

## CURRICULUM FOR THE COURSE "USING GOOGLE SERVICES IN TEACHERS' WORK" FOR FULL-TIME AND DISTANCE LEARNING

**Summary.** *The article reveals the content and principles of learning process organization, as well as the modular structure of the full-time and distance course for secondary school teachers «Using Google-services in Teachers` Work». The course was approved in 2010 and introduced into the teacher training education in Lviv region as a potential learning module "IT in Education" in the regional credit-based modular system of teacher training.*

**Keywords:** postgraduate education, distance learning, Google-services

**Formulation of the problem.** Nowadays rapid development of informational technology and internet makes the separation of education from informatization impossible. Modern technology comes to a classroom together with students – in smartphones, iPods, e-books, modern cell phones. Gradually school recourses are updated: computer park, smartboards, new software. New technologies are being integrated into everyday and private life of people. Modern managers and teachers have to teach in a new way, use computers and internet in their work, gradually mastering new technologies and acquiring new knowledge and skills. Nowadays the development of education, particularly post-graduate education, can't function without internet technologies and social network.

**Analysis of recent studies and publications.** Summary of recent studies rendering the theory and practice of informatization in the social sector, particularly in education, allows to identify several aspects of research.

The results of detailed research of the first aspect are represented by R. H. Abdeeva, V. P. Andruschenko, D. Bell, V. Y. Bykov, V. V. Biryukov, N. Wiener, V. M. Glushkov, B.S. Gershunskiy, J.O. Doroshenko, W. Ashby, M. I. Zhaldak, O.M. Knyazeva, V. Z. Kogan, K.K. Colin, V.G. Kremen, S. P. Kurdyumov, V. V. Lapinsky, N. V. Morse, I.S. Narskiy, L. A. Petrushenko, Karl Popper, I. A. Prigogin, V. I. Syforov, A.P. Sukhanov, A. D. Ursul, R. Fischer, H. Haken, R. Hartley, A. D. Homonenko, K. Shannon on philosophy of education, philosophy of information civilization, cybernetics, computer science, general management, sociology of education. They illustrate philosophical concepts of the phenomenon of information, theoretical and methodological aspects of social information science, computer science, the phenomenon of management in the socio-economic field, the mechanism of self-organization of matter and society, non-linear and dialectic thinking, characteristics of information civilization.

However, scientists focus on the issue of openness of this idea and interpretation of information concepts, the need for integration of computer science achievements, cybernetics and synergetics with the theory of development in interdisciplinary research and throughout their implementation in management, the use of information resources, IT means, internet for designing and modernizing of education management.

The second aspect is related to fundamental research of information as an attribute and one of the key elements of a classical administrative and functional managing model in education at different hierarchical levels, a organizational function based mainly on educational information, the development of the educational information bank based on the Soviet theory of school and pedagogy (S. I. Arhangelskiy, V. P. Baymakov, D. M. Gvishiani, M. I. Kondakov, Y. A. Konarzhevskiy, V. S. Tatyanchenko, O. A. Orlov, T. I. Shamov, P. V. Hudomynskiy, T. K. Chekmareva and others) in terms of the production of information and IT means, the development of education management theory,

education studies and the model of state and public school management, are greatly changed in an innovative and modernized way.

The third aspect of study is related to the discourse of the theory of secondary schools (SS) management based on the research of social systems and cybernetics regarding the specific phenomenon of management, the factors of impact of the environment on SS (V. G. Afanasyev, V. I. Bondar, Y. V. Vasilyev, Y. K. Konarzhevskiy, V. I. Maslov, Y. Y Tabakov, L. I. Fishman, T. I. Shamova, A. Schmitte and others).

The development of the theory of public, educational and informational management, IT means, the discourse of the concept of resource management led to an important direction of research of education management informatization, which is reflected in the works of B.N. Andrushkova, M. Albert, I. Ansoff, D. Boddi, V. Y. Bykov, J. Wagner, O. S. Vihanskiy, A. M. Gurzhiy, L. I. Danilenko, Des Derlou, Y. O. Doroshenko, G. A. Dmytrenko, M. I. Zhaldak, V. G. Kremen', T. I. Lukina, V. M. Madzihon, V. I. Maslov, M. Meskon, M. Porter, V. I. Tretiak, F. I. Hmil', F. Hedouri and others.

The problem of education informatization, teacher training on IT basics and IT in pedagogy is very important. This issue is studied by the following Ukrainian researchers: V. Bykov, A. Hurzhiy, M. Zhaldak, Yu. Mashbyts, N. Morze, V. Oliynyk, L. Kalinina, L. Kartashova, V. Kosik, V. Lapinskyy, T. Pushkarova, V. Rudenko, O. Spirin, by the Russian scientists O. Uvarov, Ye. Patarakin, M. Lebedeva and others [2-6].

As researchers see it, the successful implementation of IT in education in the near future is only possible when the system of IT knowledge and skills of educators should go together with their direct use in the learning process, thus motivating them to find ways how to use acquired knowledge in their own practice. The State Program "100 Per Cent" can be the confirmation. One of the five key objectives of the program is training and professional development of teachers in introducing IT into the educational process [7]. Russian scientists in their forecast

of the development of education next decade indicate that the significance of the new phase of school informatization – individual approach to learning through the use of IT means. This will enable the implementation of new educational technologies that could not be used in schools before because of the complexity of their implementation by means of “paper” IT [1].

**The purpose of the article** – to describe the structure and content of the course "Using Google-Services in Teachers' Work" in the system of professional development.

**The main material.** Full-time and distance learning course "Using Google-Services in Teachers' Work" is implemented in the Lviv Regional Institute of Post-Graduate Education Studies within the framework of a credit-modular system of professional development of teachers since 2010 as one of the possible options for the teachers having sufficient user-level for the course " IT and the Educational Process". The course is designed for secondary school teachers.

The aim of the course is to equip teachers' knowledge and skills how to use internet resource Web 2.0. in the context of their professional development and to foster teachers' strong interest to use new internet resources, also to encourage teachers to learn how to use new services (upon completion of the courses) and develop the already acquired knowledge and skills. Thus, the author of the course (M. V. Noskova) aimed not only to teach students to work with the most popular Google services, but stimulate them to learn the core principles of self-learning. She illustrated this using the example of Google services.

In order to develop the structure and content of the course "Using Google-Services in Teachers' Work" the following general approaches were identified and agreed upon:

1. Defining the purpose of learning as learning outcomes for each module in the form of basic professional competencies of teachers.

2. Constructing learning modules based on structural logic: the purpose of learning – learning objectives – learning outcomes, program – area – module – theme.

3. Within each module the minimal educational and methodical unit is a topic that is carried out in a number of hours due to rational and divergent selection of principles, learning types and means, forms of control and self-control.

4. The course is based on principles of synergy, didactics, andragogy and methods of teaching adults, also activity-, personality-, competence-based scientific approaches.

5. The developed modules are autonomous structural components of the course interconnected within each learning area and type.

To effectuate and carry out learning assignments, students should have basic computer skills.

The course is designed for 36 learning hours that include two full-time session (opening and final) and 7 distance modules. Distance learning stage lasts for 3 - 4 weeks (Table 1).

Table 1

**The structure of the course "Using Google-Services in Teachers' Work"**

<b>Modules</b>	<b>Learning type</b>	<b>Hours</b>
Opening session	full-time	8
Gmail and Google- maps	distance	2,5
Picasa Web Albums	distance	3
Blogs, current blogs analyses	distance	3
Creating one's own free blog at <a href="http://www.blogger.com">www.blogger.com</a>	distance	4
Google-Reader	distance	2,5
Google-calendar	distance	2
Google-sites and Google-documents	distance	3
Final session	full-time	8
Total		36

The result of effective learning of the full-time and distance course is creating and presenting own Google-collections that students can use in their future learning process. Despite of full-time and distance learning types, the course combines individual and group learning where virtual peer visits, team work and other methods are actively used.

At the opening full-time session (8 hours) students of the full-time and distance course acquire basic knowledge about social services Web 2.0., basic knowledge of network etiquette and rules of the social services Web 2.0., create their own Google accounts (if no account) and register:

- at the learning site «Google-Services for Teachers» <https://sites.google.com/site/servisyteacher/> , which contains learning course materials, assignments and tests;
- in a shared learning success table of the group (created for each study group separately), which posts a link to their assignments and tests, and also grades and credits of the course teacher;
- in the Google-group «Google-Services for Teachers" at <http://groups.google.com/group/Google-servisy> with off-line consultations for students and feedback at the end of each module.

In addition students receive instructions on further distance learning and learn about the terms of participation in on-line consultations and discussions.

Within distance learning students actively work on-line carrying out the curriculum of each module within 2-3 days (processing theory, fulfilling assignments, posting links to carried out assignments in a shared learning success table, feedback, participating in the Google-group discussion of issues).

Learning materials are available for students within the allocated time in the Google-group and on the course site «Google-Services for Teachers". There is a deadline for assignments and tests of each module. When admitted to the course, at the full-time session students receive personal learning schedules, deadlines for

assignments, schedule of on-line consultations with the course teacher. The group also decides upon the time of on-line discussions with the students on the course.

Thus, in order to achieve the goal of the course the tasks are carried out in the form of full-time and distance learning by way of:

- self-study of learning material based on course instructional materials;
- carrying out assignments aimed at acquiring practical skills by students, fostering their mental activity;
- conducting off- and on-line consultations with the course teacher and participating in on-line discussions;
- conducting ongoing monitoring (at the end of each module), self-control and final testing (after the course);
- compiling own package of teaching materials for the subjects.

At the end of the distance learning stage students attend final full-time session (8 hours) where they take the final test, present their own Google-collection created within the course. At the end they are anonymously surveyed about the course effectiveness. According to learning success students are granted with course certificates.

We shall now describe in detail the structure and content of the full-time and distance learning stages.

Opening session (Table 2). Duration - 8 hours. (4 classes). One of the key objectives of the course is to train teachers to independently master internet services. The main objective of the course is structured into a number of tasks: to identify the initial level of IT skills as a tool to realize their own needs and as a pedagogical tool; to give students basic knowledge (concepts, terminology, principles, etc.) of Web 2.0. services; to provide students with an overview of Google services as the subject matter of the course and as an example of the second generation service; to learn about or improve students' knowledge of the etiquette as a key rule of network service; to describe distance learning structure and terms; to provide access to learning materials online; to inform about distance

learning requirements; to open a shared document recording students' success on the course.

At the opening session much emphasis is drawn to theoretic foundations of Web 2.0. services, their origin and history, classification and diversity of services. Also a direct relation of Web 2.0. and Google-services is observed – as a good example of successful implementation of Web2.0. in the products of the most successful IT corporations, currently.

Table 2.

### Opening Session Structure

№	Learning stages	Teaching methods and types	Duration
1	Primary questionnaire	Self-study: responding to questions (questionnaire posted on-line)	30 min.
2	What is Web 2.0.?	Lecture with a presentation, using video recourses and internet	1,5 hrs.
3	Google-services. General overview and description	Lecture in the form of heuristic dialogue with a presentation, using video recourses and internet	2 hrs..
4	Basic rules of using social network services. Creating own Google accounts, instructions on distance learning	Internet based session, discussion of learning success. Presentation, handouts	2 hrs.
5	Using Google documents. Forum feedback	Internet based session, handouts	2 hrs.

It is extremely important to do primary questionnaire and testing, that helps to detect the level of students' preparation for the course. It also helps students to do their initial self-assessment, it helps teachers to identify the student's and the group level of IT skills as well as their willingness to learn the course, to direct their activity at the full-time session so as to ensure successful interaction between students and teachers at the following distance learning stage. In addition, primary questionnaire allows teachers and administration to monitor the quality of

students' learning on the course, to identify the dynamics of change and the need for change of teaching strategies of the course at all stages.

Distance learning stage. Duration – 3 weeks. Objective: to provide theoretical and practical knowledge and skills of using Google services; to demonstrate the examples of using Google services in the educational process; to show pedagogical opportunities of Google services; to encourage students' interest and creativeness using Google services in the educational process.

At the distance learning stage the emphasis is shifted from information transfer to developing students' skills of independent knowledge acquisition by organizing students' independent learning activity, that starts with doing assignments according to detailed instructions.

Structure – 7 modules, each dedicated to a separate Google service.

Handouts for each distance module have a similar pattern: 1) self-study of theory, 2) doing assignments according to detailed instructions and a description of action sequence, 3) doing creative assignments where students try to model the use of the Google services in the learning process according to their needs, 4) on-line consultation, course discussion at the on-line forum, 5) testing and feedback.

Theory is uploaded on the course website and is divided into modules. Each theoretical unit contains a brief service description, its opportunities and possible use of a service in the learning process. There are examples of services' use by teachers from Ukraine and neighboring countries. The website offers a list of electronic links for self-study illustrating the main concept of a service, its description, history and how it is functioning.

Students can download information to their computers, print it out and learn about the offered sites. The main purpose is to get the initial idea of the service and how it is functioning, how to work with it and how to use it in their work with their own students.

To consolidate theoretical knowledge and get practical skills of working with the service students are offered to carry out the assignment according to a

detailed instruction, which is the next stage of mastering the learning material of each distance module. Students are offered to carry out the assignment within a certain period of time and post the link to the finished product in shared learning success table. At this stage, the method "do as I do" is used.

Students can carry out assignments according to a step by step instruction, which contains screenshots with explanations on what to do next. As a result, students receive their own products made up according to a single model. It allows students: 1) to quickly get practical skills of service use, 2) to evaluate the possibility of using the service in their own work, 3. see the results of the other group members and make their own self-performance of 4. design a product using the services for direct use in the classroom with their own students.

Creative assignment offered to students at the third learning stage implies that students create their own product using the services in class which was designed at the previous learning stage.

Students have to model learning situations in which the use of the service is appropriate, and describe how they will use it in class. Therefore, it is required to briefly prove why it is appropriate to use the service in class and provide an example of its use (extract from the class synopsis, pedagogic material and a description of its use, home assignment for students with the instruction, etc.).

Carrying out the curriculum students can have questions and difficulties. In order to provide urgent help in solving course problems on-line consultations are available for students. As students can have typical questions and the answer might be interesting for the majority of students, consultations are available in two public formats – at a forum or a webinar.

At the forum students can leave questions for the teacher and their peers any time, view previous questions and answers, consult each other within the group. This form is also appropriate because the access to it remains available after the course completion, students can contact with course graduates. Webinars are held at a specific time and students can contact the teacher in real time and get a

response "first hand". At the webinar some time is always devoted to the analysis of questions posted on the forum.

Webinars, as well as chats and teleconferences, are classified as synchronous learning forms where the interaction among subjects of the learning process – the students – is a real-time process.

Webinars are a form of distance learning for secondary school teachers. It is an on-line event organized with the help of web-technologies in a live mode. It is used for exchange of information, ideas, new knowledge among course students, and for settling misunderstandings and difficulties in the process of mastering the content of the course.

At the webinar, participants are at their own computers, and the communication among them is provided via internet attachments downloaded onto their computers or via a web attachment. Webinars do not limit the number of participants and provides opportunities for video dialogue. Distance platform Adobe Connect PRO offers opportunities for video dialogue and video polylogue with webinar participants, to demonstrate the computer screen, to record notes on a whiteboard, to organize and conduct discussions in small groups, etc. The system also allows participants to exchange messages in public and private chat rooms. The teacher and students send messages that can be simultaneously read by all participants. Also the teacher can conduct a workshop demonstrating on the screen actions that help the participants carry out tasks instead of verbal actions description and explanations, organize group work in the form of a white board in order to create actions procedure scheme or to divide webinar participants into small groups and conduct brain storm in order to collectively solve the learning problem or work out a strategy. The system allows the teacher to conduct on-line test (exceptionally closed questions), which the system processes and gives out the results in a qualitative and percentage form that can be viewed (at the teacher's will) for all the participants or only for the organizing team. Thus, this form of a conference is a good way of communication, exchange of views and experience

between the teacher and students. Webinars are quite useful when the participants are from distant places of a district or a country and the communication between the teacher and students is quite limited. The option to record the webinar with further editing allows the teacher to analyze and reuse its materials in the learning process.

A test, as a result of the module process, is carried out by the students after going through all compulsory learning stages and can have a pure test format or a combination of test and creative analytical tasks. The test is exceptionally made of the module learning material and is aimed at the opportunity for students to check the quality of theoretical knowledge and practical skills received within the module work with a certain computer service.

Feedback at the end of each module implies filling out final questionnaire about the learning results at all the module stages. Except for the psychological factor – self-evaluation of the students' work and the opportunity to inform the teacher about the students' observations and propositions, students can also evaluate the effectiveness of the learning process, the simplicity of rendering the learning material, the relevancy of practical tasks and virtual communication of the group participants.

Analyzing questionnaire results, the teacher can correct her own actions, i.e. to pay more attention to describing a certain function of the service during the on-line consultation or vice-versa simplify the procedure; to devote a separate forum article to the most urgent group learning problem.

Final full-time session – full-time (8 hrs.) – (table 3). Objective: to sum up learning results, receive the students' feedback, observations and propositions regarding the course content and organization of the learning process.

Table 3.

### The Structure of the Final Full-Time Session

№	Learning stages	Teaching methods and types	Duration
1	Presenting the students' own Google-collections made up in the learning process	Public defense of their own work	4 hrs
2	Reference letter about the work of a colleague. Work with the template and setting up access to it according to preset settings	Carrying out practical tasks according to instructions. Pair work	2 hrs
3.	Cross-evaluation of participants' work. Voting for the best group work. Feedback. Certificate ceremony.	Work in a Google-group, filling out the form and the final questionnaire	2 hrs

Final full-time session emerged from the students' propositions, which they left on completion of each course module, and also from the feedback of first groups that presented their collection distantly. It was from the students' feedback where it became known that a virtual group of interested people was created in the course learning process. The group worked together, and it is necessary to fix the result during the full-time communication and discussion of learning results. Thus, at the final full-time session the students take the final test and present their own Google-collection made up in the learning process. It is necessary to say that certain preparatory work for the final test takes place in the seventh module, and participants can review final presentations of their colleagues, write a reference letter to one of them. It means that participants come to the final full-time session being prepared for it.

It is separately worth describing the process of filling out the final questionnaire that gives students and the teacher the opportunity to evaluate learning effectiveness and results, weaknesses and strength of the course in general and of its parts. Taking into account that the participants could self-evaluate at all learning stages and cross-evaluate at the final stage, we can claim that constant monitoring of the learning quality takes place within the course. In its turn this

helps the teacher to evaluate the course effectiveness, reasonableness of bringing change into the course structure and content.

**Conclusion.** The program of a full-time and distant course implies mastering basic techniques of working with second generation internet services, particularly with Google-services, by teachers. This will help teachers to actively use internet technology in teaching general subjects and organizing school education process. As a result of the course, except for mastering the curriculum, teachers also receive practical skills of: a) organizing the works of virtual learning groups; b) organizing independent and group work with internet services; c) conducting virtual discussions using free internet services.

In general the acquired knowledge and skills give the opportunity to extend the framework of using internet services in secondary school education and become an efficient instrument for teachers' work regardless of the subjects they teach. The only essential condition is internet connection that is available even on the phone.

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