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# The Experience of the Creation
# of Educational IT Space of the Region

## Abstract

The article deals with the modern approaches to the use of information and communication technologies in the educational process, extracurricular activities and management at the regional level in order to enhance the creative potential of students, teachers and administrators. The article has described the conceptual bases of creating an information-educational environment of the region as a platform for information and achievement exchange between educators and the administration of the region. It specifies the technology of implementing the content and technology component of the information-educational environment of the region and its main functional components. We suggest the implementation model of the effective management of educational institutions in the form of a unified system for collecting, processing and storing valid statistical and operational information on the activities of pre-school, comprehensive educational institutions and territorial units of education management (in districts and cities). The article has described the integrated tools and technologies that are designed to ensure the educational needs of both students and teachers. We also suggest the model of a single control center for the information-educational environment of the region that organizes support for its exploitation and development.

K e y w o r d s: Internet portal, regional educational network, informative web-resources, ZapoWiki, virtual educational communities

# Introduction

The globalization of social processes and the development of information society form new requirements for the system of education: to create conditions for territorial and chronological independence of gaining knowledge, to enable common creation of new knowledge, and to educate individuals so as to equip them with the ability to reflect, solve problems, interact, influence decision-making, enjoy peaceful co-existence and present effective management of their lives.

The ability to learn has become the most essential skill for a modern personality. Correspondingly, the main task of general secondary education in the IT society is to teach how to learn (*The World UNESCO Report 2005*).

A teacher should not only master new technologies but also be able to apply them correctly and efficiently, and to define their role and position while teaching a range of school subjects (Morze, 2010).

This puts forward new tasks for the educational system as well as new requirements for the teacher, since introduction of IT into the educational process determines the appearance of both modern technical means, and of new forms and methods of teaching (Yanshina, 2005). The teacher becomes the key figure not only in the educational and pedagogic process, but also in the very process of computerization of education (Manako, 2009). To put it differently, this means mastering new skills by the teacher, as well as shaping the ability to choose the most efficient methods for coping with tasks in real-life situations, on condition of a permanently growing offer of textbooks, and educational computer programs and resources. Nowadays, teachers are likely not only to make choices, but also to make attempts to create new educational resources that would be capable of satisfying their pedagogical needs and students' educational demands (*The World UNESCO Report 2005*).

# The Fundamentals of the Creation
# of IT Educational Space of the Region

The educational policy of the Zaporizhzhia region could not stay aside the global and national tendencies. Thanks to the regional and national funding programs and the efforts of administration and local communities, secondary educational establishments (SEEs) of the Zaporizhzhia region have been equipped with computers and Internet access. By 2006, 100% of the SEEs of the Zaporizhzhia region had had not less than one fully equipped IT class and multimedia complex, as well as access to the Internet (Khivrych, Fedko, 2006). Computers and electronic

educational resources (informative, reference, didactic) enabled the advance of teachers and students in mastering and using informational and communicative technologies (ICT), and shaped new approaches to educational models. School educational communities started their formation in the majority of schools and they have gradually transformed into educational spaces (Bykov, 2008). The process of their shaping was determined by the establishment's vision of the tasks that the participants of educational and pedagogical process faced, as well as by the methods which that very establishment had chosen. That is why educational service provided with the help of ICT often failed to integrate or co-operate with another one, created even by a neighboring educational establishment.

The Department of Education and Science of the Zaporizhzhia Regional State Administration (DES ZRSA) and Zaporizhzhia Institute of Post-Graduation Pedagogical Education (ZIPGPE) had to solve the problems of the appropriate preparation of teachers for using ICT in the educational and pedagogic process.

Starting from 2007, the regional project group lead by the author of this paper began to consider the possibilities of creating the educational IT space (EITS) that was intended to meet the following requirements:

- to become a space for interaction between the subjects of the educational process – a teacher and a student;
- to create a platform for the exchange of information, achievements and advances, especially those connected with management and methodology of teaching, between regional educational establishments, district and municipal educational administrations, ZIPGPE and DES ZRSA;
- to maintain automation of managerial activity at all levels, and to enable an immediate analysis of databases and information in the system of education of the region in order to take efficient managerial decisions and to achieve socially significant results;
- to create conditions to help educational establishments solve educational and managerial tasks concerning the introduction and efficient use of EITS in the educational and pedagogic process; and
- to increase the efficacy of interaction between executive organs and local self-governing authorities, between educational establishments and the participants of educational and pedagogic process.

**Regulatory and Methodological Grounds for the Creation of EITS**

The formation and development of EITS is performed within the present-day regulatory and legal framework, which prescribes the use of information systems of governmental authorities of Ukraine and the use of ICT in educational establishments. This includes the following Laws of Ukraine: "On education," "On general secondary education," "On pre-school education," and the Resolutions of the Cabinet of Ministers of Ukraine "On the creation of the united state electronic database of educational issues." The direction of automation of collecting and

processing information prescribed by the state statistical reporting on secondary educational establishments has been launched in the Zaporizhzhia region as the project "Information system of education management" (ISEM). It was approved by the orders of the Ministry of Education and Science of Ukraine: "On the introduction of the experiment 'ISEM-2012' in the general secondary educational establishments and in the organs of educational management," "On the approval of the results of the experiment 'ISEM-2012' in the general secondary educational establishments and in the organs of educational management," as well as by the letters of the Ministry of Education and Science of Ukraine of 02/09/2013 "On the submission of the mandatory state statistical report by SEE and the regional organs of educational management" and of 27/07/2015 "On the maintaining of functioning of the information system of educational management 'ISEM'."

The interaction and information exchange both within EITS and with other systems is performed on the basis of common methodological and technological principles and standards, taking into account possible financial expenses as well as possibilities to save finance and other resources. For instance, the software which is the basic component of ISEM does not require a separate server in every educational establishment and it can work on every model of a computer. It can be mastered by school and educational governing staff quite quickly and easily, and can operate online (Khivrych, 2011).

The complex of ISEM enabled the creation of the unified system of collecting, processing and storing information from the Zaporizhzhia region concerning educational establishments and territorial constituencies: districts and towns. Simultaneously, the problem of the supply of the district and municipal educational administrations with the full valid statistical and up-to-date information on the activity of SEE has been solved. This enables the performance of educational management on a higher level, and provides the opportunity to plan the expenses of the municipal and district budgets in the framework of the educational programs implementations more effectively. Besides, the use of this system helps optimize the activity of the educational governing organs, correct rationally and reasonably the directions for further development of the general secondary education in the Zaporizhzhia region, and maintain the corresponding level of control of the activity of the educational establishments of the region (Khivrych, 2011).

**Framework Arrangements for the Creation of EITS**

In the process of creating EITS of the Zaporizhzhia region the principles of functionality, integrity, adaptedness, separetedness and immensity were employed.

Since 2009 the project "The creation of the united educational IT space of the region" has been defined as a high-priority direction of the regional development.

The same year the concept of EITS of the region was elaborated. It covered:
• the unification of different concepts of the process of computerizing education in the region;

- the agreement on basic rules of interaction between the subjects;
- the effective use of the resources present in the regional educational system;
- the exclusion of unreasonable financial, organizational and other expenses; and
- the achievement of qualitative changes in the fulfillment of new educational targets.

In order to maintain common methodological and technological principles and standards of interaction both within the regional EITS and with other systems, a set of documents determining the organizational, methodical, regulatory and technological character of interaction has been adopted. These documents include decisions of the board, orders and letters of the Department of Education and Science of Zaporizhzhia State Regional Administration ("On the efficacy of the use and on the influence of the modern IT on the educational process in the system of general secondary education," 2006; "On the preparatory work concerning the creation of the common regional educational IT space," 2007; "On the results of the creation of the common educational IT space of Zaporizhzhia region," 2009; "On the updating of the data on the web-portal of the educational network and the formation of the electronic state reporting," 2015).

It is stated in the organizational documents on the regional level that the coordination of work on the whole system is performed by the Department of Education and Science of Zaporizhzhia State Regional Administration, and the management of the creation and development of its components and separate information resources is maintained by the owners of these resources. The owners of IT resources (SEEs) that are united in EITS are fully responsible for the relevance of the provided information. The control of the organization of the submission process and the update of information in the components of EITS is performed on the managerial level of educational establishments and of the district and municipal educational management organs.

The united center of administration of the EITS of the region has been created. It organizes the work connected with the development, use and maintenance of the system, including: immediate solutions of the current problems and issues by means of the organizational support and the elaboration of common working algorithm; the definition of authority, rights, duties and responsibilities of the resources owners during the creation, use, support and development of EITS; the formation of the list of the users of EITS of the Zaporizhzhia region; the agreement on the corresponding regulation of their access to the information resources.

Annually the board of Zaporizhzhia Regional State Administration takes the issues of EITS functioning and development into consideration. For example, the decision of 29 April 2015 prescribes the development of EITS by means of shaping the district and municipal educational online resources and pedagogical communities. This activity is performed according to the "Statement of the introduction and functioning of virtual educational communities of the Zaporizhzhia region," which was adopted by the scientific and educational council of ZIPGPE.

**Technological Framework for EITS**

EITS has been designed as a territorially distributed three-level (four-level in the future) information system which functions on the levels of a SEE, a district and a region (and the state in the future), and has the following characteristics (Khivrych, 2011):

- it has a component structure and is user-friendly;
- it enables further development of the system and the design of new resources:
- it secures the possibility of interaction with the EITS of other regions, other institutions and organs, as well as integration with international systems;
- it has an information security system;
- it gives different levels of access to information resources to its users, according to their needs, assignments and authorities;
- it excludes discrepancies in interaction; and
- it secures data consistency, etc.

The complex of ISEM has been designed with the use of twofold architecture. Special software, which can operate autonomously, is installed in the educational establishments. Simultaneously, due to the use of modern client-server technologies, the necessary information is transferred – with the help of the special exchange service – to the WEB-server, which is located in one of the safest and most secured data-centers in Ukraine. Users can get access to this server through any modern web-browser.

Such architecture of the complex provides the ability to keep databases in educational establishments and in the organs of educational management on the condition of temporary absence of the Internet connection. Data exchange between the basic and the top level is maintained with the help of both the Internet and mass storage devices. It made it possible to integrate into the system even those educational establishments that do not have Internet access or students, but their presence is necessary to give a full account in the state reporting.

The users of ISEM get access to necessary data locally and through the Internet. The amount of data that every user can operate is defined dependently on the rights granted by the administrator of the complex. While using the web-portal, guests can browse only a limited amount of data, whereas users in charge get an authorized password access on the basis of the encrypted data exchange protocols.

The system has four levels of access: the basic level, given to an educational establishment; the medium level, granted to district and municipal educational governing organs; the top level, available for the regional department of education, and the guest level that is applicable for parents, students, teachers, members of the community, etc.

# The Components of Educational IT Space
# of the Zaporizhzhia Region

The database of EITS of the Zaporizhzhia region is represented on the web-portal "Zaporizhzhia regional education network" by two resources: ISEM and "The educational on-line map of professional education in Zaporizhzhia region."

## ISEM Components

ISEM components are as follows:

- the web-portal http://zp.isuo.org, which hosts the information on the secondary and pre-school educational establishments, including the information about every educational establishment, its facilities and resources, as well as the information about students, teaching and administrative staff, and state reports;
- the portal for electronic registration for entering a pre-school educational establishment (e-queue) (http://reg.isuo.org);
- the web-portal http://mz.com.ua, which is a system of electronic class registers and e-diaries; and
- http://at.isuo.org – an electronic system of teaching staff evaluation.

Active users of ISEM include headmasters, teachers, parents and students of 595 (100%) secondary schools and 512 (100%) pre-school educational establishments, 32 members (100%) of educational governing staff of district and municipal administrations, the staff of ZIPGPE and DES ZRSA. All the users have acquired their IDs with different levels of access to the information hosted on the portal, and use its capacities according to their needs or functional duties (Khivrych, 2011).

The web-portal http://zp.isuo.org comprises a set of tools that are aimed at the automation of the managerial activity not only in educational establishments but also in educational governing organs of all levels. The united system of collection, processing and storage of information on secondary and pre-school education provides the solution to the following issues (Khivrych, 2011):

- the supply of the managerial organs with full, reliable and up-to-date information about the activity of educational establishments of the region;
- the avoidance of extra red tape for additional information collection;
- effective planning of budget expenses of all levels in the framework of the educational branch functioning and the implementation of the development programs;
- rational and reasonable correction of the directions for the further development of education on all levels – from a separate establishment to the region on the whole; and
- the implementation of the corresponding level of control of the activity of educational establishments and educational governing organs of lower levels.

The collection of information and updating the databases are performed in every educational establishment by means of the software complex http://ekyrs. org, which, if necessary, is updated by the developer and can be downloaded from the portal.

In every educational establishment of the region there is an appointed staff member responsible for creating and updating all the databases, specifically in respect of teaching staff, students, the language of teaching, educational profile, advanced studies, facilities and resources, etc. On the basis of the information which is input by the establishment, a draft of a timetable is automatically formed, as well as a state statistical report about an establishment is generated.

The Internet portal http://zp.isuo.org provides the opportunity to (Khivrych, 2011):

- generate all statistical reports on educational issues on the level of district or region;
- generate other reports or selections in different formats;
- search for necessary information on an establishment, its students and teaching staff; and
- get up-to-date information about an educational establishment, etc.

To supply the Internet portal with data on pre-school educational establishments and to form state statistical reporting on the issues of pre-school education, the software complex http://dnz.ekyrs.org is used. In January 2015 a state report on pre-school education was for the first time formed in semiautomatic mode by all the pre-school educational establishments online and was sent to the portal of Zaporizhzhia regional education network.

On the basis of the software environmental complex (http://dnz.ekyrs.org), a system of e-registration to a pre-school educational establishment has been designed (https://reg.isuo.org/), which makes it possible to keep tabs on the queue for entering pre-school educational establishments of the Zaporizhzhia region (PSEE).

With the help of the module "E-registration to pre-school educational establish-ments," parents can register their child for kindergarten, and people in charge of either a municipal or district educational governing organ can control the queue and issue an assignment to the chosen PSEE.

At present 80% of the PSEEs of the Zaporizhzhia region are connected to the system. E-registration has been fully introduced into 70% of the PSEEs. In other establishments the introduction of the system is in process.

In the framework of the development of the educational IT space of the re-gion, the introduction of the system "Moii Znannia" (http://mz.com.ua) is being performed. It provides the opportunity to keep electronic class registers, e-diaries and to grant parents and students access to the information about school grades and progress of a student. This resource is actively used by 20% of the educational establishments of the Zaporizhzhia region, and 40% are having a trial of the

system in separate classes. Due to the absence of the stable Internet connection and equipped school networks, separate educational establishments of the Zaporizhzhia region are still unable to launch the system "Moii Znannia" fully.

The trial version of the system "Electronic evaluation of teaching staff" (https://at.isuo.org/) is functioning in EITS now. It enables heads of educational establishments and members of district and municipal evaluation boards to perform complex evaluation of teaching staff activity and their correlation with the actual positions.

Since 2015 "Educational online map of profile education of Zaporizhzhia region" (http://maposvita.pp.ua) has been functioning in the framework of ISEM. It is an interactive map of the educational establishments of the Zaporizhzhia region, which gives information about their educational profiles. This resource is used by teachers, parents, students and educational governing organs and has free access for users.

All the information in the educational network of the Zaporizhzhia region is kept up-to-date: the data is quickly updated by the educational establishments and is regularly controlled by the educational governing organs of the region. To perform this function, in every organ of government there is an appointed staff member whose duties include the following (Khivrych, 2011):

- the formation of the state report on the district, municipal, regional level;
- the control of keeping databases in educational establishments;
- regular submission of actual, up-to-date and true information of their level; and
- maintaining special software and updating it regularly.
  ZIPGPE is responsible for:
- training and consulting certain staff members of district and municipal educational governing boards on the use of software complexes (http://ekyrs.org and http://dnz.ekyrs.org), and the use of the information in the work routine;
- training certain staff members in the basics of the work with the "Electronic registration to a pre-school educational establishment" module; and
- providing, if necessary, technical support to educational establishments and educational governing organs concerning the work with software complexes http://mz.com.ua, http://reg.isuo.org, http://ekyrs.org, http://at.isuo.org.
  Regional EITS continues its development.
- The database is constantly expanding: private and night schools, pre-school, out-of-school, professional and higher educational establishments are gradually joining the system.
- The number of users who can get access to the databases on different levels (students, parents, teaching staff, etc.) is constantly increasing.
- The program is being supplied with new modules that enable monitoring, analysis of educational processes, etc.

There is an immediate information exchange between the administrator of EITS in the educational governing organs and corresponding staff members in educational establishments the VoIP-service Skype. Up-to-date information about

the functioning of the Internet portal http://zp.isuo.org is published in a Facebook group (https://www.facebook.com/groups/zp.isuo/). Urgent issues and problems connected with technical support are solved with the help of a software complex AmmyyAdmin (http://www.ammyy.com).

## Methodical Portal ZapoWiki

Since 2008 the methodical portal ZapoWiki designed on the basis of WikiWiki technology has been functioning in the framework of EITS. This resource has been created with the aim of introducing the principles of social pedagogy and the Web 2.0 technology into the educational process of the regional educational establishments. Wiki-website ZapoWiki is constructed as a platform for:
- the activity of virtual pedagogical communities;
- webinars, contests and network projects;
- trainings for teachers and students in the sphere of modern IT and ICT (network technologies Web 2.0 for students, network technologies Web 2.0 for teachers, Intel®Teaching for the Future (version 10.1), interactive means of teaching);
- the introduction of quest-technologies into the teaching process;
- the certification of educational materials of the Zaporizhzhia region teachers;
- a database of educational web-sites; and
- the creation of e-portfolios of teachers and students, etc.

More than 35,000 pages have been created on the portal, more than 20,000 files have been uploaded, and more than 10,000 teachers and students have registered there so far.

## Virtual School of Programming

The regional educational project "Virtual School of Programming" has been launched within the framework of EITS since 2011. The project presupposes the functioning of the online-resource "Unii Programist" (the Young Programmer), which is a system of automated check of the tasks on programming (http://s28.zp.ua/fpc). It is used to meet the requirements and needs of students and teachers all over the region. The mission of the resource is teaching students programming and perfecting their skills with the use of the elements of distance learning and holding Olympiads on programming. More than 3,500 usual and complicated tasks are available in this resource. About 2,000 of school students are its active users.

## The School of Modern Knowledge

Since 2014 one more project – "The school of modern knowledge" – has been implemented in the EITS framework of the region. This project is aimed at creating conditions to receive distance secondary education and to maintain qualitative profile and pre-profile preparation of the students of the regional educational establishments. This resource (zhu.edu.ua/mk_school) is created on the basis of the Moodle software complex.

As many as 230 e-courses have been registered in the resource, and 85 of them are supplied with the corresponding educational and didactical materials, which are available for browsing in the guest mode. These distance learning courses are elaborated by the members of regional creative pedagogical groups. The scientific-educational board of ZIPGPE has approved and recommended for use in the educational process more than 20 courses; among them one can find "History of Ukraine. 9th form," "Ukrainian Literature. 9th Form," "Chemistry. 10–11th Forms," "Biology. 10th Form," "Biology. 11th Form," "Ecology," "Biology and ecology. 10–11 Forms," "Russian," etc.

There is a distance learning course entitled "The development of electronic courses in Moodle platform" provided by ZIPGPE and aimed at training teaching staff to work in the Moodle space. In order to implement this project most successfully, a lot of preliminary work is being done at present, e.g. working on encouraging teachers to use Moodle and providing content to its distance learning courses.

## Platforms for Distance Learning

In order to maintain qualitative educational process in ZIPGPE during post-graduate education of teaching staff in general and IT teachers in particular, two platforms for distance learning have been created. They are the Chair of IT of ZIPGPE (http://do.ciit.zp.ua) and the educational unit of ZIPGPE (http://91.189. 131.226/moodle/), where more than 120 e-courses presenting structured educational and methodical material have been created and published. These resources are designed with the use of the Moodle free software. The supply of the courses with the corresponding materials is performed by the teachers who are in charge of the courses.

Every ZIPGPE student has a unique login and password for authorization in the system. Individual logging in makes it possible to check and control students' work and progress, and to maintain a system of rating their self-study activities. Distance learning implements an individual approach into the studies and allows every student to define the time they need to master the educational material, to fulfill the tasks, and to pass exams or tests.

## Virtual Pedagogic Communities in the EITS of the Region

A very active and fruitful distant co-operation of 26 virtual school subject communities, 11 virtual communities of the chairs and departments of ZIPGPE and 11 virtual communities of other types (those of speech therapists, librarians, IT specialists, educators, etc.) has recently been created on the ZapoWiki web-portal.

A lot of professional contests and festivals are held annually among teachers in order to develop virtual teaching communities, to encourage pedagogical creativity, to improve pedagogical excellence, to exchange the experience and to spread the best teaching methods. The materials from these events are open to public (http://

zw.ciit.zp.ua/index.php/Обласний_фестивальогляд_освітніх_веб ресурсів_області,_2015).

For instance, achievements and professional progress of IT teachers resulted in the designing of an electronic creative laboratory based on the ZapoWiki platform. This laboratory is formed on the grounds of different examples of IT teachers' activity that reflect their teaching work and maintain the technical support of the above mentioned online projects.

The creation of the electronic creative laboratory makes it possible to analyze a teacher's work in the period between evaluations, especially such activities as the participation in professional seminars, creative groups, round-table discussions, forums, conferences, professional contests, or educational exhibitions. The laboratory also enables the presentation of a teacher's creative report (lesson plans and materials, class events, photos and videos), printed and electronic publications, students' achievements, etc.

## Web-resource Bank of EITS of the Zaporizhzhia Region

So as to arrange and catalogue educational resources of the region, since 2014 a regional project of creating a web-resource bank has been introduced into the EITS framework. All resources created by the teaching staff, and checked and evaluated by teachers and educators are published in the ZapoWiki web-portal, in the section "Web-resource bank of Zaporizhzhia region" (http://zw.ciit.zp.ua/ index.php/ Банк_веб-ресурсів_Запорізької_області).

This bank is annually enriched with new interesting materials. The main condition for including a resource into this bank is that the resource is active, vivid and constantly updated. Throughout 2015, 33 new web-resources were placed in ZapoWiki, among which there are blogs (teacher's, headmaster's, librarian's, deputy headmaster's, subject, etc.), web-sites (school sites, teachers' sites, teaching communities' sites) and portfolios. Moreover, this bank has a significant informative function, as it helps to announce upcoming teaching contests and events in the region.

In order to design a cloud-oriented educational space and to fill it with new web-resources, a new section – "The use of cloud technologies in education" – has been started in ZapoWiki. To maintain its development, a training "EITS of an educational establishment by means of Google Apps for Education" for teachers and headmasters was held in December 2015.

Since 2014 a unique system of domain names has been introduced in the osvita. zp.ua domain, based on the Google service with the use of licensed software Google for Education. This system gives every organization (a school, a department, a teaching community) an opportunity to have its own name of a web resource and an e-mail in the mentioned domain.

# Conclusion

The launching and full work of an educational portal of the region demands common efforts of the educational governing organs and educational establishments. However, the right policy of the regional educational governing organs, directed to the formation and development of educational IT space of the region, is confirmed by the following proofs:

- the 7th position of Zaporizhzhia region in the common state rating by the results of the External Independent Testing of the Quality of Education among the school graduates in 2015;
- usual 5th–7th positions in the state rating of subject Olympiads and contests; and
- numerous awards of educational establishments, teachers, and students in all-Ukrainian and international exhibitions, contests, competitions, etc.

Nowadays, EITS created in the region is developing and is one of the most prospective directions for:

- the information support of teaching and educating process, not only in secondary, but also in pre-school, out-of-school, professional, higher and post-graduate educational establishments;
- the increase of the level and quality of the salvation of didactic tasks on the technological ground;
- the satisfaction of requirements in qualitative education of the population of the Zaporizhzhia region;
- the transfer of the learning process from the mechanical memorizing to the development of self-study skills;
- the creation of the most favorable conditions for the development of creativity and personality self-development in teachers and students;
- the processes of the humanization of education and of the creation of equal opportunities to get qualitative education notwithstanding social status, physical or individual peculiarities of a person;
- the elaboration of the platform for shaping the culture of cooperation and collaboration, and exchange of information about the achievements of social groups and individuals (Khivrych, 2012); and
- the integration into the united state space.

# References

To the Society of Knowledge (The World UNESCO Report). (2005). *UNESCO Database.* Accessed 31 December 2015. Retrieved from http://unesdoc.unesco.org/images/0014/001418/141843r.pdf.

The Budapest Initiative 'Open Access'. Accessed 8 September 2012. Retrieved from http://www. nbuv.gov.ua/ law/02_boai.html.

Bykov, V. U. (2008). Automatized IT systems of the general IT space of education and science. *The collection of academic papers of the Uman State Pedagogical University named after Pavlo Tychyna* 2, 47–56.

Manako, A. F. (2009). Evolution and convergence of IT technologies in education and science. *ITEA*-2011, 3–19.

Morze, N. V. (2010). *An institutional repository of a modern university and the ways of implementation of the open access initiative*. II International forum 'The problems of the development of IT society'. Vol I. К. УкрІНТЕІ – 252 с.

Cloud calculations in education. *The UNESCO Institute of IT in Education*. Accessed 08 September 2012. Retrieved from http://iite.unesco.org/pics/publications/ru/files/3214674.pdf.

IT educational resources of the new generation. *The UNESCO Institute of New Technologies in Education.* Accessed 8 September 2012. Retrieved from http://iite.unesco.org/pics/ publications/ru/files/3214693.pdf.

Khivrych, V. V., & Fedko, O. M. (2006). Main directions of IT development in education of Zaporizhzhia region. *Research and methodology journal: Computer at school and at home, 1*, 3–6.

Khivrych, V. V. (2011). The united educational IT space of the region: achievements and prospective. *Research and methodology journal: IT in educational establishments, 6*, 21–26.

Khivrych, V. V. (2012). *The support of a child's personality development in the conditions of the united educational IT space of the region.* Materials of the International scientific and practical conference. Kyiv: The Institute of a Gifted Child of the NAPS of Ukraine. 57–65.

Yanshina, T. S. (2005). On the definition and structure of the united educational IT space (UEITS). Education computerizing-2005: Materials of the International scientific and practical conference. Yelets: Yelets State University named after I.A. Bunin. 330–338.

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**Doświadczenie tworzenia informacyjnej przestrzeni edukacyjnej w regionie**

S t r e s z c z e n i e

Artykuł poświęcono rozpatrzeniu obecnych podejść do wykorzystywania informacyjno-komunikacyjnych technologii w procesie kształcenia, działalności pozalekcyjnej oraz zarządzania na poziomie regionalnym w celu podniesienia potencjału twórczego uczniów, nauczycieli i zarządców. Opisano koncepcyjne podstawy tworzenia informacyjnej przestrzeni edukacyjnej regionu jako platformy do wymiany informacji, osiągnięć i dokonań między pedagogami i zarządcami regionu. Określono technologię realizacji treściowego i technologicznego składnika informacyjnego środowiska edukacyjnego regionu oraz jego głównych składników funkcjonalnych. Zaproponowano model skutecznego zarządzania instytucjami edukacyjnymi w formie jednolitego systemu gromadzenia, przetwarzania oraz przechowywania ważnych informacji statystycznych i operacyjnych dotyczących czynności prowadzonych w przedszkolach, w instytucjach edukacyjnych każdego szczebla i w jednostkach samorządu terytorialnego ds. zarządzania edukacją (w okręgach i w miastach). Opisano zintegrowane środki oraz technologie mające na celu zaspokojenie zarówno potrzeb uczniów, jak i nauczycieli. Zaproponowano także model jednego centrum kontroli dla informacyjnej przestrzeni edukacyjnej regionu, uwzględniający wsparcie w zakresie jego użytkowania i opracowywania.

S ł o w a  k l u c z o w e: portal internetowy, regionalna sieć edukacyjna, informacyjne zasoby inter-netowe, ZapoWiki, wirtualne społeczności oświatowe

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## Опыт создания информационного образовательного пространства региона

### А н н о т а ц и я

Статья посвящена рассмотрению современных подходов к использованию информаци-онно-коммуникационных технологий в учебно-воспитательном процессе, внеклассной дея-тельности и управлении на уровне области для повышения творческого потенциала учащихся, учителей и управленцев. Описаны концептуальные основы создания информационного обра-зовательного пространства области как платформы для обмена информацией и достижениями между педагогами и управленцами области. Уточнена технология реализации содержательной и технологической компоненты информационного образовательного пространства области, его основные функциональные составляющие. Предложена модель реализации эффективного управления учреждениям образования в виде единой системы сбора, обработки, хранения валидной статистической и оперативной информации о деятельности дошкольных и общеобра-зовательных учебных заведений и территориальных единиц управления образования (районов и городов). Описаны интегрированные средства и технологии, направленные на обеспечение образовательных потребностей, как школьников, так и учителей. Предложена модель едино-го центра управления информационным образовательным пространством области, который организует сопровождение по его эксплуатации и развитию.

К л ю ч е в ы е  с л о в а: Интернет-портал, областная образовательная сеть, информационные веб-ресурсы, ЗапоВики, виртуальные образовательные сообщества

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## La experiencia de creación del ambito educativo de la región

### R e s u m e n

El articulo trata sobre nuevos métodos educativos que utilizan las Tecnologías de la Información y Comunicación en el proceso educacional, actividades extraescolares y la gestión a nivel regional para aumentar el poder creativo de estudiantes, profesores y personal administrativo. El artículo describe las bases conceptuales de la creación de un entorno informático-educativo de la región, como una plataforma interactiva para lograr así el intercambio de información y progreso entre los educadores y el personal administrativo de la región. Esto precisa la aplicación del contenido y las funciones tecnológicas de la tecnología en el entorno informático-educativo de la región, así como una plataforma que sirva para intercambiar información y ver el progreso de los componentes funcionales entre educadores y personal administrativo de la región y su explotación y desarrollo.

Proponemos un modelo de aplicación de un control efectivo de las instituciones educacionales de manera que haya un sistema homogéneo a la hora de recopilar, procesar y guardar la información

estadística y funcional válida sobre: las actividades de preescolar, instituciones educativas generales y unidades territoriales de gestión educativa (en municipios y ciudades). El artículo describe los métodos integrados y las tecnologías que se diseñan para garantizas las necesidades educativas de profesores como alumnos. También proponemos un modelo de un único centro de control del entorno informático-educativo de la región, que disponga de apoyo para su uso y desarrollo.

P a l a b r a s   c l a v e: Portales de internet, red educativa regional, recursos informativos de internet, Zapo Wiki, comunidades educativas virtuales