УДК 373.5.016:004.738.5

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MODEL OF CLOUD ORIENTED LEARNING ENVIRONMENT (COLE) OF COMPREHENSIVE EDUCATIONAL ESTABLISHMENTS (CEE) TEACHER

DOI:10.14308/ite000502

The rapid development of cloud services, their introduction into the system of secondary education requires the implementation of balanced pedagogical models for their mobility and optimal use during the learning process.

The article analyzes the current requirements for the learning environment, highlights the problems of pedagogical modeling and use of teacher's cloud oriented learning environment in the system of comprehensive educational establishments, analyzes the notion «model», «modeling», it is determined such definitions as services' «internal» and «external integration», «structural – integrative» model. There are described the requirements to the model, developed the base model of teacher's cloud oriented learning environment, which is based on the following components: system of websites, emails, bank of teaching materials, blogs, document repository, an internal social network, study groups, calendars, conference call.

This model can be a base for the comprehensive educational establishments of all types and forms of education, it gives a complete picture of the COLE's possibilities for teacher, it gives reasonable detailization for understanding the important processes within COLE, as well as provides educational mobility, communication, cooperation, teacher's collaboration with all participants of educational process.

***Keywords**: cloudy oriented, learning environment, model, teacher, model COLE.*

Topicality. Due to the rapid development of a comprehensive and practical application of information and communication technologies (ICT) in all spheres of human activity, formation of information society on this basis, put forward new demands to the learning environment of an educational establishments.

Cloudy-oriented learning environments (COLE) [5] have the most advantage in choosing them by comprehensive educational establishments: new approaches to the educational process, learning technologies, providing educational mobility, easily-accessible educational and developing content, communication, collaboration among students and teachers.

Significant savings on getting software; accessibility of resources, regardless of location of operating system, type of computer hardware; increasing of opportunities for collaboration and organization of various communication; reduce the problems of storage and data backup leads secondary education to the next level of development.

Along with the widespread implementation and development of cloud technologies there is a problem of pedagogical design of learning environments, development of different models for the optimal use of the opportunity of cloud services Office 365 to support the learning mobility of all members of the educational process.

Analysis of recent publications. The most scientific educational researches are aimed at developing a model of future teachers' training to their profession activity (eg works of Pantyuk M.P., Denisenko V.A., Shpytalevska G.R., Skorobohatova M.R.), some researchers consider the teacher's model as a mental image of original of ideal (perfect) professional which is as the standard in researches focusing on teaching profession (eg Tabachek I.V., Miroshnik Z.M., Soroko N.V.,

Sayuk V.I., Polishchuk N.M., Lola B.G.). We must note also that the model does not include all teacher's features, but only substantial. These are its advantages and at the same time disadvantages, which do not include specific practices, system of organization of students' learning activities, forming of interactive, cloud oriented learning environment, which today is one of the priority directions of secondary education development.

The problem of cloud oriented learning environments use is still a subject of discussion at the roundtables, UNESCO International Congresses, scientific conferences, have been evidenced by the results of research directions: the introduction of cloud computing, tendencies in the development of cloud technologies, software of cloud environments, the use of cloud technologies in open education that are disclosed in the scientific works of such scientists as: Bykov V.Yu., Zhaldak M.I., Zaporozhchenko J.H., Lytvynova S.H., Morze N.V., Seydametova Z.S., Spirin O.M., Shishkina M.P. and others. Foreign experience is presented by publications of Antonopoulos N., Armbrust M., Becker S., Butler B., Chen G., Nagel D. and others.

However, analysis of the research results of cloud oriented learning environments implementation demonstrates the lack of study the teaching modeling and its use in the system of comprehensive educational establishments.

The aim of the article is a synthesis of the concept "modeling", requirements to the models, design and specification of the teacher's model of cloudy-oriented learning environment for its implementation in comprehensive educational establishments.

Methods: analysis of theoretical sources of the problem of modeling, synthesis and evaluation of the results, summarize the terminology, description of the requirements to the models, modeling of the teacher's cloud oriented learning environment in comprehensive educational establishments, description of its basic and integrative structural components.

Results. Today's reality demands that a teacher is being changed all time responding the requirements of society, development of new technologies, global changes in the socio-economic situation in the country, diversification of the school system, school assignments and the role of teachers, increase the risks of educational environment, deterioration of students' health, intensification of society informatization, also teachers must ensure the effectiveness and quality of their work. These requirements must be performed in accordance with the implementation into the educational process such approaches as active, competence, personality oriented and formation of health-conserving, social and information and communication competencies.

Education becomes for the individual as a design of his life. Not learning problems are solved in their life, but rather vital problems are solved in education. The organization of the learning environment is determined by the plan, a project that the student develops and seeks to realize through education [8, p. 219].

In the transition to a market economy there are particularly important such teacher's qualities which became as professionally significant prerequisites for the creation of innovative learning environments, communication, cooperation, collaboration in the traditional educational process, which is reflected in the new requirements to modern teachers, namely: skills for using modern technologies of developmental education; to "see" pupils' individuals; to take into account age, individual characteristics of various categories of children (gifted, deviant, disabled, etc.) in the educational process; to improve the learning environment; to design a comfortable learning environment; to organize lessons in activity-paradigm; to design work in groups, pairs; to provide training support (maintenance).

Today, new information world has been developing, that makes the need for new models providing continuous access to data using different devices and modern information and communication technologies. These changes have a significant impact on our daily lives and secondary education in particular.

Simulation of cloud oriented learning environments fairly new phenomenon and the scientific community has not fully explored it.

Modeling procedure COLE CEE (cloudy-oriented learning environments of comprehensive educational establishments) is based at the major stages and components of the design such as

general, specific approaches and principles, that take into account the needs of teacher and learning features of school age students, new conditions for the use of didactics and teaching methods.

Features of COLE CEE are the design, operation, didactic, methodological components and passing the seven stages of design: problem-education; content-based; concept; component-evaluation; design and simulation; experimentally-corrective; estimation-synthesis [4].

In COLE designing it is incorporated complex use of information and communication technologies by teachers and students, so the modeling stage needs to develop several models (COLE for teacher, student, CEE, region, prospects for development, etc.) for more clearly and detailed presentation of innovation opportunities into the system of secondary education.

Pedagogical modeling, development of different models, variations of the usage of such innovations as COLE in secondary education, can help to create optimal conditions for co-operation, communication and collaboration for subjects of learning activities, which is fundamental to the full development of students and XXI century skills. Ample opportunities for implementing of educational objectives by teaching staff give the use of different models.

The term "model" is translated from foreign languages approximately the same – the layout, pattern (Eng. model – "layout, pattern, model") [11].

Model (French, model, Lat. Modulus) – a sample copy of any products; copy, reproduce object, usually in a reduced form; the object is presented in the most general form [9, p. 374].

Model (French, model from "measure, analog, sample") – a system of research which serves as a means to obtain information about the other system, is a simplified representation of a real device and processes, phenomena occurring in it [7].

Simulation (French, model) – method of study the phenomena and processes, based on the replacement of a particular item of research by other similar model; reproduction of object-plastic and spatial properties of the objective world [9, p. 374].

Modeling is a mandatory part of pedagogical research applied to learning the processes, properties and patterns of the system of education development, information processes, innovations, implementation of information technologies, learning environments, etc.

The modern teacher has sufficient computer skills, actively uses the Internet, systematically increases the level of information and communication competence, self-creating electronic learning materials, because they reflect the vision of the teacher in teaching a particular subject and allow to form various basis of electronic content, pedagogical professional experience, help teachers to improve their methodological level.

In developing its own electronic products, using available materials and the possibility of school, the teacher always has the option to choose a model of the learning environment [3].

According to scientists Bykov V. Yu. and Kremen V. H. to design a learning environment means theoretically investigate significant targeted and content-technical (methodological) aspects of the educational process that must take place in a learning environment, and on this basis to describe the required composition and structure corresponding to dynamics of the purposes development of its creation and use, and also some limitations of psycho-pedagogical, scientific, technical and resource nature [2, p. 7].

To investigate theoretically means to create a model that will give an idea of the future learning environment in which communication, collaboration and cooperation among members of the educational process by "eye-to-eye" and innovative means and methods of Office 365, online or offline will be implemented.

To create a learning environment means to build such student's object environment (surrounding environment), which takes into account and implement basic essential aspects of the educational process that needs to be done in this learning environment, and provide the adequate development of the environment in the dynamics of objectives development and constraints of its creation and the efficient and safe use [2, p. 7].

The same innovations, processes, phenomena can have many different kinds of models. To emphasize the features of the models, they are classified into static and dynamic, simple and complex, open and closed, homogeneous and heterogeneous, deterministic and probabilistic, etc. As

a result, there are many names of models, most of which reflect a solving of particular task or achievement of desired goal, so we give a classification and the specific types of models used in teaching [10, p. 48].

Information model – a set of data which characterize essential features and a state of the research object (process, phenomenon) or a description of the parameters and variables of the object, connections among them, the input and output data to simulate a possible state of the object.

Structural model – a graphical representation of the structural properties of the object.

Structural and parametric model – a structural model on a scale [3].

The functional model is designed to study the functional characteristics of innovation, displays of phenomenon, process or system operation, its purpose in the relationship with internal and external elements. Functional model is an abstract model.

Structural and functional model – a graphic description of the functional characteristics of innovation, displays of the phenomenon, processes [11].

Activity model (principal model, conceptual model) describes the essential relationships and properties of the research process (eg educational), environment or a system. These are the fundamental principle positions, which are a base for designed activity or research process.

Structural and activity model – a sequence of milestones of the work, a set of procedures, use of technologies, interaction among participants of the process.

Structural and integrative model – a graphical representation of the basic structural properties of the object with the possible integration of the various components (services) to uncover additional opportunities and completeness of their use (eg for training purposes) in the reality.

Requirements to the models:

- visibility, which gives complete (partial) understanding of a study object,
- appropriate detailization to understand the important processes, qualities, relations within the object,
- accuracy of the model, the level of coincidence of the results according to specific purpose of designing,
- versatility of the model, application to a number of the same type of operation, which will apply the model to address a wider range of tasks.

To determine the development prospects of an object, we consider the structural model of teacher's cloud-based learning environment of CEE, which graphically describes the basic components and connections among the Office 365 (Fig. 1).

The base model of the subject of cloudy oriented learning environment includes the following main components: system of websites, email Outlook, selection of teaching materials, blogs, document repository OneDrive, access to social network Yammer, different groups, calendars, conference call Lync and provides the training mobility of all learning process participants [6].

Sites system (from Eng. Website – the place, pages on the Internet) we consider as a set of web pages specifically designed for the learning environment and available in the COLE.

The site is created as a tool for networking interaction, which provides educational activities of all educational establishments subjects and combines the data collection, handling, processing, publishing with the process of interactive communication and provides a presentation of actual results of an author or group of authors activities. The author of the site is liable for problems concerning placement, removal or upgrade of outdated data.

For example, the website "Teacher's visiting card", contains the following sections: brief information about himself, description of his work system, length of work, status, photo, plan of extracurricular activities, photo albums, guestbook, feedback, news, announcements to parents and others.

Site "Documents" should contain both personal documents and documents that are in the common domain. Therefore, it is important to structure the data system folders. For example, "Working Documents", "Shared Documents". The main documents may include: methodological

and regulatory materials for subject teachers, calendar of thematic lessons planning, lessons design, presentations and so on.

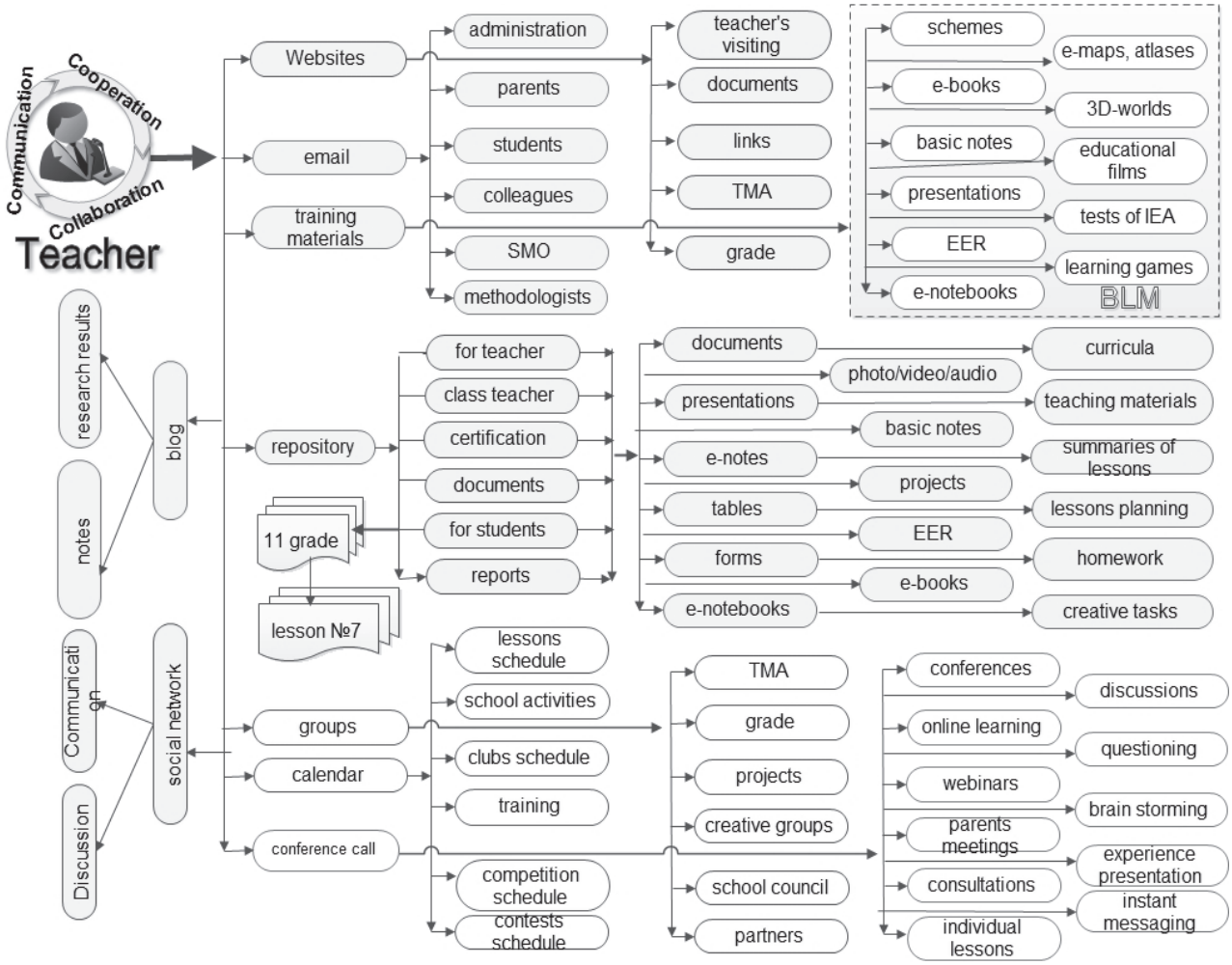

Fig. 1. Basic model of cloud oriented learning environment of teachers

Site "Links" – a system of hyperlinks to important sites, portals, search systems, educational sites, electronic reference books, encyclopedias and more. By using this site, you can teach lessons quests, search for "artifacts" or "treasure", to perform reading and translating texts by native speakers and more.

Site "Teachers' methodological association" (TMA). It is created and accompanied by the head of methodical association of subject teachers or his deputy. The site has posted actual data regarding the association of subject teachers usually for current year: TMA work plan, schedule of meetings, dates of subject Olympiads etc.

Use of COLE in the TMA work helps in the realization of collective forms of methodological work: an analysis of open classes, work of creative groups, school for young teacher, school of the best teaching practices, educational workshop and more.

TMA is designed to create a system working with teaching staff, which should help to improve the quality of education and change the educational process, organize the work under a market economy and develop a teacher's individuality.

Site "Grade" It is developed by students of a particular grade under the guidance of the class teacher. This website reflects the class activity during the class time and overtime. There are posted photo albums, greetings the winners of competitions and contests, forums for posts and discussions, video films from the school life, results of the project activity and so on.

E-mail (Outlook) in COLE is both a tool of communication among the administration, parents, students, colleagues, members of the school methodical association, district methodologists and a tool for collecting homework, coordinating the phases of project activities, provide a personal advice or respond to variety of problems. To form the mailbox (a structure of corresponding boxes) teacher has to fit his needs. For example, to form a box "7A" and redirect all letters of all class pupils to this box. Thus, the letters with homework will not get lost in the stream of emails, and at once onto its destination.

Bank of learning materials (BLM) is created, filled and accompanied by staff (Methodologists) of research and methodological centers, information technologies centers. In BLM there are updated educational materials that are classified by Ministry of Education and Science of Ukraine, namely schemes, e-books, supportive notes, presentations, electronic educational resources (EER), e-notebooks, e-maps, atlases, references to the 3D-worlds (3D virtual learning environments), training videos, tests of IEA (independent external assessment), educational games. BLM can provide materials, presentations, teachers' video-lessons having been given by teachers who are being certified or another by their own desires. All members of the educational process of the school (district, city) have access to BLM.

Blog (Eng. *blog*, from *web log*, "online journal or diary of events") – a tool that allows you to easily and quickly share information over the network [1, p.69]. This is a site which is characterized by short records of temporal significance with regularly added main content – records, images or media. According to the educational needs it may be the teacher's notes, impressions, research results, etc..

Document repository (OneDrive) is designed to store all teacher's electronic documents. For uninterrupted and harmonious teacher's work in the repository, it must be clearly structured and single-type for all users of COLE of particular institution. It can be created following folders: for teacher, class teacher, personnel appraisal, documents for students, reports etc. Each of these folders can contain standard documents, presentations, schemes, forms, texts, tables, pictures, video, audio, supportive notes, projects, electronic educational resources (EER), books, curricula, teaching materials, summaries of lessons, lesson planning, homework, creative tasks. Therefore, to quickly search, teacher should place training materials only to the certain folder. For example, the folder "For students" holds classifications by "5", "6" grade of etc., then it is created a clear folder structure of educational materials for lessons "Lesson number 1" .... "Lesson number 31," etc. in the folder "Lessons".

Thus, the document repository can be presented as subject teacher's electronic professional portfolio.

Portfolio is one of the existing technology of activities assessment. Portfolio (Eng. portfolio) - briefcase, suitcase, bag, case. This is an individual portfolio of educational attainment, individual accumulated score in teaching activities of the individual.

Portfolio – it is also one of the methods of professional development. It is intended to systematize the experience gained by a teacher, his knowledge, to clarify the direction of its development, and objectively evaluate the professional educator [7, p.6].

Electronic professional teacher's portfolio has certain features: to systemize teaching materials and revisions, form an innovative learning environment, monitor the growth patterns of pedagogical skills, comprehensive demonstration of their achievements.

The Social Network (Yammer) – unique opportunity to create a protected social network of educational activities subjects for teachers and students discussions and communication.

The network functions: get acquainted with people who have common interests, share the best practices and achievements, to find experts who can help to solve the problem, share important news with colleagues that they need to work, to discuss important decisions and prepare for the changes, collect thoughts and ideas of the teaching staff members, to find valuable data and information to help you do the job faster, to communicate online.

The main features of network Yammer, which can be used by teachers: view talks, read the main news feed and groups, view colleagues' profiles, mark interesting records, share useful links,

publish relevant articles and news that may be use by others, meet the entries, post a reply, find current discussions, to conduct a survey to collect opinions and feedback from colleagues, to announce events, to inform colleagues about the upcoming events, send files, create groups.

This network allows you to create internal networks (groups). For example, a network of 7A grade students "Beavers", which makes possible to educate students in the ethics of network communication and network administrator (teacher) to perform distance monitoring of safety and correctness of communication.

The teacher has the opportunity to work in COLE with different pedagogical groups: methodological associations, a project team, creative team, school board, partners and various other groups. This grouping allows to provide documents and share them only to members of a particular group, to carry letters within the group, discuss current issues, collaborate on discussion documents, regulations, etc. A separate group may be parents of a particular class who were given the accounts in this COLE.

Calendars – the system of electronic planning of organizational process in the educational establishment. Calendars can be themed: timetables, school events, schedule of clubs, courses, trainings, competition schedules, contests. For example, a calendar "School events" is created by Deputy Director, filled by all the teachers of the school, and then given to share with all students. This planning allows the student to quickly and efficiently receiving necessary details about the events taking place or will take place in the institution.

Conference call (Lync) – a tool for online learning conferences, discussions, interviews, webinars, brainstorming sessions, parent meetings, presentations, consultations, individual sessions, instant messages. This system enhances teacher's possibilities on the organization of a full interactive learning environment beyond the classroom.

The advantage of using conferencing in schools is the possibility of inter-school events and competitions both at the district level and at the level of the city, region and country.

This model can be a base for secondary schools of all types and forms of education, it gives a complete picture of the possibilities of COLE for teacher and provides reasonable detailization to understand the important processes in COLE.

Providing of easy accessibility for students to teaching materials creates the conditions for implementing of multifunctional learning into the system of secondary education.

Multifunctional learning is a technology of education level differentiation that gives to each student who is learning in heterogeneous class, the opportunity to learn the content of a particular subject at a level he has chosen: standard, academic or specialized. The basic requirement is mastering of compulsory minimum content of all disciplines by each student.

Peculiarity of students training in accordance with multifunctional technology is the ability to change profiles in the middle of the school year or at the end of the school year that requires teaching staff to provide the student with necessary teaching materials, tests, practical work, etc..

Under normal circumstances of educational process organization – it is quite difficult, and in the conditions of COLE usage, the student has access to all training materials during the period of study according to multifunctional technology. Use of COLE in the educational process will allow the teacher to realize multifunctional training of all high school students. The versatility of COLE allows for various forms of learning (online, distance learning, etc.).

For disclosure of additional features, completeness, use and meet the growing needs of teachers ("everything is at hand"), additional resources and structured links to important sites for teachers, distance learning courses, news, education etc. are integrated into the basic model of COLE.

Consider a structurally integrative model as a graphical representation of basic structural properties of the object with the possible integration of the various components (services) to uncover additional opportunities in the teacher's work in the real world of an comprehensive educational establishments (Fig. 2).

Internal integration provides usage of additional support services within cloudy-oriented learning environment. External integration provides usage of additional services outside of COLE.

The integration of additional services into the base model can be implemented in two ways: "single entry" – internal integration and system of links – external integration. Single entry – this is the entrance to other cloud services on a single login and password. The system of links – forming a particular site in Office 365 for storing and structuring necessary links needed in educational process organization.

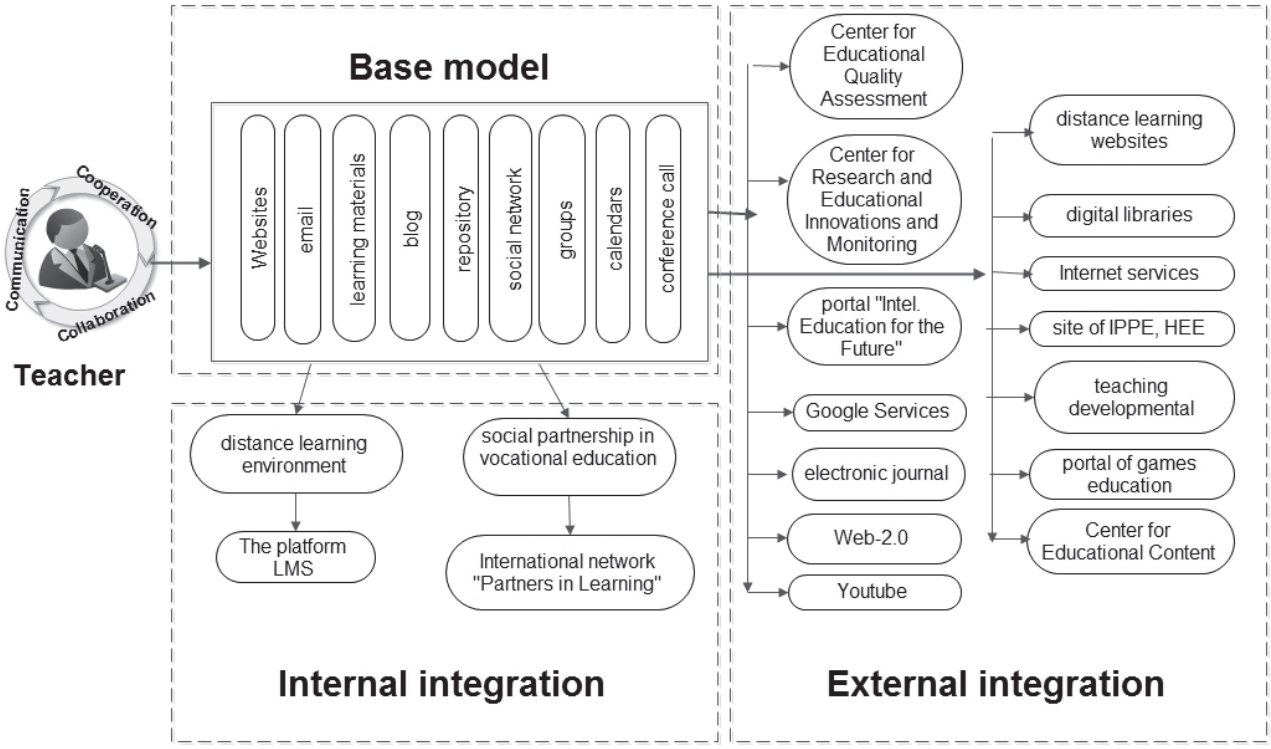

Fig. 2. Integration of services in the basic model COLE of teacher

The development of cloud services, increase of teachers' ICT competence level, all create conditions for use, for educational purposes, an international network of teachers "Partners in Learning" and the system of distance learning courses creation in Moodle, which makes it possible to make a "single entry".

In the international network "Partners in Learning" teachers exchange their experiences, discuss educational issues, present their educational experience, increase their level of ICT competence using various online educational programs.

Recently, it is appeared an opportunity to integrate Moodle into Office365 for creating distance learning courses for students, which was a positive response among teachers and innovators.

Creating structured site of links you must consider several factors: the subject of use, correspondence to training purposes, to meet the needs of subject, self-education.

The subject of use may be a teacher, a student, leader. Creating a model COLE must meet the requirements of security and provision of educational mobility, and therefore all that there (presentations, video, audio, photos, educational games, etc.) should meet the objectives of education and age characteristics of students. To meet the subjective needs of students or teachers it is necessary to provide access to certain sites. Consider the details.

Center for Educational Quality Assessment – students and teachers can access a test bank of external testing (http://testportal.gov.ua/).

Center for research and educational innovation and monitoring – placing information on the annual monitoring of the quality of education of 1-9 grades students in various subjects. For example, the study of physics in Grade 8 or mathematics in Grade 7 (http://www.monitoring.in.ua/).

Portal "Intel. Education for the Future" – for self-education and development, access to the bank's rating systems and technologies of the subject, the social project activity (http://www.iteach.com.ua/).

Google services – complex using a search engine, documents, virtual disk systems, system of construction of external sites and test tasks.

Site of the universities – a link to the distance pre-entry courses of higher education institutions (http://www.dn.npu.edu.ua/).

Electronic Journal – access of all educational process participants to Schodennyk.ua, where you can see the level of academic performance of each student, homework, tests etc. (http://shodennik.ua/).

Web 2.0 – a selection of popular services for interactive lessons creating .

YouTube – placement and selection of video tutorials.

Academy Khan – game version of study subjects in English. Apply to schools with bilingual education and self-education (https://ru.khanacademy.org).

Study of foreign languages is important in modern education. Selection of sites for distance learning and the use of tested, proven by teachers, methodologists of different courses is in addition to training in their free time.

Digital libraries – now come to the first position. Digitized books, set in the network, provide opportunities to students to timely and efficiently perform homework. They can read them whether on the subway or in the park.

Online Services – services necessary for interactive lessons creating .

Developmental games – gamification of learning process, electronic content, which is under heavy development and has some success among high school students. For example, MindStick (https://mindsticks.com/game) for elementary school students as well as middle managers.

Site IPPE – information about the competitions, contents, seminars and conferences is available at the site of Institute of Postgraduate Pedagogical Education and necessary as for teachers and students. (For example, http://ippo.org.ua/).

Center for Educational Content – a bank of electronic materials, which is formed by developers, publishers of different educational and developmental literature, is controlled at the level of the Ministry of Education and Science of Ukraine and provides access to educational process participants.

Active use of the Internet and various gadgets such as tablets, netbooks, laptops by secondary school pupils in everyday life forms new ideas about the organization of the educational process, particularly in terms of full access to learning materials and educational mobility.

New features like unlimited online conferencing, providing documents of different types and kinds online, creating conditions "all is at hand" promotes to changes in the educational process organization and in teaching methods. There are new requirements for the selection of didactic tasks (interactive, online realization, gamification), accelerate the process of implementation of various electronic educational resources (EER).

For students who attend school regularly, this model can be complementary (complements) and the main for those who do not attend school because of a long illness. Complementary learning environment helps to solve a number of educational issues including academic mobility, active cooperation, unlimited (protected) communication, creative cooperation.

Thus, the development of the most favorable conditions for a creative person (ie build for her effective, pedagogically well-balanced learning environment) means to make "almost everything" for student personal development and implementation of student’s potential and "almost everything" to get the best possible results of any activities initiated outside [2, p.8].

Conclusions. To create conditions for learning mobility, communication, cooperation and collaboration the modern teacher needs new learning environments such as cloud oriented. Different objectives of COLE usage require the development of such models, which would maximize to meet requests of teachers to organize and conduct the new type lessons.

Basic structural model of cloud oriented learning environment enables a teacher to uncover additional opportunities and completeness of its use in the real world of secondary school. It takes into account both the current needs of the participants of educational activity, and prospects for the use of innovative lessons, streaming collaboration and cooperation while working on educational projects, collaboration with colleagues.

Further research needs to develop cloud oriented learning environment for the student of comprehensive educational establishment.

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Саття надійшла до редакції 06.06.2014

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МОДЕЛЬ ХМАРО ОРІЄНТОВАНОГО НАВЧАЛЬНОГО СЕРЕДОВИЩА ВЧИТЕЛЯ ЗАГАЛЬНООСВІТНЬОГО НАВЧАЛЬНОГО ЗАКЛАДУ

Стрімкий розвиток хмарних сервісів, впровадження їх в систему загальної середньої освіти вимагає впровадження педагогічно виважених моделей для забезпечення

оптимального їх використання та мобільності під час навчального процесу в урочний та позаурочний час.

У статті проаналізовано сучасні вимоги до навчального середовища, розкрито проблеми педагогічного моделювання та використання хмаро орієнтованого навчального середовища вчителя в системі загальноосвітніх навчальних закладів, проаналізовано поняття «модель», «моделювання», дано визначення «внутрішня» і «зовнішня інтеграція» сервісів, описано «структурно-інтегративну» модель хмаро орієнтованого навчального середовища (ХОНС). Визначено вимоги до моделі, розроблено базову модель ХОНС вчителя, що формується на основі таких компонентів: системи сайтів, електронної пошти, банку навчальних матеріалів, блогів, сховища документів, внутрішньої соціальної мережі, навчальних груп, календарів, конференцзв'язку.

Дана модель може бути базовою для загальноосвітніх навчальних закладів усіх типів і форм навчання, вона дає повне уявлення про можливості ХОНС для вчителя, надає доцільну деталізація для розуміння важливих процесів в середині ХОНС, що забезпечують навчальну мобільність, комунікацію, кооперацію та співпрацю вчителя з усіма учасниками навчально-виховного процесу.

Ключові слова: хмарно орієнтоване, навчальне середовище, модель вчителя, модель ХОНС.

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МОДЕЛЬ ОБЛАЧНО ОРИЕНТИРОВАННОЙ УЧЕБНОЙ СРЕДЫ УЧИТЕЛЯ ОБЩЕОБРАЗОВАТЕЛЬНОГО УЧЕБНОГО ЗАВЕДЕНИЯ

Стремительное развитие облачных сервисов, использование их в системе общего среднего образования требует внедрения педагогического взвешенных моделей для обеспечения оптимального их использования и мобильности во время учебного процесса, в урочное и внеурочное время.

В статье проанализированы современные требования к учебной среде, раскрыты проблемы педагогического моделирования и использования облачно ориентированной учебной среды учителя в системе общеобразовательных учебных заведений, проанализированы понятия «модель», «моделирование», дано определение «внутренняя» и «внешняя интеграция» сервисов, описана «структурно-интегративна» модель облачно ориентированной учебной среды (ООУС). Определены требования к модели, разработана базовая модель ООУС учителя, что формируется на основании следующих компонентов: системы сайтов, электронной почты, банка учебных материалов, блогов, хранилища документов, внутренней социальной сети, учебных групп, календарей, конференцсвязи.

Данная модель может быть базовой для общеобразовательных учебных заведений всех типов и форм обучения, она дает полное представление о возможностях ООУС для учителя, предоставляет целесообразную детализацию для понимания важных процессов в среде ООУС, которые обеспечивают учебную мобильность, коммуникацию, кооперацию и сотрудничество учителя со всеми участниками учебно-воспитательного процесса.

Ключевые слова: облачно ориентированная, учебная среда, модель, учитель, модель ООУС.