in the process of translation from one language into another. If a certain knowledge of an object that exists within the borders of the language of a particular science is consistently translated into the languages of other sciences, it becomes increasingly complete when transcoding the information, and is liberated from numerous and different linguistic forms. The more diverse the languages are, and the more acts of translation occur, the better, the cleaner and the clearer the meaning becomes. Meaning is an ideal content, knowledge without its symbolic casing (capsula).

Technologies to process meaning are based on two key conditions: semiotic heterogeneity (a variety of sign-oriented systems); understanding and objectification of a common ground de-

scribed in different languages (Lotman, 1992). In other words, keeping an object's unity under changing methods of its comprehension. In the education system, the first condition is met and expressed through the differentiation of educational disciplines, and the second, if met, then formally. On the one hand, the requirements for the results of modern education are formulated through key competencies of a super subject nature; on the other hand, curriculum documents of particular academic subjects are planned and implemented independently of each other. Interdisciplinary relationships, integrative courses, multicultural learning technologies (EdTech, edutech), a project method, a modular organization of the educational process, which are different didactic forms of sense-making based on translation, still remain local practices. The reason that meaning has not yet been foregrounded in pedagogy lies in an extraordinary sustainability of the classical knowledge-reproductive paradigm of pedagogical thinking for which technologies to process meaning are only conditions of conscious and lasting learning that does not have an independent pedagogical value.

New ways of meaning processing in the context of globalization and informatization

In today's environment, it is not meaning that is a means of knowledge acquisition, but knowledge becomes a means of meaning processing. Translation is objectively asserted as the leading way of educational and social activity. Globalization, economic and political, is reinforcing these processes. Translation allows you to work with information simultaneously in different languages (in different coding systems), solve problems by combining different mind plans of reality, modes of operation, and ways of thinking. In a globalizing world, the most productive culture is the one that carries out the largest number of acts of translation.

Globalization gets cultures closer together, brings them into a state of dialogue and openness, and provides an understanding that there are different answers to the same questions in different cultures; that the same objects are recreated in different ways by different languages belonging to large and small social groups. Globalization objectively creates a need for integration of different knowledge and languages and changes the goals of education: in the global open world, the pedagogic ideal is not a person who has got broad knowledge, but a person who can creatively work with knowledge. To do so, one has to master its primary source - meaning. A person who understands the meaning behind an object is capable of generating new knowledge about it and improving the object in practice. Meaning processing has got a distinctly innovative nature.

The education whose content is based on meaning fully ensures the development of a pupil's personality, the qualities of his such as creativity, responsibility, preparedness for self-development, a creator's attitude to his life, an ability to criticize, readiness to integrate different activities and forms of consciousness, etc. Rapidly evolving information technologies can fulfil the potential of such education. Their widespread application has led to the setting-up of an Earth Global Information Network in which all cultures are immersed and intensively working. A person from any place on the planet can receive knowledge in any of the existing languages any time.

The concept of European Educational Network

The term "education network" is not new to modern pedagogical thinking. It means a relatively stable system of individual or collective actors who facilitate the teaching learning process and

provide each other with educational resources to improve the quality of education. The concept of " education information networks" and the close notions of "education resources of the Internet" and "informational and educational environment" are also quite widely used. The Internet provides a great opportunity to quickly draw additional learning content and to facilitate a distance learning process. However, the education networks functioning today do not have any new pedagogical content. They entirely remain in the frame of classical education. Distance education programmes reproduce the content of the full-time education programmes. Their undeniable benefits are a low price, accessibility from anywhere in the world, choice of convenient learning time, extensive self-monitoring and even the use of audio-visual and multimedia resources, and they do not affect the content, methods and results of learning in principle. The electronic textbook is the digitized contents of the paper textbook supplemented by a variety of applications, reference (clickable) links to move from the main text to additional content, audio-visual and multimedia content, as well as "simulators" for knowledge self-testing. An online electronic textbook is richer in information, more colourful and more accessible than a regular one. But neither in it nor in distance educational programmes are there any fundamentally new pedagogical decisions. The process of education continues to lie in the logic of classic knowledge-based learning with its subject-centered nature. Existing Internet education, from a pedagogical point of view, copies the content of traditional education.

The term European Educational Network (EENet) is introduced by the authors. The term has a different concept and is organized as a pan-European secondary education system based on modern educational technologies and has a new content whose elements comprise meaning-knowledge-skills-experience in the real world. The EENet is a fundamentally new stage in the historical development of European secondary education. There is nevertheless a continuity with respect to education systems in each country, and the classical tasks of learning from comprehensive scientific knowledge are fully addressed.

The EENet is building on the current national secondary education systems. Its mission is to significantly enhance their pedagogical capacity. This is achieved through the extensive translation of knowledge, which is initially absorbed within the boundaries of a particular academic subject, into the languages of other academic subjects, as well as other cultures. The EENet opens the content of each academic subject for all other subjects, the content of each culture for the content of other cultures. In doing so, a systemic subject-based organization of the learning process based on science, consistency, accessibility, and other principles of classical didactics is fully preserved. In addition, there are possibilities for the follow-through meaning processing. Education is elevated to a level of consciousness that is fundamentally unattainable in the knowledge-based education system.

The technical basis for the EENet is the Internet. The Internet and its informational educational technologies are changing the format of education. The content of different cultures, different academic subjects and educational programmes is brought to a common formal ground - a digit and then recreated in a virtual space on a common digital ground. This greatly facilitates the translation of knowledge from a language of one culture (academic subject) into the languages of all other cultures (academic subjects) while preserving the traditional systemic organization and the formal autonomy of the cultures themselves, education programmes and within them - academic subjects. Informational and educational technologies properly handled provide a systemic learning of subject knowledge based on a deep and independent comprehension while translating this knowledge into other languages of education and culture.

The Internet itself is no more than a network of servers and computers, as well as their software. In terms of its own content, it is still in its early stages of development, the essence of which can be characterized as a mere reflection of the present and the past events. All that is happening in the world, in societies, in cultures, in social relationships, in thinking, and even in our subconscious is reflected in the Internet so quickly, comprehensively, and unwittingly, which often leads to the confusion of good and evil, high and low, culture and anti-culture, human consciousness and animal psyche. Reality is reflected directly because of the diverse activities of people who use the Internet to achieve their even more diverse goals. A direct reflection of the reality in the virtual space, considering the entire complexity of its relationships, results in an irregular and even chaotic nature of the content, which is the price for the freedom of access to information. To implement the pedagogical capabilities of the Internet, an appropriate software is required. Without it, it is a mere repository of a wide variety of information.

On the formal and technical side, the EENet is a comprehensive social and pedagogical programme fully actualizing the educational opportunities of the Internet. It is being developed by the European scientific and pedagogical community and other communities concerned on the basis of European cultural and educational traditions in order to qualitatively update the content and technologies of education and to open and facilitate new opportunities for the development of the personality of a European citizen.

General organization of the EENet

The EENet can be imagined as a core and a periphery (circle). The core is a system of servers that store the secondary education content. The periphery is made up of all secondary education organizations connected to the informative core of the EENet, as well as remote students who are taught on individual educational programmes.

The EENet organization begins with the setting-up of national education networks. A European country that has decided to fully implement the activity-based approach in secondary education sets up a specialized server system (core) and connects all schools to it in such a way that every student has got free access to the digital content of education at school and at home. The cores of national education systems are technically and pedagogically integrated into a pan-European network of servers. This provides every student with access to the cultural content of other countries and of European culture as a whole under the terms specified by the educational programme he/she is currently using. This EENet structure retains existing organizational autonomy and the national cultural identity of each national education system. In addition, it opens up national education systems for one another, and thus fills the European education system with new content.

The content of secondary education is recreated on the servers of the national education network. It is structured in levels and educational programmes, in curriculum documents and per lesson. The transfer of the content to cyberspace completely retains the classic systemic structure (lessons, subjects, and programmes) while forming a supra-subject integrated content.

With all the innovation, the EENet is moderately conservative. The existing school systems are fully retained in a meaningfully new European education system. The school continues to operate in its normal mode. Renewal of organizational structures and management systems cannot be seen as an innovation activity to set up a new European school. This activity is entirely focused on the content. Only the content must be changed qualitatively, and everything else is a matter of the natural evolution of education.

From a technical point of view, there are no obstacles to launching the EENet; it is only an educational segment of the already existing Internet, to which all collective and individual actors concerned are connected. Innovation activity begins after the content of different lessons, academic subjects and educational programmes have been put on the Web (virtual space).

Levels of learning content

The initial (basic) level of learning content is generated by translating the contents of all secondary education programmes implemented within the boundaries of a particular national education system from analogue to digital format and placing it on specialized servers. To a large extent, this work has already been carried out. Not only university professors but also school teachers post their teaching and resource materials on the Internet. There are a number of e-schools and other forms of distance secondary education.

The problem is that posting of curricula, the contents of lessons and student courses, other materials and even setting up distance (mobile) e-schools is not linked up with the learning content update. Digitization of the existing content is the first - subject-based - level of the learning content on the EENet. It ensures full continuity to the traditional education system. At this level, the content is structured in academic subjects; the learning process is organized on the basis of the classic didactic principles of scientific validity, systematic approach, accessibility and consistency.

The second level of content structure is interdisciplinary. It is achieved through the establishment and continuous development of broad systems of interdisciplinary relationships. They are fixed for each academic subject and each lesson. Interdisciplinary relationships ensure translation of a particular knowledge existing within the boundaries of a particular science into the languages of other sciences, not forgetting the application of tools obtained when studying one subject in order to meet the challenges arising when studying another. While translating, a new level of the learning content, i.e. sense-making, is beginning to develop. The teaching and learning process is evolving into an activity-based paradigm as students use knowledge under conditions different from those under which it was obtained.

The possibility to translate a particular knowledge from one language into other languages is technically provided by reference (clickable) links. For example, an elementary school pupil is studying the concept of a number. In mathematical terms, he/she is getting an initial information. To comprehend the nature of number deeper and understand its meaning, one needs to refer to its description in other culture terms, for instance, in terms of literature, painting, informatics. On the EENet, a definition of the mathematical concept can be "translated" into the languages of other subjects by clicking on a reference (clickable) link. In the meantime, a depth of understanding of the concept under study (formally, the length of a chain of interdisciplinary relationships) is defined by a student him/herself, and a motivation for his/her learning activity is the meaning that he/she keeps unmistakably discovering for himself and others upon any further act of translation.

Neither the interdisciplinary relationships, the effectiveness of which is obvious, nor the reference (clickable) links widely used in e-textbooks are in themselves new. However, the traditional education system sets up considerable limitations to their application. It is difficult for a single teacher to develop an interdisciplinary content and to build interdisciplinary relationships which are responsible for the comprehension of the content of a particular academic subject.

The EENet is a way to solve these problems. Interdisciplinary content is worked out by large teams of different professionals as deeply and systematically as the content of subject teaching and put on the Web. The teacher starts working with already complete and extensive system of interdisciplinary relationships. In order for the pupils to easily "translate" definitions into different languages and the teachers to formulate a problem that assures such translation, the interdisciplinary (sense-making) content is identified and agreed upon by experts and then presented in the sign (character) expression of different teaching languages. The establishment and continuous development of interdisciplinary relationships provides an opportunity for a substantial refinement of the content of particular academic subjects.

The third level of learning content on the EENet is the level of integrative courses. It is a well-known pedagogic form which is commonly used as a complement to subject teaching in order to develop holistic representations of the world, interdisciplinary integration, a rise in awareness of learning. In the cyberspace of the EENet, integrated courses function as a special pedagogical system on an equal footing with academic subjects. An academic subject reproduces the content of a corresponding science, the form of public consciousness and activity etc. Interdisciplinary relationships are formed around particular concepts that are equally relevant to different sciences and academic subjects. An integrated course is complex and combines a system of concepts characterizing an object (phenomenon, event) of the real world. The meaning of each concept is defined through a corresponding interdisciplinary relationship. Thus, the object is reproduced (mirrored) at three levels of the content: (1) knowledge of the object's particular properties, (2) interdisciplinary knowledge of the object, (3) the raison d'être of the object. When performing set tasks, students can translate the meaning of the object (occurrence, events) under the study defined through a series of translations into a new sign reality creating its new form on their own. They learn to think and act as responsible intellectual subjects working with real objects based on understanding of their raison d'être in the world.

It is virtually impossible to fulfil the potential of the integrative courses in the traditional education system. To develop them is a complex task because it requires broad interdisciplinary competence and can be carried out only by large teams of specialists in different fields. This problem is easily solved on the EENet. Integrative courses in large quantities are put on the Web at the stage of their development. Each of them has got multiple reference (clickable) links from different academic subjects providing access to any course for teachers and students.

The fourth level of learning content are integrative humanitarian educational systems. An integrative course simulates a real object and motivates students to knowingly process it. An integrative educational system recreates a certain culture. It takes on a large amount of teaching time and includes many humanitarian subjects. The cultures of large and small social groups are recreated from the contents of different humanitarian subjects by synchronizing their curriculum documents, building systems of interdisciplinary relationships and integrative courses reflecting particular cultural events.

Each teacher knows from their experience: in order to understand a historical fact, it is necessary to know its artistic, religious, mental, economic and other contexts; to understand a piece of art, you need to know the content of the historical epoch when it was created. However, it is virtually impossible to holistically conceive any culture in the frame of a particular subject or a large number of unrelated subjects despite an understanding of the need to meet this challenge. The EENet makes it possible to combine the content of humanitarian academic subjects; so that this combined content reproduces on the system level a particular culture in the completeness

of its historical development from its inception to modern times through various humanitarian subjects, interdisciplinary relationships and humanitarian integrative courses.

The human development of an elementary school pupil naturally begins with the study and reflection of the culture of the community to which they belong, namely, their family, their city (settlement) and their homeland. In the next stages of secondary education, cultural spaces are expanded: a culture of the people, the multi-ethnic nation, the country and other countries. Each of the cultures recreated by the educational system is part of a different culture: family culture → culture of the urban (rural) community → culture of the homeland - culture of the people → culture of the multi- ethic nation→ culture of humanity. A humanitarian educational system is organized as a non-linear set of humanitarian educational sub-systems.

The fifth level of learning content is a didactic dialogue of cultures. The four previous levels of the content can be implemented within the boundaries of national education systems. Each country sets up its own education network, gets all actors concerned connected to it, defines both subject-based and interdisciplinary content, and a system of integrative courses. In an educational system, a national culture is recreated in the diversity of its sub-cultures. The existence of a united Europe requires the integration of all national education networks into a pan-European educational network - the EENet. This creates a holistic, highly differentiated, high-tech EU digital educational system. It does not interfere with the traditional system of secondary education. On the contrary, it reveals all its possibilities and ensures the conscious acquisition of systemic scientific knowledge, deep cultural identification and the development of a willingness to act in the real world.

European culture is historically emerging and developing in the dialogues of the cultures of European peoples and other social groups and in various inter-cultural communication processes. Europe is a unique socio-cultural phenomenon. Neither a single state nor a single religion forms its basis. European unity has historically been supported by a constantly evolving system of scientific knowledge, philosophical, artistic and literary traditions, social and economic interests, flexible systems of political institutions and social organizations. Multiculturalism lies at the heart of European civilization. However, it is technically impossible to develop its content fully and to fulfil its potential under traditional education.

The EENet will allow the development of the content of a pan-European culture that includes the cultures of large and small social groups. National educational networks are integrated into a single European educational network. A student can receive an answer to a certain question not only within the boundaries of one culture, but also in the content of others. The scientific, pedagogical and other communities of European countries define the spiritual and sociocultural phenomena which connect different European peoples into a single civilization in history and modern times. These may be important concepts of European thinking (truth, knowledge, deed, personality, freedom, etc.), historical events, contemporary problems and many other matters of importance to different social groups. The content of these phenomena is consistently developing in the contents of the various national education networks.

The EENet enables you to link questions and answers about key aspects of human existence raised and obtained in one culture, with similar questions and answers in other cultures. The integration of national networks provides the translation of similar ideas from one culture into another one. For example, a student is studying a topic of family relations. Doing so, they are fully immersed in the native literary language, culture and modern social relationships which

define a certain set of knowledge about the family and the corresponding variety of meanings. The EENet gives them additional opportunities: they can learn a lot about how family relationships are or were built in other countries and their cultures, both modern and past ones. Comparing culturally diverse views about the same phenomenon of life, a student achieves its complete comprehension.

The integration of different European cultures into a single digital educational system creates a new content of education and culture - the content of the pan-European culture developing in a continuous dialogue of the subcultures that influence its development. The EENet highlights, maintains, reproduces and develops the content of a united European culture in its historical and contemporary dimensions.

The principle of the dialogue of cultures can become a leading system-making component of the world educational network – GENet (Global educational network). Such a network, which covers all existing cultures in the future, may be based on the same method as the EENet: knowledge learned within the boundaries of one culture is translated into the languages of many other cultures of mankind. The GENet is necessary for the full functioning of the EENet: it provides the EENet with numerous, virtually endless cultural and educational contexts.

Democratization of the development of learning content

An important issue concerning learning content is the question of who develops it. Interdisciplinary relationships, integrative courses, a humanitarian educational system should be built into the structure of the EENet at its onset.

The content of traditional education is developed by an author or a small group of professionals who speak one language within one culture and have similar experience. This is the best way to prepare a manual or other teaching materials on one subject. The main actors in the content development on the EENet are large teams of specialists in different fields thinking in linguistically diverse cultures that interact with other similar groups; this is necessary to build interdisciplinary relationships, to integrate an academic subject into the continuum of the learning content, and to recreate objects of nature and culture.

In addition to these major actors, the EENet is in need of new actors to ensure continuous improvement in the learning content. As such, all the EENet participants can help. Every student is a co-author of their learning content. A true need to democratize content development greatly stems from its structure. Classic learning is based on objective knowledge whose status is fixed by culture. Such knowledge can neither be obtained by a student on his/her own; nor can they develop the educational content. It is a different matter when meaning becomes the main component of educational content. Meanings are personality-centered, and their processing by each student is the most important task of a new type of learning. The meaning obtained by one person is interesting and important to many other people. New meanings are eagerly sought after and enrich the content of the EENet. Each student should have a possibility to make his/her own sense and introduce it into the learning content.

The democratization of content development is ensured by a set-up of so-called "proposal sites". Students on the basis of their personal learning experience, teachers summarizing their pedagogical experience, scientists dealing with new scientific knowledge, and all other actors concerned who have new meanings and technologies for obtaining these new meanings can form u-

late their proposals for improving the learning content. These proposals are placed at the appropriate sites, assessed by the authorized experts and, in the case of a positive decision, introduced into pedagogical practice. This is the way for the learning content to develop constantly. The EENet is refined while in action; it is acting as an intelligent thing interpreting itself and continually developing its processes and its content.

The EENet: new opportunities for Europe

Technically, there is no problem in creating the EENet. Its content, that is indeed new. It will be necessary to reflect the entire European culture in the unity and diversity of the cultures of various social groups, in the continuity and innovation of the past and the present, in the unity and diversity of the different forms of social consciousness historically created by Europe: science, philosophy, art, politics, morality. This work, which requires the joint and significant efforts of different groups of European intellectuals and is supported by political forces, could become a new European civilizational project, whose content complements the integration processes that have been active in Europe in recent decades. The EENet makes it possible to work directly with the meanings of European culture. Students' self-awareness is centered on its meanings and values. However, the intellectual and spiritual connection with the culture of origin is kept. The dialogue of cultures at the level of their meanings offers further opportunities for the development of European culture.

The EENet makes it possible to tell meanings from knowledge. Within pan-European culture which, on the formal side, is a plethora of texts historically accumulated by cultures of different social groups, a conceptual core is beginning to actively develop. It provides a higher level of public consciousness, allows us to deal with the meanings as sources of new knowledge on the system level.

The EENet is a new pan-European civilizational project. In the past, such projects were: the creation of the EU (second half of the 20th c.), the research university (19th c.), the class-and-lesson system (17th c.), experimental natural science (17th c.) and other social forms of consciousness and activity starting with the historically first European megaproject, namely, the inception of philosophy and emergence of philosophical schools (4th c.) which laid the foundation for European rational thinking. Each of these projects significantly expanded the possibilities of European consciousness. Today's united Europe is in need of a new civilizational project that would complement a political and economic integration with an intellectual one giving a new impetus to the historic development of European civilization.

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