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# CURRENT WWW INFORMATION SYSTEMS ON INFORMATION TECHNOLOGIES IN EDUCATION

ANALYTICAL SURVEY

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The survey, elaborated in the framework of IITE international project "Information Technologies in Education: State-of-the-Art, Needs and Perspectives", offers developers of web-based information systems and educators the systematic description and analysis of Internet websites on information technologies in education.

The authors are responsible for the choice and presentation of the facts contained in this book and for the opinions expressed therein, which are not necessarily those of UNESCO and do not commit the Organization. The designations employed and the presentation of material throughout this publication do not imply the expression of any opinion whatsoever on the part of UNESCO concerning the legal status of any country, territory, city or area or its authorities, or concerning the delimitation of its frontiers or borders.

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## PREFACE

This survey presents the results of research into information technologies in education conducted during year 2000 at the request of UNESCO Institute for Information Technologies in Education (UNESCO IITE) in the framework of "Information Technologies in Education: State-of-the-Art, Needs and Perspectives" project. The research included development of an optimized procedure of searching the Internet for information on information technologies in education (ITE) and related activity, creation of a database of ITE information systems (ITE IS), analysis of existent ITE IS and their functional properties and organizational structures, and analysis of IS availability structure.

Based on the analysis conducted within the survey, recommendations for UNESCO have been worked out concerning the development of a global information system on ITE current state-of-the-art, needs and perspectives, including advice on target setting and choice of research topics.

The survey is destined for developers of information systems on the Internet, scientists, teachers and methodologists whose professional activity is connected with the creation and utilization of modern information and telecommunication technologies in education.

The analysis of Internet resources is presented as of the end of 1999. The regularly updated database can be found on UNESCO IITE website at <http://www.iite.ru>.

UNESCO IITE plans to make this survey annual and would be happy to know of any comments and remarks which can be sent to: 8 Kedrova St. (Bld. 3), Moscow, 117292, Russian Federation; Phone: +7 (095) 718 0744; Fax: +7 (095) 129 1225; email: [info@iite.ru](mailto:info@iite.ru).



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# 1. RESEARCH METHODS

## 1.1. Accepted Terminology

Within this survey, the following terms have been accepted:

Education – institutional teaching activity and its result.

Information Technologies in Education (ITE) – information technologies which are:

- o used to support and organize the learning process;
- o studied as universal ways of activity in various (not specialized) fields.

ITE-Related Activity – activity aimed at:

- o studying information technologies as universal ways of activity in various fields;
- o practical utilization of ITE as a means of teaching/learning support;
- o practical utilization of ITE as a means of education systems organization/management;
- o ITE propagation and development (research, projects, organizational activity etc.)

Information on ITE – any documents and factual descriptions that hold data on ITE and their components as such and ITE-related activity. It is studied in three primary aspects:

- o Information on ITE current state – data on the current or former states of development of ITE and related activity;
- o Information on ITE needs – information that contains an evaluation of former, current and future states of ITE and ITE-related activity in connection with their correspondence to personal development goals and tasks, education system, specific country or region, global civilization;
- o Information on ITE prospects – information on plans and prospects in ITE and related activity.

Information resource (IR) – any organized information of any kind available on the Internet.

Information System (IS) – a website that contains IR.

ITE Information System (ITE IS) – a specialized IS that contains information on ITE in any of the aspects described above.

"ITE State-of-the-Art, Needs and Perspectives" information system (ITESNP IS) – prospective UNESCO IITE information system whose prospects are investigated within this survey.

## 1.2. Research Goals and Tasks

The purpose of the ITE IS research is to review the existent systems and choose possible prototypes for conceptual planning of ITESNP IS. In the course of the research, the following tasks should be fulfilled:

- o Development of an optimized procedure of searching the Internet for information on ITE and related activity;
- o Creation of an ITE IS database (directory);
- o ITE information needs analysis;
- o Analysis and evaluation of ITE IS information resources supply structure by aspects:
  - information on ITE current state,
  - information on ITE needs,
  - information on ITE prospects;
- o Selection of the most effective ITE IS (up to 5) according to separate and complex characteristics in each of the described aspects;
- o Elaboration of recommendations for UNESCO on possible variants of project realization including recommendations on using existent ITE IS as prototypes for ITESNP IS.

## 1.3. Language, National-Geographic, Time, Technological Limitations and Liability

The research is limited to studying ITE IS with interfaces in English, French, Russian or Spanish, or combinations thereof.

ITE IS selection for analysis is realized taking into account representation of main global regions.

ITE IS are studied as of 01.09.1999 to 30.11.1999 via the World Wide Web. Information resources available via email, Usenet, instant communication systems (like ICQ), Hytelnet, FTP, Gopher or push channels are studied only if they are available through a WWW-gateway.

The present research of the existent ITE IS on the Internet is conducted by modeling real-life situations of education-related users. "Outer" description of the information systems is made without help of technical documentation provided by developers or any other official materials. Besides, all descriptions were made on-line in conditions which can not be restored for control measurement. Thus, the research can not be viewed as an attempt to provide the full picture of IS functions and contents. Authors of the survey are not liable for usage of materials for purposes other than those stipulated in the survey.

## 1.4 Developing Criteria for Finding, Filtering and Analyzing ITE IS

### 1.4.1 Building a list of ITE Information Topical Rubrics

In accordance with the goals of the research and based on analysis of scientific research, statistical reports, Internet teleconferences, papers of national and global ITE organizations, bibliographies and rubricators, ITE standards and manuals published in Russian or English by the leading researchers and practicing teachers from various countries (analyzed according to frequency of usage) an ITE directory has been developed. The directory (See Table 1.1) is used only for evaluation of relevancy of ITE IS found, their systematization, description and analysis within the present survey and does not claim for systematization and summarization of all ITE information.

Table 1.1  
Topical Directory of Information Technologies in Education (ITE)

1. Information Technologies in Education	1.1 ITE used to support and organize the learning process	1.1.1. ITE hardware (computers, video data terminals, specialized peripheral training equipment, audio- and video equipment, telecommunications, data media used or recommended for use in ITE) 1.1.2. Instrumental ITE general-purpose (operational systems, software environment, protocols) and special-purpose (shells) software used or recommended for use in ITE 1.1.3. Educational information resources (training, testing, demonstrational, simulating...) 1.1.4. Organizational information resources (student and teacher databases, learning process monitoring systems...) 1.1.5. ITE utilization methodology (Documentation that regulates ITE usage according to pedagogical, didactical, ergonomical and health requirements)
	1.2 ITE studied as general means of activity in various (not specialized) fields.	1.2.1. ITE hardware studied in general courses 1.2.2. General-purpose software (OS...) 1.2.3. Applied Packages and Environment 1.2.4. Telecommunication technologies
2. ITE-related Activity	2.1 Studying ITE as a general means of activity in various spheres.	2.1.1. General information science courses syllabi 2.1.2. ITE manuals 2.1.3. Computer-based ITE training aids 2.1.4. Educational institutions that provide ITE education 2.1.5. Statistics on ITE learning in different countries and at different education levels
	2.2 Practical utilization of ITE as a means of teaching/learning support;	2.2.1. Methodical, analytical, program materials on the experience and prospects of ITE usage in the learning process 2.2.2. Educational statistics on ITE utilization in the learning process in different countries and at different education levels
	2.3 Practical utilization of ITE as a means of teaching/learning support;	2.3.1. Methodical, analytical, program materials on the experience and prospects of ITE usage for educational systems organization/management 2.3.2. Educational statistics on ITE utilization for educational systems organization/management in different countries and at different education levels
	2.4 ITE propagation and development activity.	2.4.1. Global and National Policy on ITE 2.4.2. ITE legislation, standards and norms 2.4.3. Organizational activity for ITE propagation in regions and educational institutions 2.4.4. ITE marketing and economy 2.4.5. ITE research 2.4.6. ITE informing activity 2.4.7. Staff education, training and retraining for ITE 2.4.8. ITE support and maintenance 2.4.9. Development of new ITE



#### 1.4.2. Development of ITE IS Primary Description Parameters

To select, describe and analyze ITE-related websites the ITE IS primary parameters system has been developed (Table 1.2). For convenient use the parameters are distributed by 7 main groups:

- 1) title information;
- 2) ITE IS goals and objectives;
- 3) Target audience;
- 4) Characteristics of supplied information resources (IR);
- 5) IS functional capabilities and interface characteristics;
- 6) Technical properties;
- 7) Organizational mechanism.

Groups 1-4 parameters are used to find, select and initially analyze ITE IS. Group 4 parameters are used to analyze and evaluate ITE information resources. Groups 5-7 parameters are used to describe the most valuable ITE IS in detail and conduct their comparative analysis in order to select possible prototypes for ITESNP IS.

Table 1.2  
ITE IS Description Parameters

Primary Parameter Parameter Components	Acceptable Parameter Values
1. Title Information:	
1.1 IS Title	Text
1.2 URL	URL.
1.3 Supporting Organization	- publishing, informational and analytical centers, - educational institutions, - museums, - municipal bodies, - libraries, - periodicals, - scientific organizations, - government educational bodies, - interest groups, - professional educational associations, - commercial institutions;
1.4 IS Short Summary	text
1.5 Interface Languages	language(s)
2. ITE IS Goals and Objectives	
2.1 IS Goals	- informational products advertising and sales - informing on programs, occasions and announcing educational events - advertising of educational services - information resource services - informational support for decision-taking systems in education management - public discussions initialization, community development
2.2 IS Objectives (expert evaluation)	- N (Internet navigation facilitation by distributing information on ITE IS and choosing the most appropriate in each case) - M (monitoring of ITE IS devoted to a certain topic in different aspects for research or other purposes on the basis of internal metasearch system) - A (accumulation of information on a specific subject to cover existing gaps and satisfying priority needs for ITE information) - P (statistical, analytical or other processing of the accumulated ITE IR)
3. ITE IS Target Audience:	
3.1 Education Levels Covered	6 levels of education according to UNESCO classification. International Standard Classification of Education (ISCED 1997) is used to define levels of education: <b>level 0: pre-primary education</b> – the initial stage of organized instruction;

	<p><b>level 1: primary education or first stage of basic education</b> – the initial stage of systematic education;</p> <p><b>level 2: lower secondary or second stage of basic education</b> - implementation of basic skills and foundation for lifelong learning;</p> <p><b>level 3: (upper) secondary education;</b></p> <p><b>level 4: post-secondary non-tertiary education</b> - pre-degree foundation courses, short vocational programs, second cycle programs;</p> <p><b>level 5: first stage of tertiary education;</b></p> <p><b>level 6: second stage of tertiary education</b> – leads to an advanced research qualification;</p>
3.2 Categories of End Users	<ul style="list-style-type: none"> <li>- students</li> <li>- teachers and methodologists, course developers</li> <li>- administrators</li> </ul>
3.3. Place of Development and Maintenance/Regional Orientation of The Service	country(state)/region(s)
<b>4. Information Resources Characteristics</b>	
4.1. IR Subject-Matter	- directory codes – Table 1.1
4.2. Types of IR Presented	<ul style="list-style-type: none"> <li>- hypertext</li> <li>- downloaded document</li> <li>- audio</li> <li>- video</li> <li>- software</li> </ul>
4.3. Volume of Information	<ul style="list-style-type: none"> <li>number of web pages</li> <li>- number of links in ITE resource lists</li> <li>- number of database entries</li> <li>- number of downloaded documents</li> </ul>
4.4. National-Geographic Characteristics of IR	<ul style="list-style-type: none"> <li>- languages</li> <li>- countries of origin</li> </ul>
4.5. Time Scope Covered	Years
4.6. IR "State", "Needs" and "Prospects" Relevancy	Directory codes with "1", "2" and "3" indexes
<b>5. IS Functionality and Interface Characteristics</b>	
5.1. Internal Navigation	<ul style="list-style-type: none"> <li>- multi-language search</li> <li>- multiple search criteria</li> <li>- subject catalog</li> </ul>
5.2. Resource Grouping by Education Levels	yes/no
5.3. Resource Grouping by Education Levels Inside of User Categories Grouping and Vice Versa	Yes/no
5.4. Resource Grouping by User yes/no Categories	
5.5. IR Type Selection/Grouping	<ul style="list-style-type: none"> <li>- Email and autoresponders</li> <li>- Usenet, regional and specialized newsgroups</li> <li>- Email newsletters</li> <li>- Online communication services</li> <li>- People and companies search</li> <li>- Hytelnet databases</li> <li>- FTP archives, global and local FTP search</li> <li>- Gopher databases and Veronica search engine</li> <li>- WWW resources</li> <li>- Global, local and specialized WWW resource lists</li> <li>- Search engines or automated indexes (global, local, specialized)</li> <li>- Active information channels</li> </ul>
5.6. Type of Access	<ul style="list-style-type: none"> <li>- paid</li> <li>- restricted</li> <li>- unlimited</li> </ul>

5.7. Completeness of IR Access	- IR title lists - Annotated IR lists - Full text materials and demonstrations - Analytical commentary
5.8. Interactivity (ability to be augmented or altered by the user)	yes/no
5.9. Co-operation with other IR	links to other IR; joint information service; joint projects
<b>6. Technical Characteristics:</b>	
6.1. OS Used	Text
6.2. Web Server Software Used	Text
6.3. Website Realization	HTML version
6.4 Use of Other WWW Technologies	(push- pull, streaming video & audio, Shockwave etc.);
<b>7. Organizational Structure:</b>	
7.1. Information Collection	- administrative mechanism - commercial mechanism - research monitoring
7.2. Information Sources	- individuals - organizations
7.3. Usage of Institutional Network for Information Collection	yes/no
7.4. Information Processing	- verification - revision - expert examination - transformation etc.
7.5. Information Actualization	- archives - outdated data purging
7.6. IS Diversification and Development	- stages of IS development; - plans for the future
7.7. Financing	- volume and sources - expense items and types

## 1.5. Initial Search for ITE-related Websites

### 1.5.1. Selection of Search Engines and Order of Their Utilization

Initial search for ITE-related websites is done with the help of following methods:

- 1) searching through global Web directories (Yahoo etc.);
- 2) searching through global search engines with automated indexing (AltaVista, HotBot, All the Web);
- 3) searching through metasearch engines; ProFusion and Savvy Search engines were selected as the most complete after analyzing special literature and conducting a series of searches on ITE-related subjects (see Table 1.3);
- 4) expert recommendations.



### 1.5.2. Russian, English, Spanish and French Search Terms Development

For the initial directory-based search (see table 1.1) in Russian, English, Spanish and French a limited number of English, Spanish, Russian and French phrases were selected to serve as search terms (see Table 1.4).

Table 1.4  
Search Terms Used

Subject	Search Terms
All information technologies in education	Rus: "информационные технологии в образовании" Eng: "information technologies in education" Spa: "nuevas tecnologías en educacion" Fre: "télématiques dans la formation"
IT for students (study)	Eng: "technologies for learners(students)" Spa: "tecnologias para estudiantes" Fre: "technologies d'enseignement" Eng: "educational databases for learners(students)" Spa: "bases de datos educacionales para estudiantes" Fre: " bases des données formationelles pour étudiants" Eng: "information technologies for learners" Spa: "nuevas tecnologías para estudiantes" Fre: "nouvelles technologies pour étudiants" Eng: "educational technologies for learners (students)" Spa: " tecnologias educacionales para estudiantes" Fre: "technologies d'enseignement pour étudiants"
IT for teachers (teaching)	Eng: "technologies for teachers (educators)" Spa: "tecnologias para profesores (educadores)" Fre: "technologies pour professeurs" Eng: "educational databases for teachers" Spa: " bases de datos educacionales para profesores" Fre: " bases des données formationelles pour professeurs" Eng: "information technologies for teachers" Spa: "nuevas tecnologías para profesores" Fre.: "nouvelles technologies pour professeurs" Eng: "educational technologies for teachers" Spa: "tecnologias educacionales para profesores" Fre.: "technologies d'enseignement pour professeurs"
Statistics of use of information technologies in education	Eng: "statistics of use of information technologies in education" Spa: "estadística de uso de las nuevas tecnologías en educacion" Fre.: "statistiques d'usage des nouvelles technologies dans la formation"
National policy on use of information technologies in education	Eng: "national policy on use of information technologies in education" Spa: "politica nacional de uso de las nuevas tecnologías en educacion" Fre: "politique nationale d'usage des nouvelles technologies dans la formation"
Educational plans on studying of use of information technologies in education	Eng: "educational plans on studying of use of information technologies in education" Spa: "planes educacionales sobre estudios de uso de las nuevas tecnologías en educacion" Fre: "plans formationels des études d'usage des nouvelles technologies dans la formation"

### 1.5.3. Building a Primary List of Websites on ITE

As a result of the initial search, a list of over 500 ITE-related websites is formed which includes the following data:

- o Title /organization (if the organization title is different from IS title) /URL;
- o Short summary, peculiarities of content.

This list is built as a working document and is not included in the final overview.

## 1.6. Major ITE IS Selection and Description

Selection of ITE IS from the list of websites is realized in two stages:

**Stage 1: 500⇒181.** ITE IS are selected according to their relevancy to ITE (based on the directory shown in Table 1.2). The quantity of IS selected for analysis is limited to 180 by the framework of the survey. The list of selected ITE IS with short summaries is included in the Appendix.

Summarization of ITE IS is realized according to the following parameters (possible parameter values are shown in Table 1.2):

- o Title/organization (if the organization title is different from IS title)
- o URL;
- o Short summary, peculiarities of content;
- o Volume of data.

**Stage 2: 181⇒39.** Major ITE IS are selected according to the volume of information presented (at least 1000 documents, links, database entries) and national-geographic representation (the final list includes ITE IS from the main regions of the world).

Major ITE IS are described according to the following parameters (possible parameter values are shown in table 1.2):

- o Title;
- o Interface language (English, Russian, French, Spanish);
- o IS objectives;
- o Education levels;
- o User categories;
- o Place of development and maintenance/regional orientation of the service;
- o Types of IR supplied.

**Stage 2: 39⇒20.** On this stage, 20 most effective ITE IS are selected by experts as ITESNP IS prototypes. Their description is made according to the last three groups of parameters shown in Table 1.2:

- o IS functionality and interface characteristics;
- o Technical specifications;
- o Organizational structure.

## 1.7. Information Resources Analysis of Major ITE IS

### 1.7.1. Description of information presented on state-of-the-art, needs and perspectives of ITE in major ITE IS

The description of information resources on ITE in major ITE IS is realized in tables with combined indicators which correspond to aspects of "S" – "state", "N" – "needs" and "P" – "prospects of ITE development", and columns of the ITE information directory (Table 1.1).

Table 1.5  
Form for Information Resources Analysis in Major ITE IS

ITE IS Title	IR relevancy to the aspects of "state", "needs" and "prospects of development" according to the subject rubrics					
	1. Information Technologies in Education			2. ITE-related activity		
	1.1 ITE used to support and organize the learning process	1.2 ITE studied as general means of activity in various (non-specialized) fields	1.3 Studying ITE as a general means of activity in various spheres	2.1 Practical utilization of ITE as a means of teaching/ learning support	2.2 Practical utilization of ITE as a means of educational systems organization/ management	2.3 ITE propagation and development activity

The empty cells of the table are filled with expert evaluation of information presented on the rubric in the mentioned aspects. The expert evaluation (1 or 0) denotes only presence or absence of information but not its characteristics. The evaluation is realized by searching the IS for specific types of documents and resources relevant to each aspect. Types of documents are defined according to the accepted definitions of the terms "ITE state", "ITE needs" and "ITE prospects".

### 1.7.2. Analysis of ITE Information Structure in ITE IS

To analyze the structure of information on the ITE in the ITE IS a conventional indicator of information volume in the rubric V is introduced. It allows making an approximate evaluation of the relative volume of information presented in the set of ITE IS by subject rubrics.

$$V_{ij} = \sum_{m=1}^n (G_m E_{mij})$$

Where  $V_{ij}$  is the volume of information on rubric I in aspect j,

n is the number of ITE IS in the sample,

m is the current number of the ITE IS,

$E_{mij}$  is the expert evaluation of information presence in system m on rubric I in aspect j.

Due to absence of valid weighing methodology the weight of each IS was accepted as 1.

Distributions  $\{V_{ij}\}$  for different samples of the ITE IS set should be the result of processing.

To analyze the structure of information the major ITE IS are grouped according to the following samples:

1. Solid sample – all major ITE IS;
2. Sampling by target audience;
3. Sampling by level of education.

Distribution analysis for these samples helps to show subject rubrics and aspects that are relatively well or weakly covered by the existing ITE IS.

## 1.8 Analysis of the Information Needs in ITE

The analysis of information needs in ITE should be realized by questioning the target audiences (administrators, teachers and methodologists, educational scientists) in UNESCO member states. The questionnaires are formed on the basis of subject directory (Table 1.1) and other parameters that describe the IR (pp. 4.1. – 4.5. Table 1.2).

The result of the survey is distributions of needs indicator  $N_{ij}$  in the ITE information by subject rubrics. The distributions are calculated for samples formed according to belonging to a target audience and world region.

## 1.9 Evaluation of Necessity and Possibilities of ITESNP IS Development

### 1.9.1. Detecting ITE Information Needs Not Satisfied by Existing ITE IS

The detection of unsatisfied needs is realized through comparing the distributions of information volume indicator  $V_{ij}$  and information needs indicator  $N_{ij}$  for identical samples.

To make such comparison, distribution  $\{V_{ij}\}$  is created in each of the samples and its minimums are defined.

Because research of information needs on ITE is currently not financed and no data on  $\{N_{ij}\}$  is available, the working assumption is made that the unsatisfied needs correspond to minimums of IR supply in various samples (regional, level-specific, audience-specific).

### 1.9.2. Preliminary Goal Setting for ITESNP IS

ITESNP IS goals can be set on the following levels:

1. Internet navigation facilitation by distributing information on existing ITE IS and selecting the most relevant in each specific case.
2. Monitoring ITE information resources on specific subjects in different aspects for metasearch-based research or other purposes.
3. Accumulating information resources on specific subjects to fill existing gaps and satisfying priority ITE information needs.
4. Statistical and analytical processing of the selected and accumulated ITE IR.

The volume and complexity of issues involved in the creation of ITESNP IS grow significantly in the move from level 1 objectives to level 4. Thus ITESNP IS of different levels will be discussed here, each of them performing correspondent tasks.

Problems to be solved in the process of developing level 1 and level 2 ITESNP IS are mostly of an organizational and technical nature and can be defined based on the available information. Problems that arise in the process of developing level 3 or 4 ITESNP IS can be correctly defined only if there is insight into information needs.

Based on preliminary evaluation of unsatisfied needs (see p. 1.9.1.) and UNESCO general objectives and priorities preliminary suggestions will be made on level 3 or 4 ITESNP IS subject orientation.

### 1.9.3. Selection and Comparative Analysis of the Most Effective ITE IS

To select potential prototypes for ITESNP IS, preliminary selection and comparative analysis of the most effective ITE IS is realized. ITE IS are selected by experts according to the descriptions of new ITE IS and analysis of their information resources.

ITE IS ability to serve different user categories is crucial for the development of level 1 ITESNP IS (parameters 5.1 – 5.9 Table 1.2).

ITE IS functionality has to be elicited to build level 2 ITESNP IS (parameters 6.1 – 6.6 Table 1.2).

With level 3 or 4 ITESNP IS, organizational structure of ITE IS should be the main concern.

Functionality analysis of the major ITE IS is performed in accordance with a set of criteria defined by parameters 5.1 – 5.9 in Table 1.2.

Functionality analysis of the most effective ITE IS is performed in accordance with a set of criteria defined by parameters 6.1 – 6.6 in Table 1.2.

Organizational structure analysis of the most effective ITE IS is performed in accordance with a set of criteria defined by parameters 7.1 – 7.7 in Table 1.2.

Based on the comparative analysis of the major ITE IS five ITE IS are selected as prototypes for possible creation of ITESNP IS.

Results of the comparative analysis are presented as tables, charts, diagrams with text comments and a written summary.



## 1.10. Recommendations Development

Based on the results of the analytical survey recommendations for UNESCO are developed concerning possible directions in further realization of the project including:

- Recommendations on selecting existing ITE IS as possible prototypes for ITESNP IS;
- Recommendations on goal setting and choosing directions for further research which can help evaluate the expediency of ITESNP IS and its required functionality.



## 2. DESCRIPTION OF MAJOR ITE IS

As a result of preliminary search made in accordance with the methodological principles (see Part 1 of this survey) over 500 websites that contain information on ITE were found on the Internet. The complete list of websites found was formed as a working document and is not included in the final overview.

According to the websites' content relevancy to ITE (based on the directory shown in Table 1.2) 180 ITE IS were selected from the list. The list of selected ITE IS with short summaries is included in the Appendix.

The selected ITE IS were evaluated according to volume of information (at least 1000 documents or database entries) and national-geographic representation. As a result, a list of 39 major ITE IS was built.

The major ITE IS were described using the following parameters (possible parameter values are shown in Table 1.2):

- o Title;
- o Interface language (English, Russian, French, Spanish);
- o IS objectives;
- o Education levels;
- o User categories;
- o Place of development and maintenance/regional orientation of the service;
- o Types of IR supplied.

Tables 2.1 – 2.4 present the descriptions of the main ITE information systems.

## 2.1. Description of the Major ITE IS with an English-Language Interface (26)

Table 2.1  
Description of the Major ITE IS with English-Language Interface

#	ITE IS Title / URL	Interface Languages	IS Objectives	Levels of Education	User Categories	Place of Development and Maintenance/ Regional Orientation of Service	Types of IR Supplied
1	2	3	4	5	6	7	8
1.	Association for Media and Technology in Education in Canada. <a href="http://www.amtec.ca/">http://www.amtec.ca/</a>	English	Navigation, Monitoring, Accumulation, Processing	0-6	Administrators; teacher and methodologists, course developers	Canada/ English-Speaking Countries	hypertext downloaded document audio video software
2.	Association for the Advancement of Computing in Education <a href="http://www.aace.org/">http://www.aace.org/</a>	English	Navigation, Monitoring, Accumulation, Processing	0-6	Administrators; teacher and methodologists, course developers	USA/ Global Service	hypertext  downloaded document
3.	Asynchronous Learning Networks (ALN) <a href="http://www.aln.org/alnweb/index.htm">www.aln.org/alnweb/index.htm</a>	English	Accumulation, Processing	3 - 6	Students, teacher and methodologists	USA / USA	hypertext software
4.	BECTa British Educational Communications and Technology Agency <a href="http://www.becta.org.uk">www.becta.org.uk</a>	English	Navigation, Monitoring, Accumulation, Processing	0- 6	Administrators; teacher and methodologists, course developers; students	United Kingdom / United Kingdom	hypertext downloaded document audio video software
5.	CALT (The Center for Advanced Learning Technologies) <a href="http://www.insead.fr/CALT">http://www.insead.fr/CALT</a>	English	Navigation, Accumulation, Processing	5 - 6	Students, teacher and methodologists	France / Global Service	hypertext downloaded document
6.	CHEST / <a href="http://www.chest.ac.uk">www.chest.ac.uk</a>	English	Navigation, Monitoring, Accumulation, Processing	3 - 6	Administrators; teacher and methodologists, course developers; students	United Kingdom / United Kingdom, Ireland	hypertext downloaded document software
7.	EdCITE / <a href="http://www.ccnmtl.columbia.edu/resources/edcite/">http://www.ccnmtl.columbia.edu/resources/edcite/</a>	English	Accumulation, Processing	0 - 6	Administrators; teacher and methodologists, course developers; students	USA / Global Service	hypertext downloaded document

1	2	3	4	5	6	7	8
8.	Education World American Fidelity Assurance Company www.education-world.com	English	Navigation, Monitoring, Accumulation, Processing	0-6	Administrators; teacher and methodologists, course developers; students	USA / Global Service	hypertext downloaded document audio video software
9.	Educational Technology WebRing (EdTech) http://iml.umkc.edu/web-ring/ /edtech	English	Navigation, Monitoring, Accumulation	1 - 6	Teacher and - Students methodologists, course developers;	USA / USA	hypertext downloaded document
10.	EDUCAUSE (Transforming Education Trough Information Technologies) www.educause.edu	English	Navigation, Monitoring, Accumulation, Processing	4 - 6	Administrators; teacher and methodologists, course developers; students	USA / Global Service	hypertext downloaded document audio video software
11.	ERIC Clearinghouse on Information & Technology http://eric.syr.edu/ithome/	English	Monitoring, Accumulation, Processing	0 - 6	Administrators; teacher and methodologists, course developers; students	USA / Global Service	hypertext downloaded document
12.	EvNet (Network for the Evaluation of Education and Training Technologies) http://socserv2.mcmaster.ca/ /srnet/evnet.htm	English	Monitoring, Accumulation	4 - 6	Administrators; teacher and methodologists, course developers	Canada / Canada	hypertext downloaded document software
13.	Global Information Networks in Education/GINIE http://www.ginie.org/	English Spanish French German	Navigation, Monitoring, Accumulation, Processing	0 - 6	Administrators; teacher and methodologists, course developers	USA / Global Service	hypertext downloaded document audio video software
14.	IBM Higher Education – Global Campus http://www.hied.ibm.com/ /index.html	English	Navigation, Monitoring, Accumulation, Processing	4 - 6	Administrators; teacher and methodologists, course developers; students	USA / Global Service	hypertext downloaded document audio video software
15.	Instructional Technology Connections http://www.cudenver.edu/ /~mryder/itcon.html	English	Navigation, Monitoring	0 - 6	Administrators; teacher and methodologists, course developers; students	USA / North America	hypertext downloaded document

1	2	3	4	5	6	7	8
16.	International Society for Technology in Education <a href="http://www.iste.org/">http://www.iste.org/</a>	English	Navigation, Monitoring, Accumulation, Processing	1 - 3	Administrators; teacher and methodologists, course developers	USA / Global Service	hypertext downloaded document
17.	League for Innovation in the Community College <a href="http://www.league.org/welcome.htm">http://www.league.org/ /welcome.htm</a>	English	Navigation, Monitoring, Accumulation, Processing	4- -6	Administrators; teacher and methodologists, course developers; students	USA / North America	hypertext downloaded document
18.	Milken Exchange <a href="http://www.milkenexchange.org/">http://www.milkenexchange.org/</a>	English	Navigation, Monitoring, Accumulation, Processing	0 - 3	Administrators; teacher and methodologists, course developers	USA / USA	hypertext downloaded document
19.	National Coordination Team (NCT) Website <a href="http://www.ncteam.ac.uk/index.html">http://www.ncteam.ac.uk/ /index.html</a>	English	Navigation, Monitoring, Accumulation, Processing	4 - 6	Administrators; teacher and methodologists, course developers	United Kingdom / United Kingdom	hypertext downloaded document
20.	NEA Teaching Learning and Technology / NEA <a href="http://www.nea.org/cet/">http://www.nea.org/cet/</a>	English	Navigation, Monitoring, Accumulation, Processing	0 - 3	Administrators; teacher and methodologists, course developers	USA / Global Service	hypertext downloaded document
21.	NODE / The NODE Learning Technologies Network <a href="http://thenode.org/">http://thenode.org/</a> <a href="http://node.on.ca">http://node.on.ca</a>	English	Navigation, Monitoring, Accumulation, Processing	1 - 6	Administrators; teacher and methodologists, course developers	Canada / Global Service	hypertext downloaded document audio video software
22.	SyllabusWeb Syllabus Press, Inc. <a href="http://www.syllabus.com/index.htm">www.syllabus.com/index.htm</a>	English	Monitoring, Accumulation, Processing	4 - 6	Administrators; teacher and methodologists, course developers	USA / Global Service	hypertext downloaded document
23.	Teaching and Learning Technology Programme (TLTP) <a href="http://www.ncteam.ac.uk/tltp/">http://www.ncteam.ac.uk/tltp/</a>	English	Monitoring, Accumulation, Processing	4 - 6	Administrators; teacher and methodologists, course developers	United Kingdom / United Kingdom	hypertext downloaded document software
24.	The Learning Development Center CITAL <a href="http://www.staffs.ac.uk/cital/welcome.html">http://www.staffs.ac.uk/cital/ /welcome.html</a>	English	Navigation, Monitoring	0 - 6	Administrators; teacher and methodologists, course developers; students	United Kingdom / Global Service	hypertext downloaded document

1	2	3	4	5	6	7	8
25.	U.S. Department of Education Office of Educational Technology <a href="http://www.ed.gov/Technology/">http://www.ed.gov/Technology/</a>	English	Navigation, Monitoring, Accumulation, Processing	0 - 6	Administrators; teacher and methodologists, course developers; Students	USA / Global Service	hypertext downloaded document audio video software
26.	WHO'S WHO IN INSTRUCTIONAL TECHNOLOGY <a href="http://hagar.up.ac.za/catts/learner/m1g1/whointro.html">http://hagar.up.ac.za/catts/ /learner/m1g1/whointro.html</a>	English	Navigation, Monitoring, Accumulation	0 - 6	Administrators; teacher and methodologists, course developers	RSA / Global Service	hypertext

## 2.2. Description of the Major ITE IS with Russian-Language Interface (4)

Table 2.2  
Description of the Major ITE IS with Russian-Language Interface

	ITE IS Title / URL	Interface Languages	IS Objectives	Levels of Education	User Categories	Place of Development and Maintenance / Regional Orientation of Service	Types of IR Supplied
1.	Informika / Research Institute for Information Technologies and Telecommunications <a href="http://www.informika.ru">http://www.informika.ru</a>	Russian, English	Navigation, Monitoring, Accumulation, Processing	0 - 6	Administrators; teacher and methodologists, course developers; Students	Russia / CIS	hypertext downloaded document software
2.	XXI: Information Science, School <a href="http://www.school.kiev.ua">http://www.school.kiev.ua</a>	Russian	Navigation, Monitoring	0 - 6	Administrators; teacher and methodologists, course developers; Students	Ukraine / CIS	hypertext downloaded document
3.	Automated Cadastre "Information Resources For Higher Education in Russia" <a href="http://www3.unicor.ac.ru">http://www3.unicor.ac.ru</a> and International Web Catalog "Information Resources of the Open Educational System" <a href="http://catalog.unicor.ru">http://catalog.unicor.ru</a> Distance Education Informational and Analytical Support Center under Ministry of Education of Russian Federation	Russian, English	Navigation, Monitoring, Accumulation	4 - 6	Administrators; teacher and methodologists, course developers;	Russia / CIS	hypertext
4.	COMMONWEALTH OF INDEPENDENT STATES Informational Server of Education <a href="http://cis.unibel.by/">http://cis.unibel.by/</a>	Russian	Navigation, Monitoring, Accumulation	3 - 6	Administrators; teacher and methodologists, course developers; students	Belarus / CIS	hypertext



## 2.3. Description of the Major ITE IS with Spanish-Language Interface (4)

Table 2.3  
Description of the Major ITE IS with Spanish-Language Interface

	ITE IS Title / URL	Interface Languages	IS Objectives	Levels of Education	User Categories	Place of Development and Maintenance/ Regional Orientation of Service	Types of IR Supplied
1.	Red Educacional Enlaces	Spanish	Monitoring, Accumulation, Navigation	1-5	Educators, methodologists, Administrators	Chile \ Chile	hypertext . downloaded document
2.	Organizacion de Estados Iberoamericanos para la Educacion, la Ciencia y la Cultura	Spanish some documents in Portuguese and English	Monitoring	6	Educators, methodologists, Administrators	Spain \ Latin America, Spain	hypertext downloaded document video
3.	CONICYT Comision Nacional de Investigacion Cientifica y Tecnologica	Spanish	Accumulation, Processing	6	Educators, Administrators Students	Chile \ Chile	hypertext downloaded document
4.	REDUC Red Latinoamericana de Documentacion y Informacion en Educacion	Spanish	Accumulation	6	Educators, Administrators Methodologists	Chile \ Latin America	hypertext downloaded document

## 2.4. Description of the Major ITE IS with French-Language Interface (5)

Table 2.4  
Description of the Major ITE IS with French-Language Interface

	ITE IS Title / URL	Interface Languages	IS Objectives	Levels of Education	User Categories	Place of Development and Maintenance / Regional Orientation of Service	Types of IR Supplied
1.	Centre de Technologies de l'Education <a href="http://www.cte.lu/">http://www.cte.lu/</a>	French	Navigation, Monitoring	1-3	Students, teachers and methodologists, course developers	France / France	hypertext downloaded document audio video
2.	CNDP (National Center for Educational Information) <a href="http://www.meq.gouv.qc.ca/m_ped.htm">http://www.meq.gouv.qc.ca/m_ped.htm</a>	French	Navigation, Monitoring, Accumulation	0-3	Students, teachers and methodologists, course developers	France / France	hypertext downloaded document
3.	Ministere de l'Education du Quebec Plans d'intervention sur les NTIC <a href="http://www.meq.gouv.qc.ca/m_ped.htm">http://www.meq.gouv.qc.ca/m_ped.htm</a>	French	Navigation, Monitoring, Accumulation, Processing	0-6	Students, teachers and methodologists, course developers, Administrators	Quebec / Canada	hypertext downloaded document
4.	Educnet <a href="http://www.educnet.education.fr/">http://www.educnet.education.fr/</a>	French Spanish English	Navigation, Monitoring, Accumulation, Processing	1-6	Students, teachers and methodologists, course developers, Administrators	France / France, European Union	hypertext downloaded document video
5.	La vitrine APO <a href="http://vitrine.ntic.org/vitrine/">http://vitrine.ntic.org/vitrine/</a>	French Spanish English	Monitoring, Accumulation, Processing	1-6	Students, teachers and methodologists, course developers, Administrators	France / France, Canada	hypertext downloaded document

### 3. ANALYSIS OF MAJOR INFORMATION SYSTEMS ON INFORMATION TECHNOLOGIES IN EDUCATION

Statistical data processing shown in Tables 2.1 – 2.4 allowed analyzing functional peculiarities, supported levels of education, target audiences and types of supplied resources of the major ITE IS. The results of the analysis are shown at Figure 3.1 –3.4.

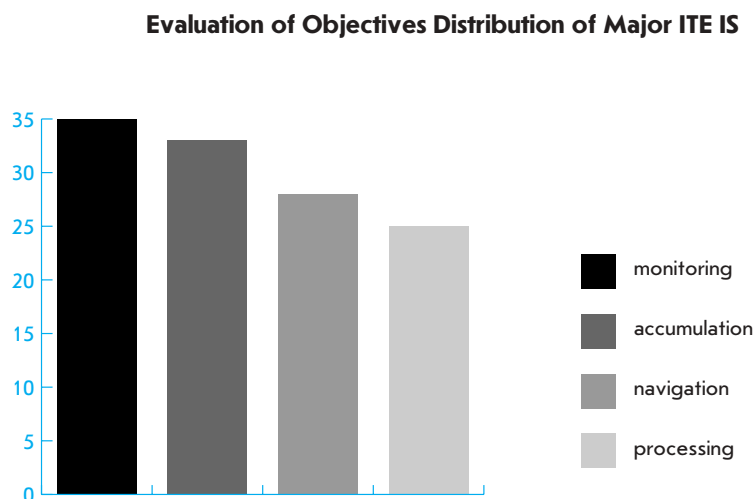


Figure 3.1. IS Objectives

As shown in Figure 3.1, most ITE IS perform the function of monitoring ITE IS. The significant number of systems that accumulate information resources can be described by the fact that this survey included mainly national information systems that maintain large databases and resource catalogs. As was expected, the smallest number of systems performs information resources processing.

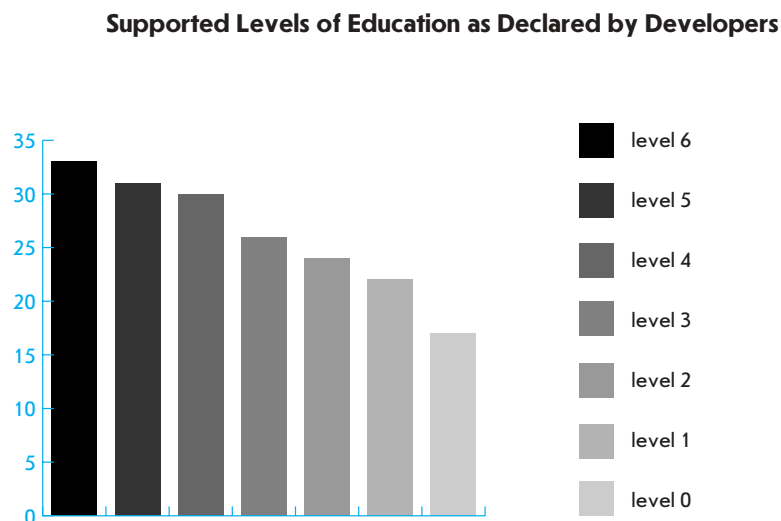


Figure 3.2. Levels of Education

Data presented in Figure 3.2 shows that most ITE IS specialize in higher and further education levels. At the same time it is worth mentioning that using ITE on pre-primary and primary levels is also covered in ITE IS although to a smaller degree.

User Categories as Declared by Developers

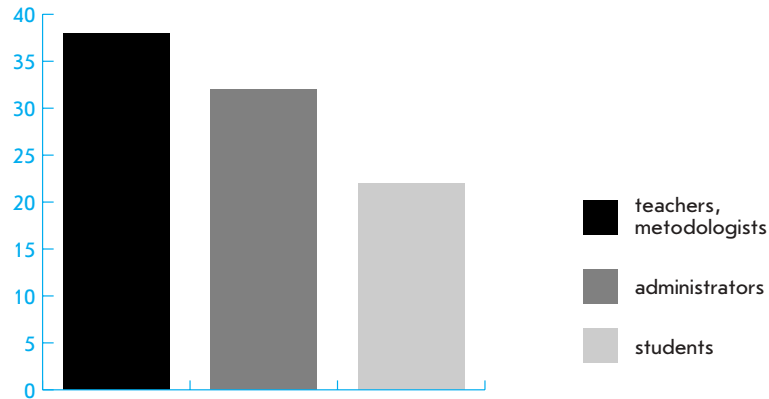


Figure 3.3. User Categories

As shown at Figure 3.3 most ITE IS target educators, methodologists and education administrators. Such distribution not only characterizes peculiarities of sampling (which was based on covering national education policy and development of curricula that involve ITE) but also represents the general Figure of ITE IS development on the Web – unlike information systems on using the Internet in education.

Types of Information Resources Supplied by Major ITE IS

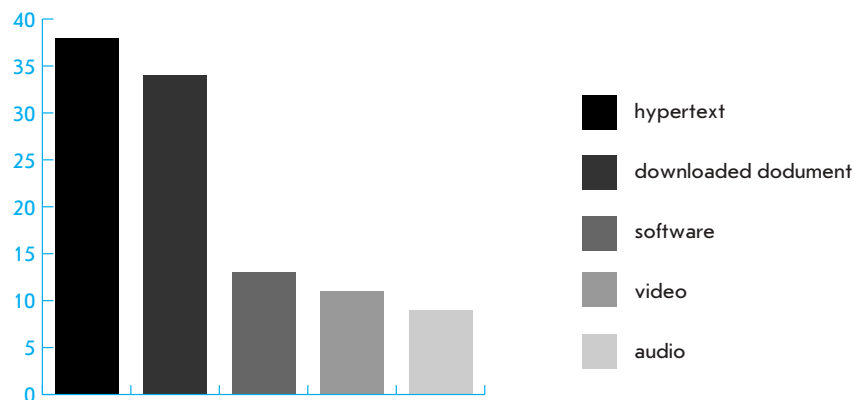


Figure 3.4. Types of IR presented

As shown in Figure 3.4, the vast majority of ITE IS provide information resources as hypertext (internal and external links are also included in this group) and downloaded documents (usually as Microsoft Word .DOC or Acrobat Reader .PDF files). Apparently, low bandwidth limits the use of audio and video IR. What concerns software, its limited use can be explained by absence of copyright control for educational software distributed over the Internet.

## 4. ANALYSIS OF THE INFORMATION RESOURCES OF MAJOR ITE IS

The description of information resources on ITE in major ITE IS was realized in tables with combined indicators which corresponded to aspects of "S" – "state", "N" – "needs" and "P" – "prospects of ITE development", and columns of the ITE information directory (Table 1.1).

The empty cells of the table were filled with expert evaluation of information presented on the rubric in the mentioned aspects. The expert evaluation (1 or 0) denoted only presence or absence of information but not its characteristics. The evaluation was realized by searching the IS for specific types of documents and resources relevant to each aspect. Types of documents were defined according to the accepted definitions of terms "ITE state", "ITE needs" and "ITE prospects".

## 4.1. Analysis of Information Resources in Major ITE IS with English-Language Interface

Table 4.1  
Analysis of Information Resources in Major ITE IS with English-Language Interface

ITE IS Title	IR relevancy to the aspects of "state", "needs" and "prospects of development" according to the subject rubrics					
	1.Information Technologies in Education			2.ITE-related activity		
	1.1 ITE used to support and organize the learning process	1.2 ITE studied as general means of activity in various (not specialized) fields	1.3 Studying ITE as a general means of activity in various spheres	2.1 Practical utilization of ITE as a means of teaching/ learning support	2.2 Practical utilization of ITE as a means of educational systems organization/ management	2.3 ITE propagation and development activity
1	2	3	4	5	6	7
Association for Media and Technology in Education in Canada	S/1,2,4	S/1		S/1	S/1	S/1,2,3,4,5,6
Association for the Advancement of Computing in Education	S/2,3,4	S/1,2,4	S/2,4	S/1	S/1	S/1,3,5,6,9
Asynchronous Learning Networks (ALN)	S/1,2,3	S/1,2,3,4	S/2,3,4 P/4	S/1 P/1	-	S/1,3,5,8 N/1,5 P/1,3
BECTa / British Educational Communications and Technology agency	S/1,2,3,4 N/1 P/1	S/1,4 P/4	S/3 P/3	S/1		S/1,2,3,5,8 P/1,2,3
CALT (The Center for Advanced Learning Technologies)	S 1, 2, 3, 4 P 3, 4	S 1, 2, 3, 4	S 2, 3, 4	S 1	S 1	S 3, 4, 5, 6, 7, 8, 9 N 9 P 9
CHEST / CHEST	S 1, 2, 3	S 1, 2, 3, 4	S 3			S 3, 4, 8, 9
EdCITE / <a href="http://www.ccnmtl.columbia.edu/resources/edcite/">http://www.ccnmtl.columbia.edu/ /resources/edcite/</a>	1/S 2/S 3/S, P 4/S 5/S, P	1/S 2/S, P 3/S	1/S 2/S 4/S	1/S	1/S	5/S 6/S, P 8/S 9/S, P

1	2	3	4	5	6	7
Educational Technology WebRing (EdTech) <a href="http://iml.umkc.edu/web-ring/edtech">http://iml.umkc.edu/web-ring/edtech</a>	1/S 2/S 3/S 4/S 5/S, P	1/S 2/S, P 3/S	1/S 2/S 3/S, P 4/S	1/S	1/S	2/S 3/S 5/S 6/S, P 8/S, P 7/S 9/S, P
Education-World: Internet Resources / EDUCAUSE (Transforming Education Trough Information Technologies)	S/1,2,3,5 S/1,2,3,4 N/2 P/3	S/2,3,4 S/2,3,4 N/2 P/2,4	S/2,3 S/1,2,3,4,5 N/3 P/1,4	S/1 S/1,2 N/1 P/1	2.3.1/1 S/1,2	S/3,6 S/1,3,5,6,7,8,9 N/3 P/1,3
INFOMINE – Scholarly Internet Resource Collections / University of California	S/2,3,4	S/2,3,4	S/3	-	-	S/5
International Society for Technology in Education (ISTE)	S/1,2,3,4,5 N/3,4,5 P/5	S/2,4 P/2,4	S/1,2,3,4	S/1 N/1	S/1 N/1	S/1,2,3,5,7,8 N/3 P/3,5
League for Innovation in the Community College <a href="http://www.league.org/welcome.htm">http://www.league.org/welcome.htm</a>	S 1,2,3,4,5	S 1,2,3,4	S 2,3,4,5	S 1	S 1	S 1,3,5,6,7,8,9 N 3,6,8,9 P 3,6,8,9
Milken Exchange <a href="http://www.milkenexchange.org/">http://www.milkenexchange.org/</a>	S 1,2,3	S 1,2,4	S 2,3	S 1,2	S 1,2	S 3,5,6,7 P 7
National Co-ordination Team (NCT) Website <a href="http://www.ncteam.ac.uk/index.html">http://www.ncteam.ac.uk/index.html</a>	3/S 4/S	2/S, P 3/S	2/S 3/S, P		1/S	1/S 3/S 5/S 7/S 8/S 9/S, P
National Educational Technology Standards (NETS) / International Society for Technology in Education (ISTE)	S/1,2,3,5	S/1,2,3	S/1,3,4	S/1 N/2	S/1	S/5,6,8,9
NEA Teaching Learning and Technology NEA <a href="http://www.nea.org/cet/">http://www.nea.org/cet/</a>	3/S 4/S	2/S, P	2/S 3/S, P 4/S			5/S 6/S, P 8/S, P 9/S, P

1	2	3	4	5	6	7
NODE The NODE Learning Technologies Network <a href="http://thenode.org/">http://thenode.org/</a> <a href="http://node.on.ca">http://node.on.ca</a>	2/S 3/S 4/S	2/S, P 3/S	1/S 2/S 3/S, P 4/S, P 5/S, P	1/S	1/S	5/S 6/S 8/S, P 9/S, P
NODE / The NODE Learning Technologies Network	S/1,2,3,4 N/2,3	S/1,2,3,4	S/2,3,4	S/1,2	S/1,2	S/5,8
NODE / The NODE Learning Technologies Network	S/1,2,3,4,5 N/1,2,3,4 P/1,2,3	S/1,2,3,4 N/4 P/4	S/1,2,3,4,5 N/3,4,5 P/3,4,5	S/1,2 N/2 P/1,2	S/1,2 N/1,2 P/1,2	S/1,2,3,5,6,7,8,9 N/3,8 P/1,2,3,5,6,8,9
Office of Learning Technologies (OLT) / Government of Canada	S/3,4	S/2,4	S/2,3	S/1	S/1	S/1,3,5,6,9 N/9
SyllabusWeb / Syllabus Press, Inc. / <a href="http://www.syllabus.com/index.htm">www.syllabus.com/index.htm</a>	2/S 3/S 4/S	2/S 3/S 4/S	1/S 2/S 3/S 4/S	1/S		3/S 6/S
T.H.E. Journal Online	S/1,2,3,4 P/1,2,3,4	S/1,2,3,4	S/1,2,3,4		S/1	S/3,6,7,8,9 P/3,9
Teaching and Learning Technology Programme (TLTP) <a href="http://www.ncteam.ac.uk/tltp/">http://www.ncteam.ac.uk/tltp/</a>	2/S 3/S 4/S	1/S 2/S 3/S 4/S	1/S 2/S 3/S			5/S 6/S 8/S 9/S
TeleLearning Network of Centers of Excellence (TL – NCA)	S/1,2,3,4,5	S/4	S/4,5	S/1 P/1	S/1 P/1	S/1,3,5,6,7,8,9 N/6 P/3,5,6,7
The Learning Development Center CITAL <a href="http://www.staffs.ac.uk/cital/">http://www.staffs.ac.uk/cital/</a> <a href="http://welcome.html">/welcome.html</a>	2/S 3/S 4/S	2/S 3/S 4/S	1/S 2/S 3/S 4/S	1/S	1/S	5/S 6/S 8/S 9/S
U.S. Department of Education Office of Educational Technology <a href="http://www.ed.gov/Technology/">http://www.ed.gov/Technology/</a>	1/S 2/S 3/S 4/S 5/S	1/S 2/S 3/S 4/S	4/S 5/S	1/S 2/S	1/S 2/S	1/S 2/S 3/S, P 4/S, P 6/S, P 9/S



1	2	3	4	5	6	7
UNESCO Communication, Information and Informatics / UNESCO /	S/1,2,3 P/1	S/4	S/3,5 P/5	S/1,2 P/2	S/1	S/1,2,3,5,6,7,8,9 N/2,6 P/1,2,3,5,6,7,9
WHO'S WHO IN INSTRUCTIONAL TECHNOLOGY <a href="http://hagar.up.ac.za/catts/learner/m1g1/whointro.html">http://hagar.up.ac.za/catts/learner/m1g1/whointro.html</a>	1/S 2/S 3/S 4/S 5/S	1/S 2/S 3/S 4/S	1/S 2/S 3/S 4/S	1/S		3/S 5/S 6/S 7/S 8/S 9/S

## 4.2. Analysis of Information Resources in Major ITE IS with a Russian-Language Interface

Table 4.2  
Analysis of Information Resources in Major ITE IS with Russian-Language Interface

ITE IS Title	IR relevancy to the aspects of "state", "needs" and "prospects of development" according to the subject rubrics					
	1. Information Technologies in Education			2. ITE-related activity		
	1.1 ITE used to support and organize the learning process	1.2 ITE studied as general means of activity in various (nonspecialized) fields	1.3 Studying ITE as a general means of activity in various spheres	2.1 Practical utilization of ITE as a means of teaching/ learning support	2.2 Practical utilization of ITE as a means of educational systems organization/ management	2.3 ITE propagation and development activity
Informika / State Research Institute for Information Technologies and Telecommunications / <a href="http://www.informika.ru">http://www.informika.ru</a>	S/1,2,3,4,5 N/1,2,3,4 P/1,2,3	S/1,2,3 N/3 P/3	S/1,2,3,4,5 N/2,3,4 P/1,3	S/1,2	S/1 P/1	S/1,2,3,4,5,6,7,8,9 N/1,2,4,6,7 P1, 2,5,6
Automated Cadastre "Information Resources For Higher Education in Russia" <a href="http://www3.unicor.ac.ru">http://www3.unicor.ac.ru</a> and International Web Catalog "Information Resources of the Open Educational System" <a href="http://catalog.unicor.ru">http://catalog.unicor.ru</a> Distance Education Informational and Analytical Support Center under Ministry of Education of Russian Federation	S/1,2,3,4,5	S/1,3,4				

### 4.3. Analysis of Information Resources in Major ITE IS with a French-Language Interface

Table 4.3  
Analysis of Information Resources in Major ITE IS with French-Language Interface

ITE IS Title	IR relevancy to the aspects of "state", "needs" and "prospects of development" according to the subject rubrics					
	1.Information Technologies in Education			2.ITE-related activity		
	1.1 ITE used to support and organize the learning process	1.2 ITE studied as general means of activity in various (nonspecialized) fields	1.3 Studying ITE as a general means of activity in various spheres	2.1 Practical utilization of ITE as a means of teaching/ learning support	2.2 Practical utilization of ITE as a means of educational systems organization/ management	2.3 ITE propagation and development activity
Centre de Technologies de l'Education <a href="http://www.cte.lu/">http://www.cte.lu/</a>	1/S 2/S 3/S, P 4/S	1/S 2/S, N 3/S, N, P 4/S, N, P	1/S 3/S, N, P 4/S	1/S		5/S, N, P 6/S, N, P 8/S, N, P 9/S, N
Ministère de l'Education du Québec / Plans d'intervention sur les NTIC <a href="http://www.meq.gouv.qc.ca/m_ped.htm">http://www.meq.gouv.qc.ca/m_ped.htm</a>	1/S 2/S 3/S 4/S	1/S 2/S, N 3/S 4/S, N, P	2/S 3/S, N, P 4/S	1/S		1/S, N, P 2/S, N, P 3/S, P 5/S, N, P 6/S; 8/S; 9/S, N
CNDP (National Center for Educational Information) <a href="http://www.cndp.fr/">http://www.cndp.fr/</a>	1/S 2/S, N 3/S, N, P 4/S, N 5/S, P	1/S, N 2/S, N, P 3/S, N, P 4/S, N, P	1/S 2/S, N, P 3/S, N 4/S, N, P	1/S, N, P		2/S, N 3/S, N, P 5/S, N 6/S, N 8/S, N, P; 9/S, N, P
Educnet <a href="http://www.educnet.education.fr/">http://www.educnet.education.fr/</a>	1/S, N 2/S 3/S, N 4/S	1/S, N, P 2/S, N 3/S, N 4/S, N, P	2/S, N 3/S, N, P 4/S, N, P	1/S, P 2/S, N, P	1/S 2/S	1/S, N, P 2/S, N, P 3/S, N, P 5/S, N, P 6/S 7/S, N, P 8/S, N, P; 9/S, N, P
La vitrine APO <a href="http://vitrine.ntic.org/vitrine/">http://vitrine.ntic.org/vitrine/</a>	1/S 2/S 3/S, N 4/S	1/S 2/S, N, P 3/S 4/S, N, P	1/S 3/S, N	1/S	1/S	3/S 5/S, N 8/S, N, P 9/S, N, P

## 4.4. Analysis of Information Resources in Major ITE IS with a Spanish-Language Interface

Table 4.4  
Analysis of Information Resources in Major ITE IS with Spanish-Language Interface

ITE IS Title	IR relevancy to the aspects of "state", "needs" and "prospects of development" according to the subject rubrics					
	1. Information Technologies in Education			2. ITE-related activity		
	1.1 ITE used to support and organize the learning process	1.2 ITE studied as general means of activity in various (nonspecialized) fields	1.3 Studying ITE as a general means of activity in various spheres	2.1 Practical utilization of ITE as a means of teaching/ learning support	2.2 Practical utilization of ITE as a means of educational systems organization/ management	2.3 ITE propagation and development activity
ICCE (Calasanz Institute of Science of the Education)	S 1, 2, 3, 4	S 1, 2, 3, 4	S 1, 2, 3, 4	S 1	S 1	S 1, 3, 4, 5, 6, 7, 8
EDUcacion en la RED (EDUcation in the NET)	S 1, 2, 3, 4	S 1, 2, 3, 4	S 1, 2, 3, 4	S 1P 1	S 1 P 1	S 1, 3, 5, 6, 7, 8, 9 P 5
REACCIUM (Academic Net of Investigation Centers and National Universities)	S 1, 2, 3, 4 N 3, 4 P 3, 4	S 1, 2, 3, 4	S 1, 2, 3, 4	S 1 P 1	S 1	S 1, 3, 5, 6, 8, 9 P 5, 9
REDUC (Latin American Net of Documentation and Information in Education)	S 1, 2, 3, 4 P 3, 4	S 3, 4	S 2, 3, 4 P 4	S 1, 2 P 1, 2	S 1, 2 P 1, 2	S 1, 2, 3, 5, 6, 8 N 3, 5, 6 P 5

#### 4.5 Analysis of ITE Information Structure in ITE IS

To analyze the structure of information on ITE in ITE IS a conventional indicator of information volume in a rubric  $V$  was introduced. It allowed to approximately evaluate relative volume of information presented in the set of ITE IS by subject rubrics.

$$V_{ij} = \sum_{m=1}^n (G_m E_{m,ij})$$

Where  $V_{ij}$  is the volume of information on rubric  $I$  in aspect  $j$ ,  
 $n$  is the number of ITE IS in the sample,  
 $m$  is the current number of the ITE IS,  
 $E_{m,ij}$  is the expert evaluation of information presence in system  $m$  on rubric  $I$  in aspect  $j$ .

Distributions  $\{V_{ij}\}$  were calculated for different samples of the ITE IS set.

To analyze the structure of information the major ITE IS were grouped according to the following samples:

- o Solid sampling – all major ITE IS;
- o Regional sampling – ITE IS focused on specific regions;
- o Sampling by target audience;
- o Sampling by level of education.

Distribution analysis for these samples helps to show subject rubrics and aspects that are relatively well or weakly covered by existing ITE IS.

4.5.1. Sampling by "State", "Needs" and "Perspectives Aspect"

Subject Distribution of Information on Current State of ITE in the Analyzed IS

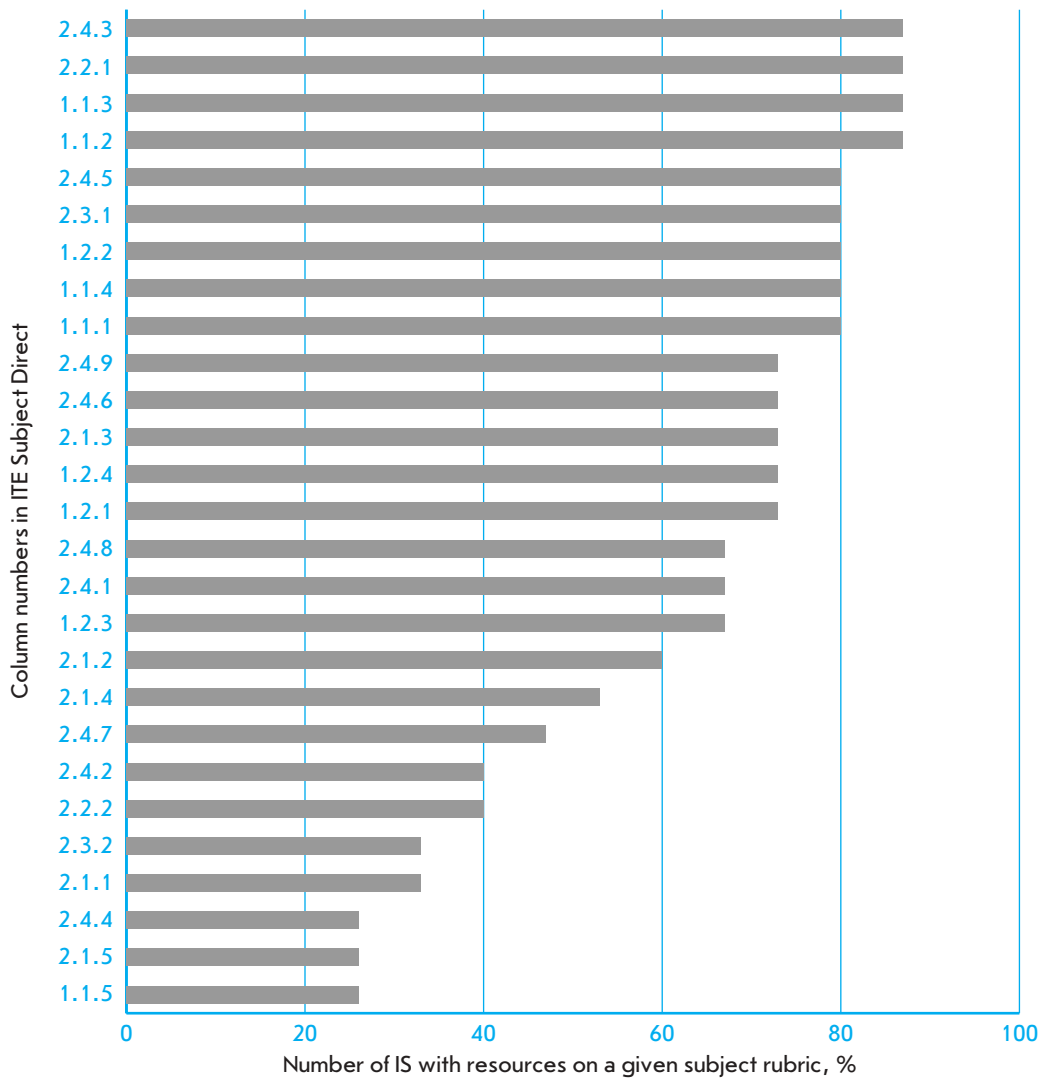


Figure 4.1

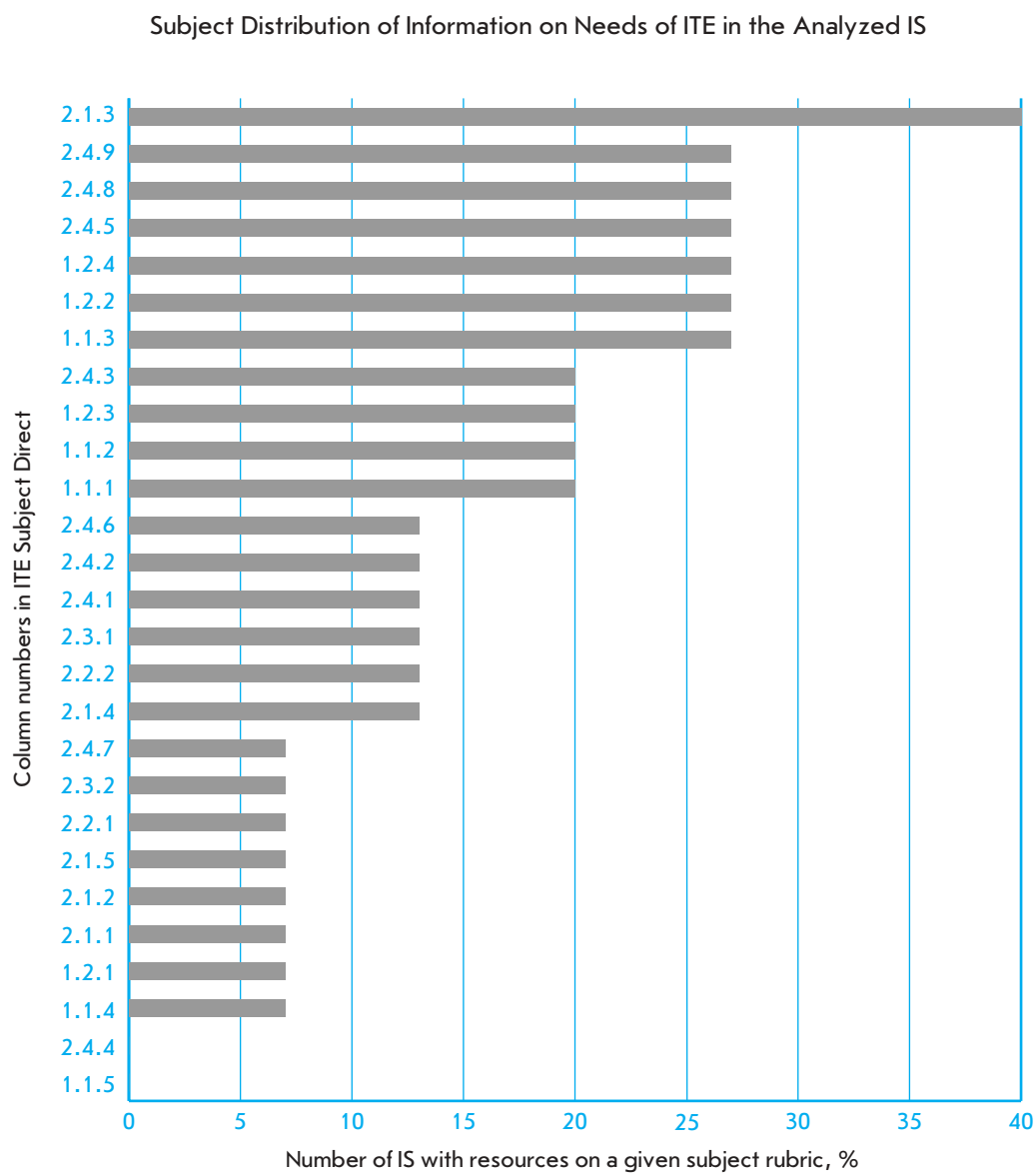


Figure 4.2

Subject Distribution of Information on Perspectives of ITE in the Analyzed IS

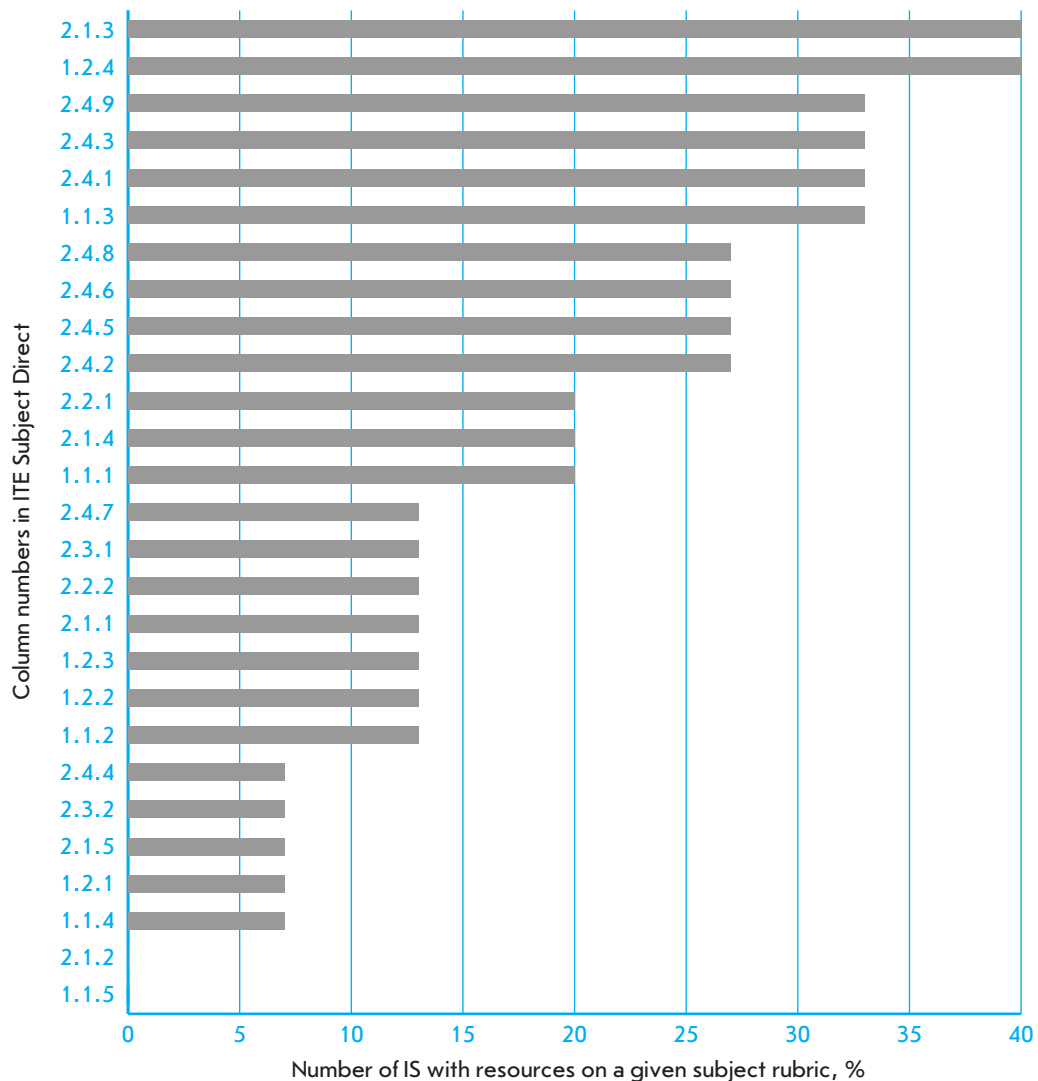


Figure 4.3

The major part of information presented in ITE IS deals with the current state of information technologies utilization in education. Much less ITE IS cover any subject rubrics (according to the directory) on needs and prospects of ITE.

Thematically the information is structured as follows. On the whole (in all aspects) the best coverage is given to issues of ITE propagation activity, use of computer and telecommunications training aids, distribution of information on experience and prospects of ITE both in the learning process and for educational systems organization/management. A significant amount of educational and organizational information resources including general and special purpose software is also presented.

Most ITE IS provide information on ITE research and new ITE development. Less coverage is given to global and national ITE policies, educational institutions that provide ITE training, staff training and retraining for ITE implementation. Very little attention is paid to ITE legislation and norms, economical aspects of ITE implementation, curricula and various ITE statistics.

At the same time in the aspect of "state" there is a significant number of materials on ITE supporting activity, particularly ITE propagation in regions, ITE experience sharing, various educational and administrative IR (see Figure 4.1).

In the aspect of "needs" there is definite demand for information on using computer-based training aids, new ITE development and maintenance, telecommunication technologies and general-purpose software (see Figure 4.2).

In the aspect of "prospects", along with information on prospects of development of educational IT such as computer-based training aids and telecommunication technologies, there is a small (much smaller than in "state" aspect) amount of data on ITE propagation as well as global and national ITE policies.

The content analysis of the major ITE IS revealed lack of information (in all aspects) on the following subjects: ITE-based curricula; statistical data on ITE utilization; international ITE policy; pre-service and in-service ITE instruction for educational personnel.



#### 4.5.2 Sampling by Target Audience (only "state" aspect)

Subject Distribution of Information on Current State of ITE for Educational Administration

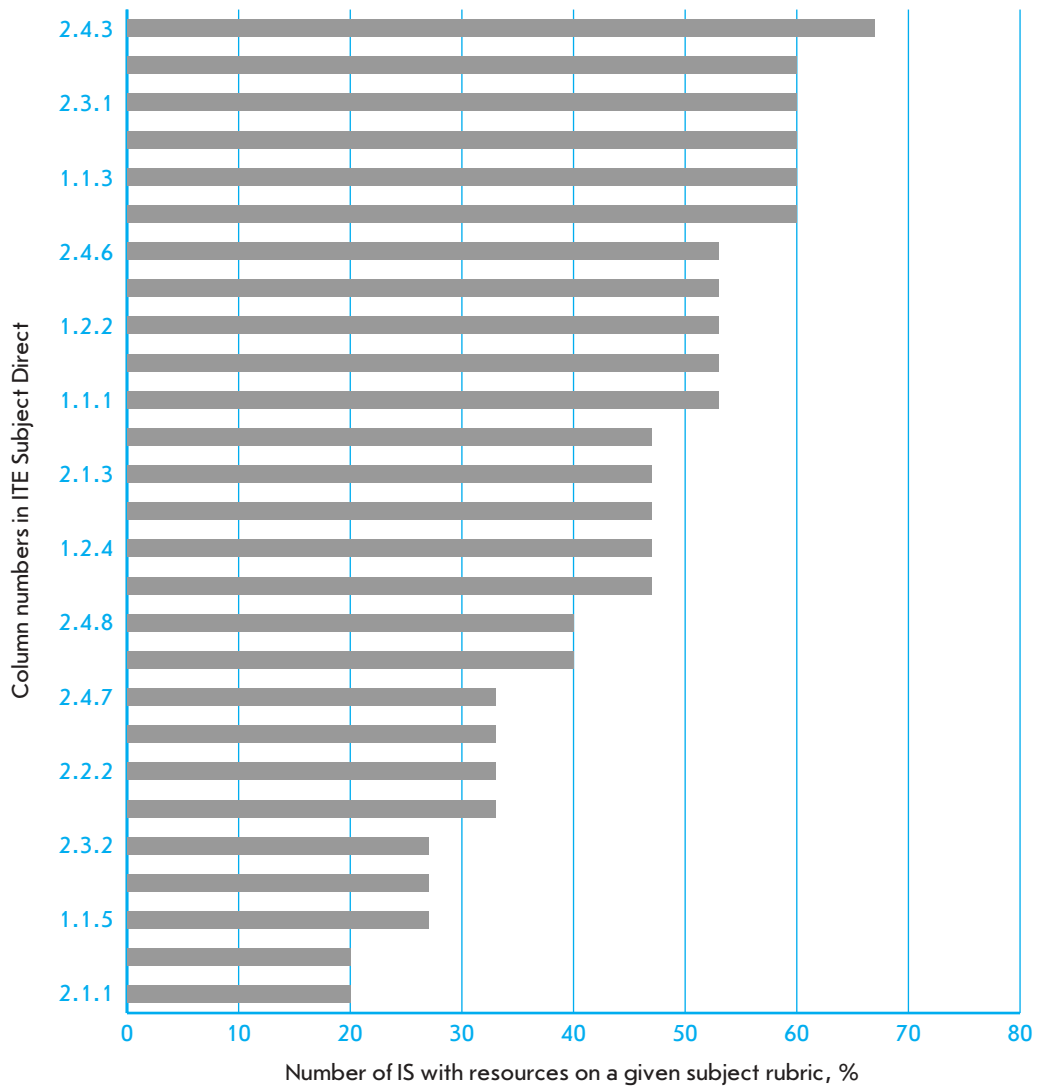


Figure 4.4

Subject Distribution of Information on Current State of ITE for Teachers, Methodologists and Course Developers

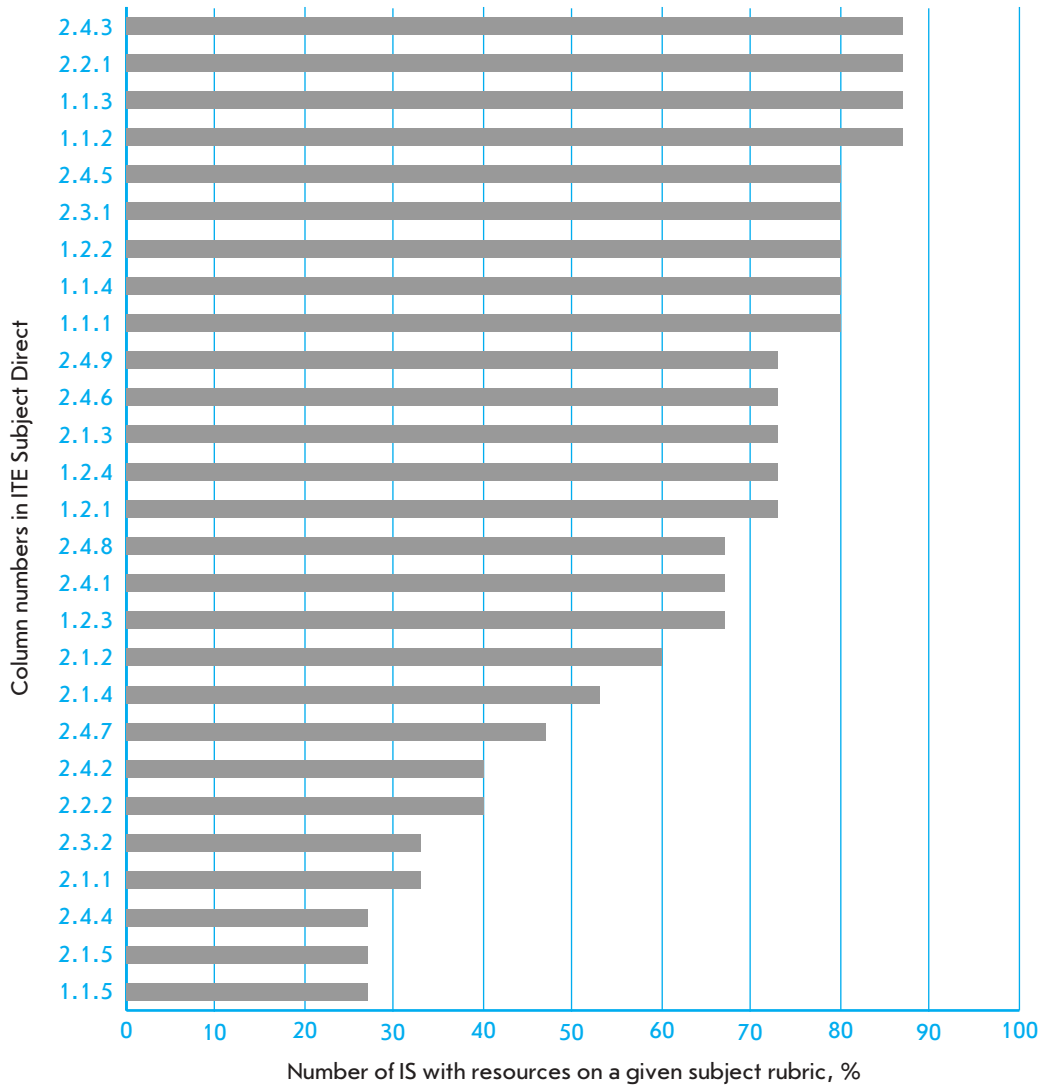


Figure 4.5

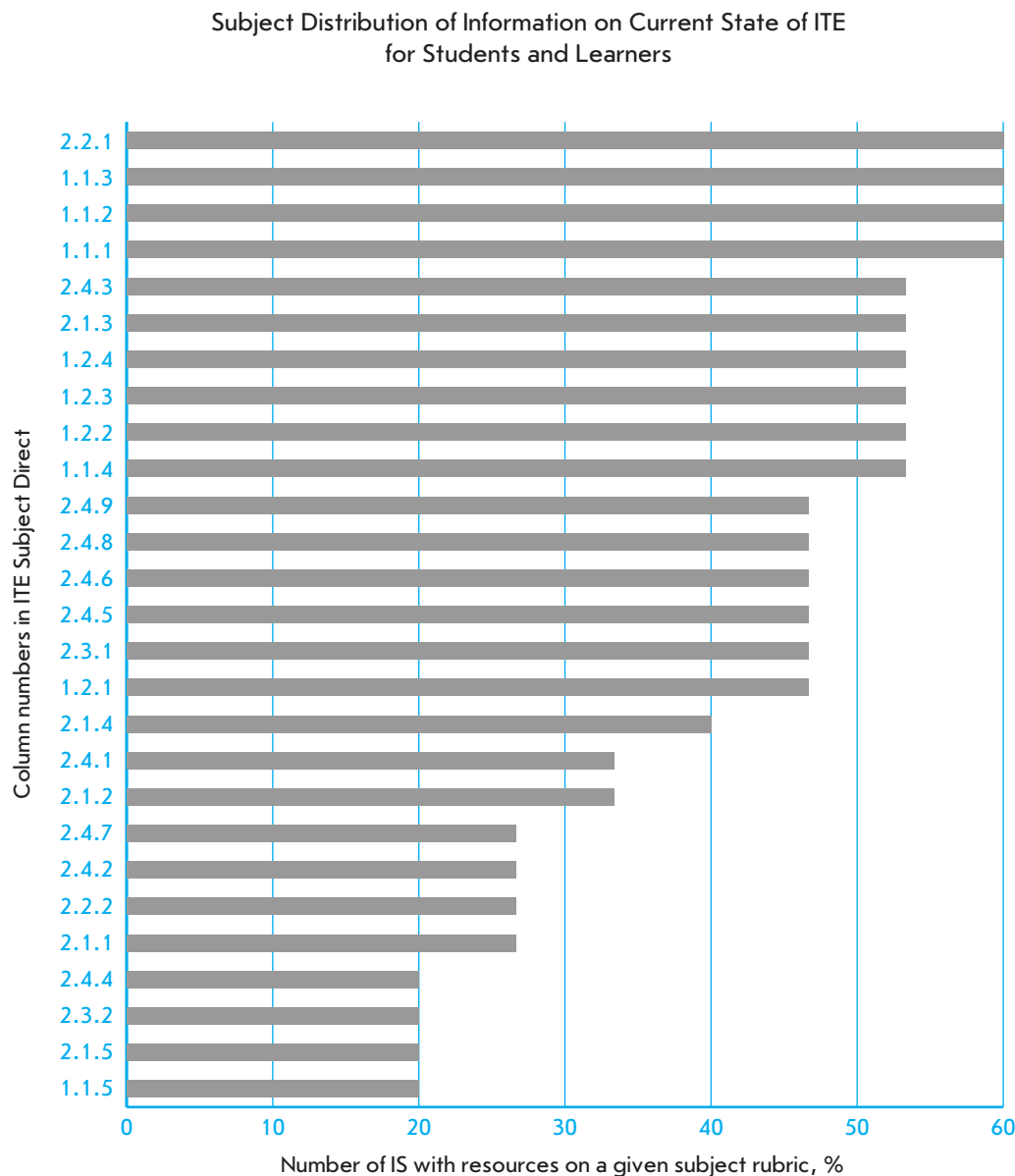


Figure 4.6

As shown in Figures 4.4 – 4.6, the subject structure of informational resources presented in major ITE IS does not vary much depending on target audiences. With all the conventionality of the expert evaluations used in the analysis such distribution shows that most major ITE IS are large multi-subject websites with information resources for all user categories.

The subject structure of the presented information is characterized by significant amount of data on the experience and prospects of ITE in educational systems organization/management, ITE propagation in regions and educational institutions, and informing on ITE targeted on user category defined as "Administrators".

For users defined as "teachers, methodologists and course developers" there is relative prevalence of IR on the following subjects: experience and prospects of ITE in the learning process, educational IR, ITE research, new ITE development, informing on ITE. Less information is provided on ITE usage methodology, ITE legislation, standards and norms.

For "learners" category there are relatively more information resources on such subjects as general purpose informational courses (educational, testing, demonstrational, training), general purpose ITE software, ITE hardware, computer-based training aids for ITE, ITE telecommunications technologies, application packages and environment, general purpose software.

For all user categories, there is a certain lack of resources on subjects such as global and national ITE policies, staff training and retraining for ITE, statistical data on ITE, economical aspects of ITE utilization, ITE-based curricula, ITE utilization methodology (documentation that regulates ITE usage according to pedagogical, didactical, ergonomical and health requirements).

4.5.3. Sampling by Level of Education (only "state" aspect)

Subject Distribution of Information on Current State of ITE for Education Level 0

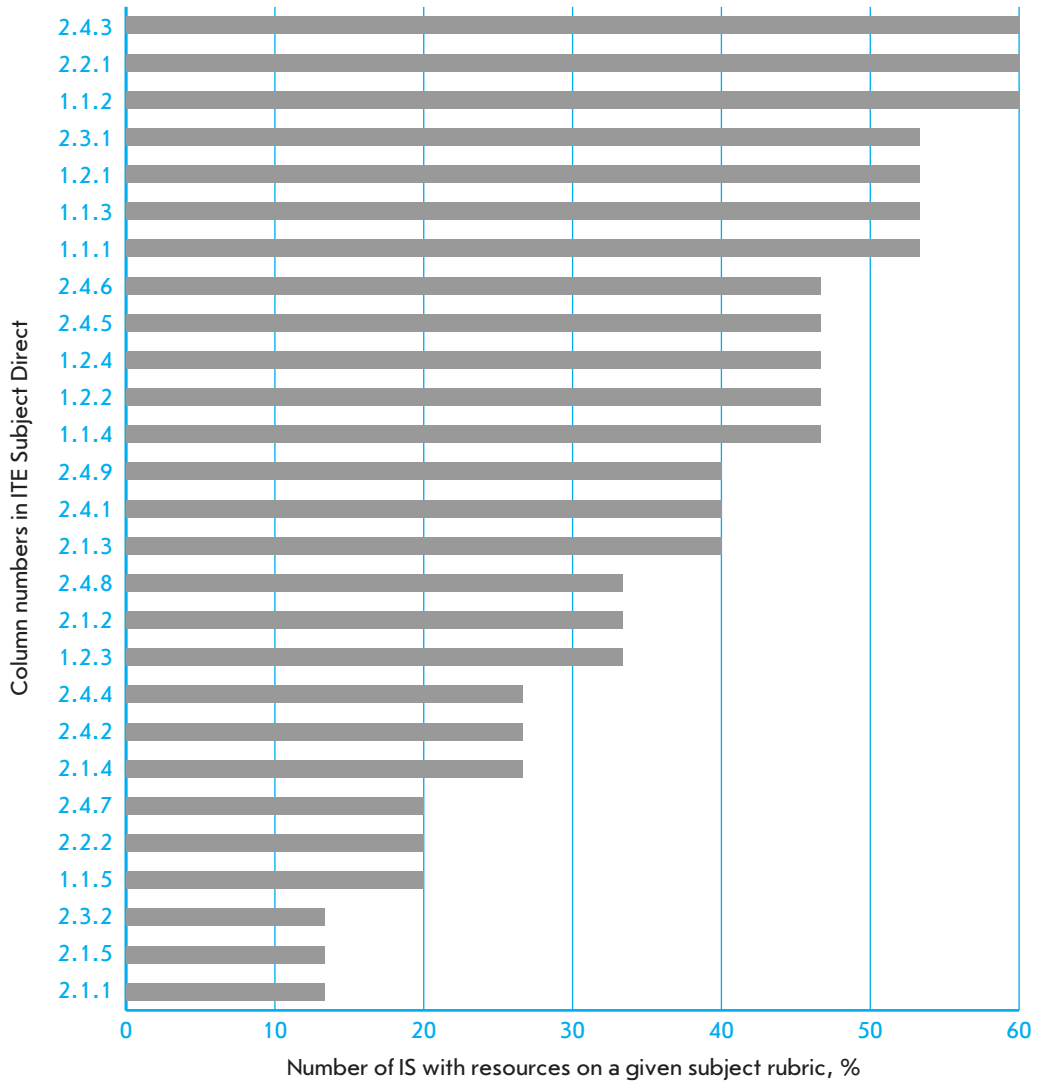


Figure 4.7

Subject Distribution of Information on Current State of ITE for Education Level 1

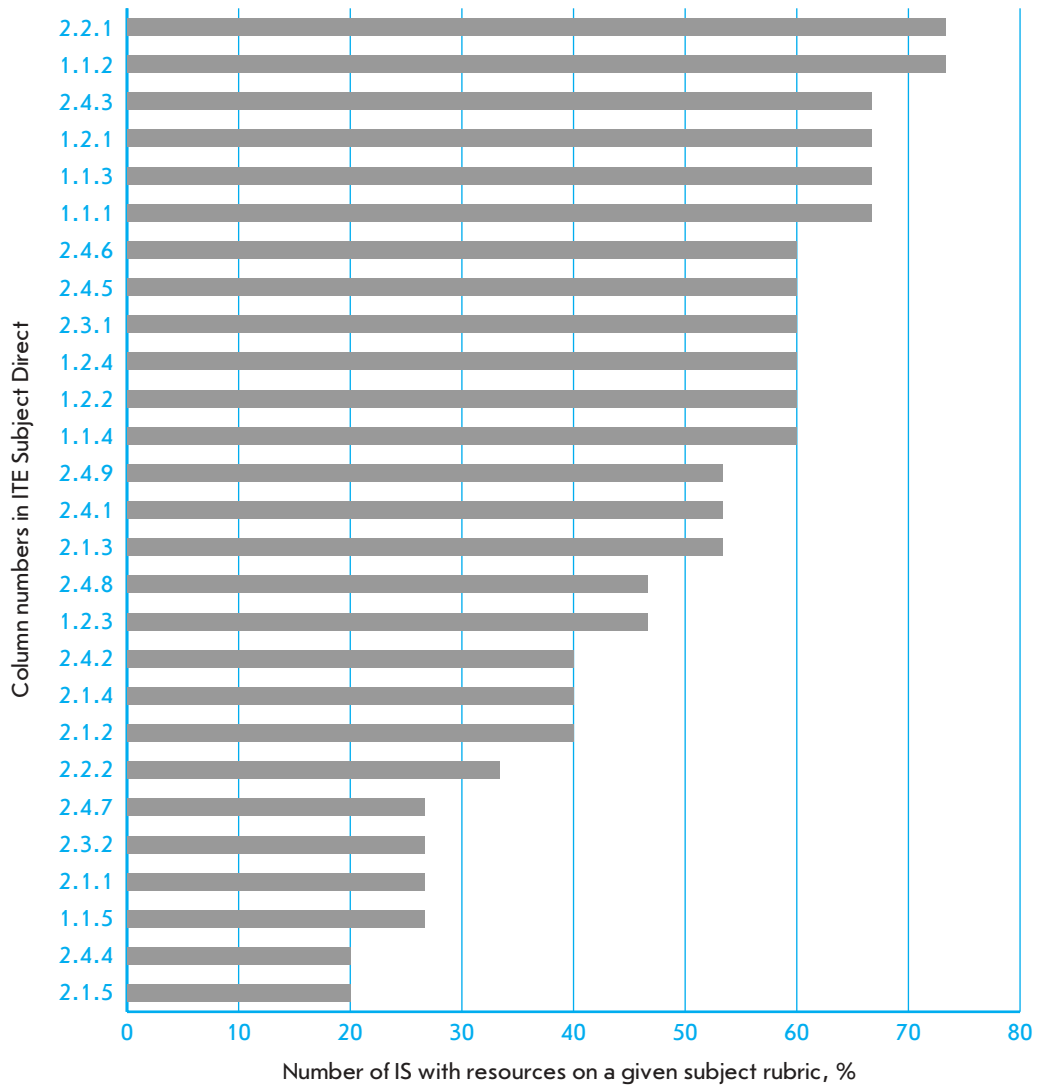


Figure 4.8

Subject Distribution of Information on Current State of ITE for Education Level 2

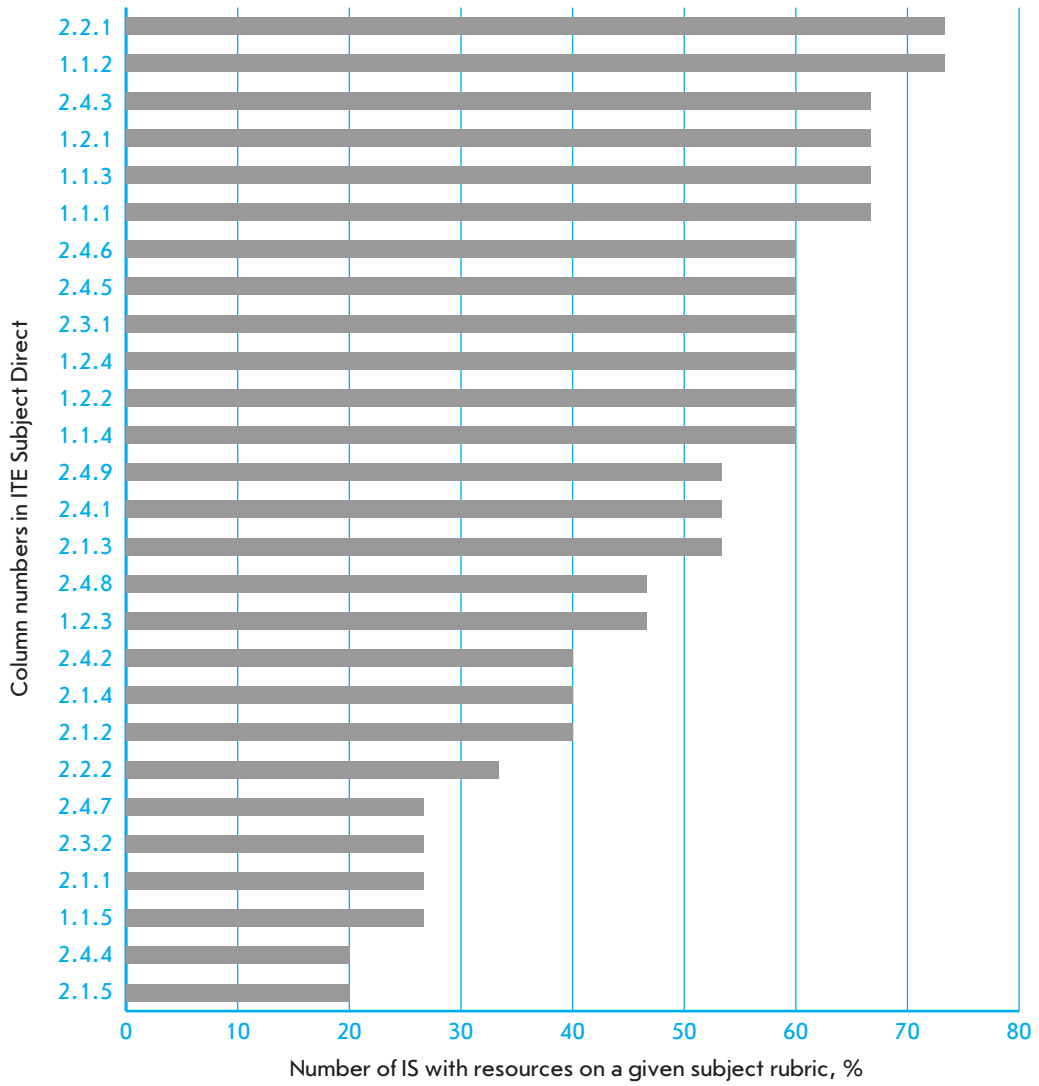


Figure 4.9

Subject Distribution of Information on Current State of ITE for Education Level 3

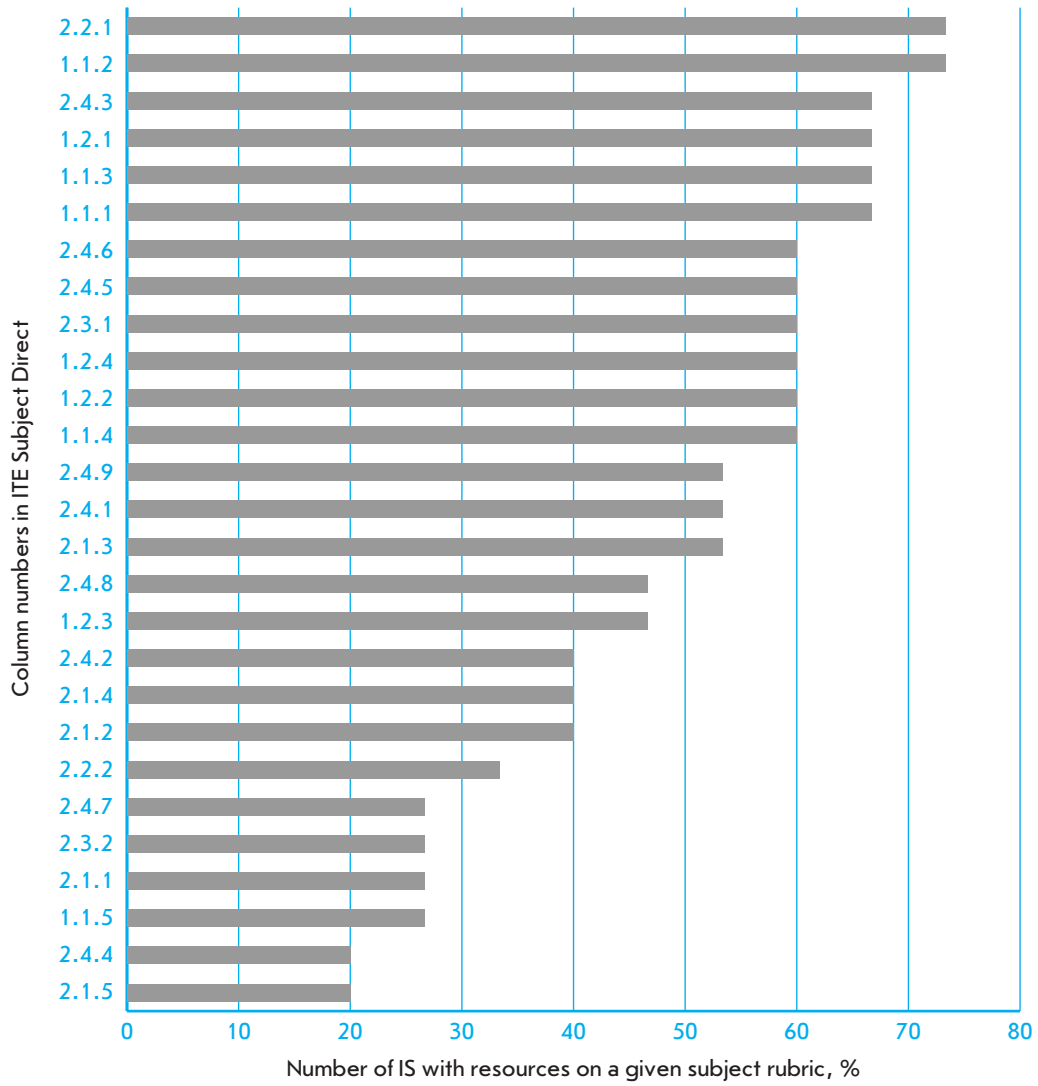


Figure 4.10

Subject Distribution of Information on Current State of ITE for Education Level 4

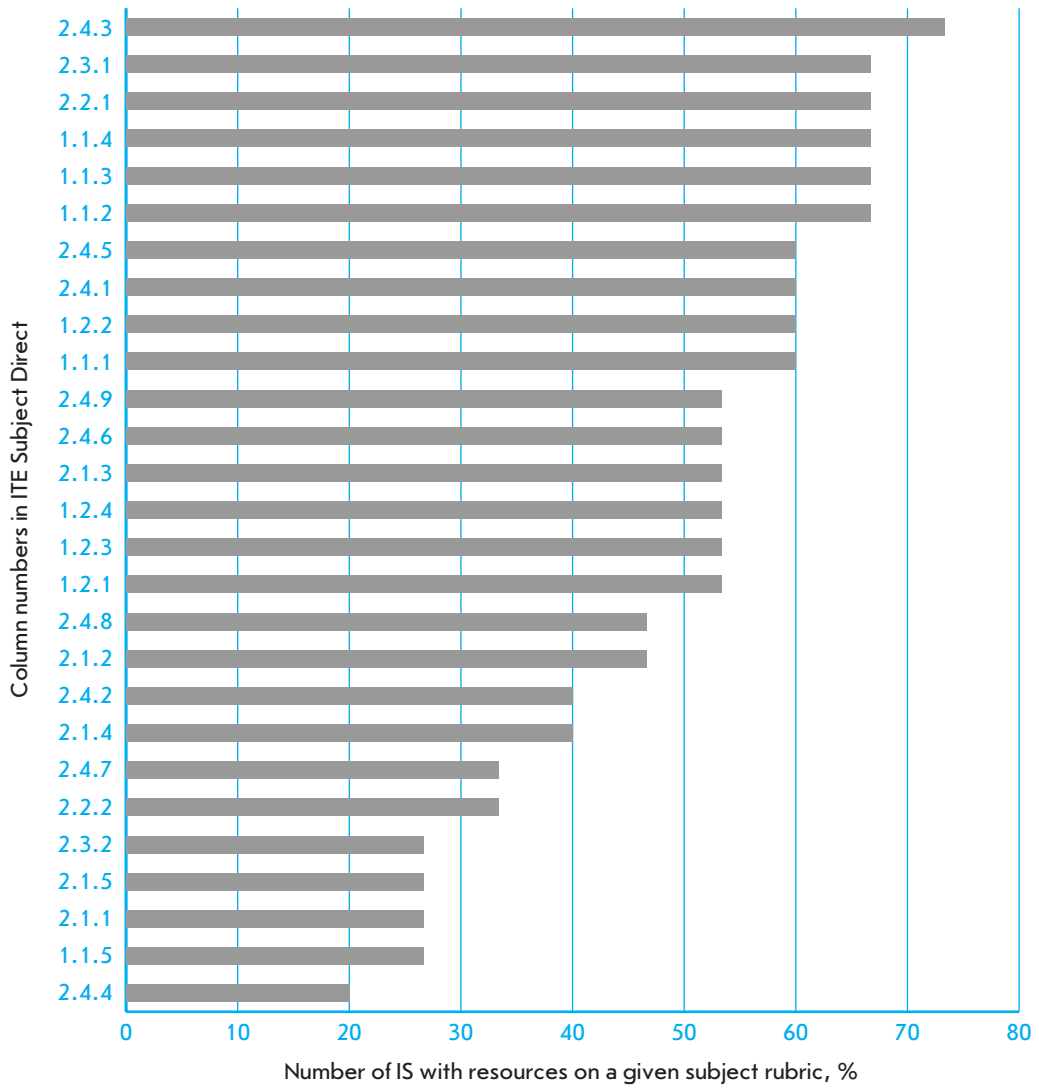


Figure 4.11



Subject Distribution of Information on Current State of ITE for Education Level 5

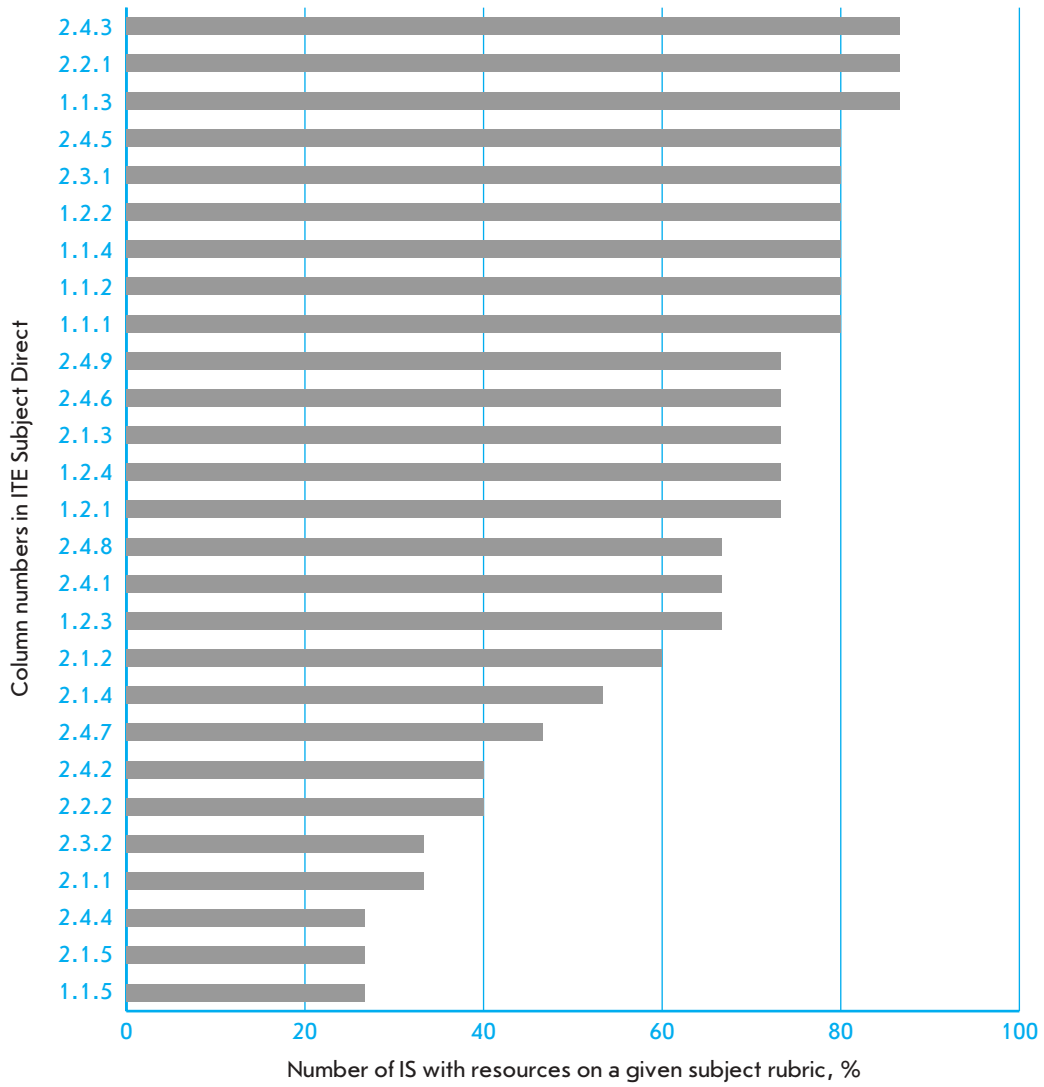


Figure 4.12

## Subject Distribution of Information on Current State of ITE for Education Level 6

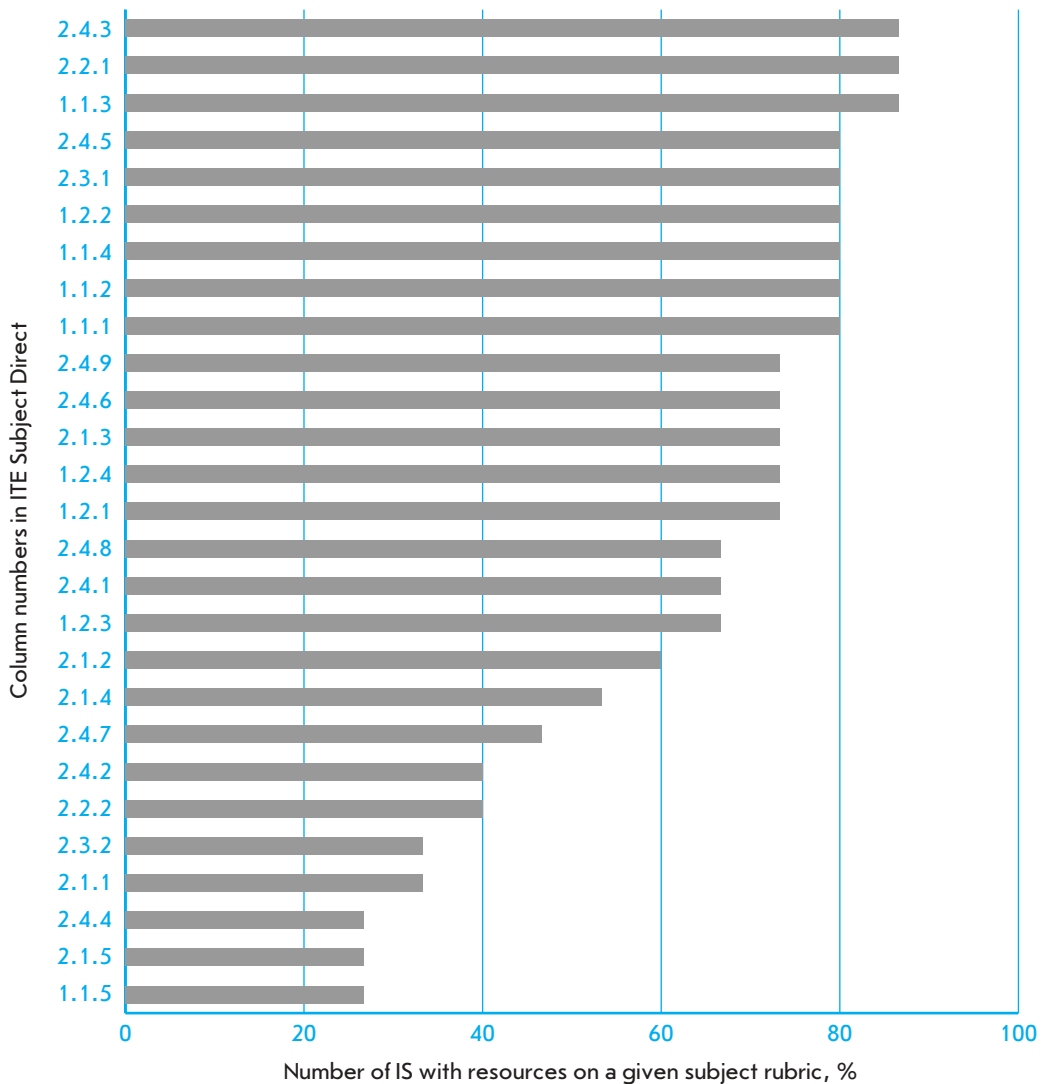


Figure 4.13

Analysis of the subject structure of information resources presented in major ITE IS in the aspect of 6 levels of education (ISCED 1997) has shown that maximum quantity and variety of IR falls on secondary, secondary professional, higher and further education. Fewer resources are presented for pre-primary and primary education. At the same time variations of IR supply for all education levels are insignificant.

For education levels 0-3 (pre-primary, primary and secondary education) there is relative prevalence of information on such subjects as ITE propagation in regions and educational institutions, methodical, analytical, program materials on experience and prospects of ITE in the learning process and for educational systems organization/management, ITE apparatus and usage telecommunications, scientific and informational activity in the field.

Relatively smaller coverage is given to ITE utilization methodology, statistical information, ITE economy and marketing, ITE-based curricula.

Level 4 (post-secondary non-tertiary education) is characterized by sufficient IR supply on ITE propagation, experience and prospects of using ITE in the learning process and for educational systems organization/management, educational IR and general and special purpose software. The least attention is paid to ITE economy and marketing, ITE utilization methodology, ITE-based curricula and ITE statistics.

Higher education (levels 5 and 6) compared to levels 0-3 are characterized by a higher number of IR on ITE research and administrative IR.

Relatively smaller coverage is given to ITE statistics, ITE utilization methodology, ITE legislation, norms and standards, global and national ITE policies, ITE economy and marketing, ITE-based curricula.

## 5. ANALYSIS OF THE MOST EFFECTIVE ITE INFORMATION SYSTEMS

To select possible prototypes for ITESNP IS preliminary selection and comparative analysis of the most effective ITE IS was conducted. ITE IS were selected by experts on the basis of major ITE IS description and analysis (pp. 2, 3) and analysis of their information resources (p. 4).

The list of selected ITE IS can be found in column "ITE IS Title" of Table 5.1.

### 5.1. Technical Specifications of the Most Effective ITE IS

Table 5.1  
Technical Specifications of the Most Effective ITE IS

#	ITE IS Title	Volume of Information			OS Used Software Used	Web Server Technology Used	Web Other	Usage of WWW Technologies
		HTML Pages	Database Entries	Downloaded Documents				
1	2	3	4	5	6	7	8	9
1.	Association for Media and Technology in Education in Canada	about 100	No	about 10	Unix	HTTP server (running Apache/1.3.3 (Unix) PHP/3.0.5)	HTML, no Javascript, frames or forms	No
2.	Association for the Advancement of Computing in Education	over 450	No	over 10	NT	HTTP server (running Microsoft-IIS/5.0)	HTML, ASP, Javascript, forms	No
3.	BECTa/ British Educational Communications and Technology agency	over 8000	No data available	over 150	No data available	No data available	JavaScript 1.2, Cold Fusion ASP	Shockwave Flash 4
4.	CALT (The Center for Advanced Learning Technologies)	over 13000	No	about 200	No data available	HTTP server (running Netscape-Enterprise/3.5.1C)	HTML/EN, forms, no frames, JavaScript, Java .pat	No
5.	Center de Technologie de l'Education	about 250	No	about 5	NT	HTTP server (running Microsoft-IIS/4.0)	HTML/EN no forms, frames, JavaScript	No
6.	CONICYT	1000	No data available	about 30	No data available	No data available	HTML, forms, no frames, Javascript1.2, Java	No
7.	Education World American Fidelity Assurance Company	1000	120000		Unix	HTTP server (running Apache/1.3.6 (Unix) ApacheJServ/1.0 mod_perl/1.19)	HTML/EN, Javascript, Java	No data available

1	2	3	4	5	6	7	8	9
8.	EDUCAUSE (Transforming Education Trough Information Technologies)	over 30000	over 1000	over 1500	NT	HTTP server (running Microsoft-IIS/4.0)	HTML, Javascript, forms and frames	No
9.	Educnet	about 650	No	about 40	Linux, UNIX	HTTP server (Apache/1.3.6 (Unix) (Red Hat/Linux))	HTML//EN, Javascript, Java	No
10.	ERIC Clearinghouse on Information & Technology	54000	over 4000	about 20	No data available	HTTP server (running Apache/1.2.6)	HTML 4.0, Javascript	No data available
11.	EvNet	2300	No	over 110	No data available	HTTP server (running NCSA/1.5.2)	HTML, Forms Javascript,	No
12.	GINIE	about 1000	No	about 300	No data available	HTTP server (running Netscape-Enterprise/3.0)	HTML, Javascript, Forms	No
13.	IBM Higher Education	about 500	No	about 30	No data available	HTTP server (running Domino-Go-Webserver/4.6.2.5)	HTML, forms	No data available
14.	Informika	over 70000	System of Databases	over 3200	Unix	HTTP server (running Apache/1.3.6 (Unix) mod_perl/1.21 rus/PL28.16)	HTML, Forms and frames	No
15.	La vitrine APO	over 600	85	0	No data available	HTTP Server (running WebSTAR NetCloak)	No data available	No data available
16.	Milken Exchange	about 6000	No	45	NT	HTTP Server (running Microsoft – IIS /4.0)	HTML 4.0, Javascript, Forms	
17.	NEA	over 5700	No	over 170	No data available	HTTP Server (running Netscape-Enterprise /3.6 SP2)	HTML 4.0, Javascript, Forms	No data available
18.	NODE	over 3000	About 60	0	No data available		HTML 4.0	No data available
19.	Office of Educational Technology	about 30000	No	about 3000	No data available	HTTP Server (running Netscape-Enterprise/3.5.1)	HTML 4.0	No data available
20.	National Co-ordination Team (NCT)	Over 800	150	Over 50	No data available	HTTP Server (running Netscape-Enterprise/3.5.1)	HTML 4.0, forms	No data available

## 5.2. Functionality and Organization of the Most Effective ITE IS

Tables 5.2 – 5.21 present a description of functionality and organization of the most effective ITE IS.

Table 5.2

### Functionality and Organization of the Most Effective ITE IS. Association for Media and Technology in Education in Canada

IS Description Parameters	IS Characteristics
Supporting Organization	Ministry of Education of Canada Camosun College
IS Objectives	- Informing on Programs, Occasions and Announcing Events in Education; - Providing Access to Information Resources
IR National-Geographic Characteristics	English, Canada
Time Scope Covered	no data available
Internal Navigation	Multiple Search Criteria
Resource Grouping by Levels of Education	No
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	No
Resource Grouping by User Category	No
Resource Grouping/Selection by Type	- email and mail bots - Usenet, regional and specialized teleconferences
Type of Access	free
Completeness of IR Access	IR titles lists
Interactivity (ability to be augmented or altered by the user)	Yes
Co-operation With Other IS	links to other IS
Information Collection	research monitoring
Information Sources	- individuals - organizations
Using an Institutional Network for Information Collection	no data available
Data Processing Methods	- expert evaluation - transformation
Information Actualization	archives
IS Diversification and Development	IS development stages
Financing	Camosun College, Dan Doherty and Mike Plante

Table 5.3  
 Functionality and Organization of the Most Effective ITE IS.  
 Association for the Advancement of Computing in Education

IS Description Parameters	IS Characteristics
Supporting Organization	Kurzweil Educational systems Smart technologies- Professional Educational Associations
IS Objectives	Informing on Programs, Occasions and Announcing Events in Education Advertising Educational Services Providing Access to Information Resources
IR National-Geographic Characteristics	English, USA
Time Scope Covered	1981-2000
Internal Navigation	Multiple Search Criteria
Resource Grouping by Levels of Education	no data available
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	no data available
Resource Grouping by User Category	no data available
Resource Grouping/Selection by Type	email Usenet, regional and specialized teleconferences Online User Communication Services World Wide Web Active information channels
Type of Access	Free
Completeness of IR Access	IR titles lists Full-text materials
Interactivity (ability to be augmented or altered by the user)	Yes
Co-operation With Other IS	links to other IS; joint projects
Information Collection	Administrative mechanism
Information Sources	Organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	- Verification - expert evaluation
Information Actualization	Outdated Information Purging (?)
IS Diversification and Development	Plans for the future
Financing	Kurzweil Educational Systems Smart Technologies- Professional Educational Associations

Table 5.4  
 Functionality and Organization of the Most Effective ITE IS.  
 BECTA (British Educational Technology Agency)

IS Description Parameters	IS Characteristics
Supporting Organization	Ministry of Education of Great Britain
IS Objectives	- Advertising and Selling Informational Products - Providing Access to IR
IR National-Geographic Characteristics	English, Great Britain
Time Scope Covered	No data available
Internal Navigation	- Multiple Search Criteria - Catalog
Resource Grouping by Levels of Education	Yes
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	Yes
Resource Grouping by User Category	Yes
Resource Grouping/Selection by Type	-email -WWW -Resource Catalogs -Search Engines -Newsletters -Teleconferences
Type of Access	-free -limited
Completeness of IR Access	Full-text materials with analytical commentary
Interactivity (ability to be augmented or altered by the user)	Yes
Co-operation with Other IS	- joint information service
Information Collection	- Administrative Mechanism
Information Sources	-individuals -organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	Expert evaluation
Information Actualization	-expert evaluation -transformation
IS Diversification and Development	-IS development stages
Financing	Ministry of Education of Great Britain

Table 5.5  
 Functionality and Organization of the Most Effective ITE IS.  
 CHEST (the Combined Higher Education Software Team)

IS Description Parameters	IS Characteristics
Supporting Organization	One of _duServ services at the University of Bath
IS Objectives	Supplying software, information, learning materials and other products related to information technologies in higher and further education.
IR National-Geographic Characteristics	English, Great Britain
Time Scope Covered	from 1988 till present day
Internal Navigation	Subject directory (catalog)
Resource Grouping by Levels of Education	Yes
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	Yes
Resource Grouping by User Category	Yes
Resource Grouping/Selection by Type	Email, Search Engines, WWW Resource Catalogs, Newsletters.
Type of Access	free
Completeness of IR Access	Annotated IR lists
Interactivity (ability to be augmented or altered by the user)	Yes
Co-operation With Other IS	links to other IS; joint information service
Information Collection	Administrative Mechanism
Information Sources	organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	expert evaluation
Information Actualization	Outdated Information Purging
IS Diversification and Development	Plans for the future
Financing	Department of Education and Employment, Higher Education Funding Council and Department of Education of Northern Ireland through the Joint Committee for Information Systems



Table 5.6  
 Functionality and Organization of the Most Effective ITE IS.  
 CALT (The center for advanced learning technologies)

IS Description Parameters	IS Characteristics
Supporting Organization	INSEAD- one of the world's most international business schools, an international leader in research creation and dissemination
IS Objectives	Informing on Programs, Occasions and Announcing Events in Education Advertising Educational Services Providing Access to Information Resources Informational support for decision making systems in education management
IR National-Geographic Characteristics	English, Europe
Time Scope Covered	no data available
Internal Navigation	Multiple Search Criteria
Resource Grouping by Levels of Education	no data available
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	no data available
Resource Grouping by User Category	no data available
Resource Grouping/Selection by Type	email and mail bots, Specialized teleconferences, people and organizations search systems, Usenet, regional and specialized teleconferences, Online User Communication Services
Type of Access	Free
Completeness of IR Access	IR titles lists, Full-text materials and demonstration models
Interactivity (ability to be augmented or altered by the user)	Yes
Co-operation With Other IS	Links to other IS; joint projects
Information Collection	Administrative mechanism, research monitoring
Information Sources	Organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	Verification, expert evaluation
Information Actualization	Archives
IS Diversification and Development	Plans for the future
Financing	Corporate Partners (e.g. The Reuters Foundation), Project Partners (e.g. McKinsey & Company), or Governmental Organizations (e.g. the European Commission).

Table 5.7  
 Functionality and Organization of the Most Effective ITE IS.  
 Centre de Technologies de l'Éducation

IS Description Parameters	IS Characteristics
Supporting Organization	Ministry of Education of Luxembourg
IS Objectives	Informing on Programs, Occasions and Announcing Events in Education Providing Access to Information Resources
IR National-Geographic Characteristics	French, Luxembourg
Time Scope Covered	no data available
Internal Navigation	Subject Directory (Catalog)
Resource Grouping by Levels of Education	Yes
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	no data available
Resource Grouping by User Category	no data available
Resource Grouping/Selection by Type	Usenet, regional and specialized teleconferences
Type of Access	Free
Completeness of IR Access	IR titles lists
Interactivity (ability to be augmented or altered by the user)	Yes
Co-operation With Other IS	links to other IS;
Information Collection	Administrative Mechanism
Information Sources	Organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	Verification Reviews
Information Actualization	Archives
IS Diversification and Development	IS development stages; Plans for the future
Financing	Ministry of Education of Luxembourg

Table 5.8  
 Functionality and Organization of the Most Effective ITE IS.  
 CONICYT

IS Description Parameters	IS Characteristics
Supporting Organization	National Committee for Scientific and Technical Research
IS Objectives	Informing on programs, events in science and technologies Providing Access to Information Resources
IR National-Geographic Characteristics	Spanish, Chile
Time Scope Covered	1982-2000
Internal Navigation	Catalog Multiple Search Criteria
Resource Grouping by Levels of Education	No
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	No
Resource Grouping by User Category	Yes
- Resource Grouping/Selection by Type	WWW Resource Catalogs Search Engines
Type of Access	Free
Completeness of IR Access	Full-text materials and demonstrational models
Interactivity (ability to be augmented or altered by the user)	No
Co-operation With Other IS	Links to other IS Joint projects
Information Collection	Research monitoring
Information Sources	Organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	Expert evaluation
Information Actualization	Archives
IS Diversification and Development	Stages of development Plans for the future
Financing	Program Financing - \$37 278 000 (1999) Administrative costs - \$39 138 000 (1999) Source - Ministry of Education

Table 5.9  
 Functionality and Organization of the Most Effective ITE IS.  
 Education World

IS Description Parameters	IS Characteristics
Supporting Organization	Professional educational organization Education World Inc.
IS Objectives	-Providing Access to Information Resources. -Advertising educational services -Announcing educational events
IR National-Geographic Characteristics	English, USA
Time Scope Covered	1997-2000
Internal Navigation	-Multiple Search Criteria -Catalog
Resource Grouping by Levels of Education	Yes
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	Yes
Resource Grouping by User Category	Yes
Resource Grouping/Selection by Type	-email -WWW -Resource Catalogs -Search Engines -Newsletters
Type of Access	free
Completeness of IR Access	Full-text materials and demonstration models
Interactivity (ability to be augmented or altered by the user)	Yes
Co-operation With Other IS	Links to other IS joint information service
Information Collection	research monitoring
Information Sources	Organizations Individuals
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	Expert evaluation
Information Actualization	-archives -Outdated Information Purging
IS Diversification and Development	IS development stages
Financing	American Fidelity Educational Services (AF)

Table 5.10  
 Functionality and Organization of the Most Effective ITE IS.  
 EDUCAUSE

IS Description Parameters	IS Characteristics
Supporting Organization	Professional educational association. EDUCAUSE
IS Objectives	Informing on programs, occasions, announcing educational events, providing access to information resources, informational support for decision making systems in education management, initiating public discussions, organizing Internet communities
IR National-Geographic Characteristics	English, USA
Time Scope Covered	1993-2000
Internal Navigation	Multiple Search Criteria Catalog
Resource Grouping by Levels of Education	No
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	No
Resource Grouping by User Category	No
Resource Grouping/Selection by Type	-email -WWW -Resource Catalogs -Teleconferences
Type of Access	- Paid - limited
Completeness of IR Access	Full-text materials with analytical commentary
Interactivity (ability to be augmented or altered by the user)	Yes
Co-operation With Other IS	Joint projects
Information Collection	Administrative Mechanism
Information Sources	individuals organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	Expert evaluation Transformation
Information Actualization	archives Outdated Information Purging
IS Diversification and Development	IS development stages Plans for the future
Financing	Microsoft Compaq

Table 5.11  
Functionality and Organization of the Most Effective ITE IS.  
Educne

IS Description Parameters	IS Characteristics
Supporting Organization	Governmental education bodies
IS Objectives	Informing on programs, occasions, announcing educational events, Providing Access to Information Resources, Informational support for decision making systems in education management, initiating public discussions, organizing Internet communities
IR National-Geographic Characteristics	French, France
Time Scope Covered	
Internal Navigation	Multilanguage search, Multiple Search Criteria, Subject Directory (Catalog)
Resource Grouping by Levels of Education	Yes
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	Yes
Resource Grouping by User Category	Yes
Resource Grouping/Selection by Type	email and mail bots, people and organizations search systems, Usenet, regional and specialized teleconferences, Online User Communication Services, FTP archives, global and regional FTP search, World Wide Web, global, local, specialized resource catalogs, Active information channels
Type of Access	free
Completeness of IR Access	IR titles lists, Full-text materials and demonstration models, Full-text materials with analytical commentary
Interactivity (ability to be augmented or altered by the user)	Yes
Co-operation With Other IS	links to other IS; joint information service, joint projects
Information Collection	Administrative Mechanism, research monitoring
Information Sources	organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	Verification, expert evaluation
Information Actualization	archives, Outdated Information Purging
IS Diversification and Development	Plans for the future
Financing	Companies (Société Alcatel, Société Apple Computer France, Groupe Bull , Camif, Société Compaq France, Société Digital, Société Hewlett-Packard France, Société IBM, Société Lotus Development France)- software development, hardware etc.

Table 5.12  
 Functionality and Organization of the Most Effective ITE IS.  
 ERIC Clearinghouse on Information & Technology

IS Description Parameters	IS Characteristics
Supporting Organization IS Objectives	University of Syracuse Providing Access to Information Resources.
IR National-Geographic Characteristics	English, USA
Time Scope Covered	1966-2000
Internal Navigation	-Multiple Search Criteria -Catalog
Resource Grouping by Levels of Education	Yes
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	Yes
Resource Grouping by User Category	Yes
Resource Grouping/Selection by Type	-email -WWW -Resource Catalogs -Search Engines -Newsletters
Type of Access	free
Completeness of IR Access	Full-text materials with analytical commentary
Interactivity (ability to be augmented or altered by the user)	Yes
Co-operation With Other IS	Links to other IS
Information Collection	Administrative Mechanism
Information Sources	Organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	Expert evaluation
Information Actualization	archives
IS Diversification and Development	IS development stages
Financing	US Department of Education, Education Research And Development Division

Table 5.13

Functionality and Organization of the Most Effective ITE IS.  
EvNet (Network for the Evaluation of Education and Training Technologies)

IS Description Parameters	IS Characteristics
Supporting Organization	MacMaster Institute of Hamilton, Ontario, Canada
IS Objectives	Developing new courses for InterNoa and traditional education systems, introducing new technologies in education
IR National-Geographic Characteristics	English, Canada
Time Scope Covered	from 1997 till now
Internal Navigation	Multiple Search Criteria Catalogs in some sections
Resource Grouping by Levels of Education	Yes
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	Yes
Resource Grouping by User Category	Yes
Resource Grouping/Selection by Type	email, Regional and specialized teleconferences Online user communication services People and Organizations search system WWW Resource Catalogs, Search Engines, Newsletters
Type of Access	free
Completeness of IR Access	Full-text materials with analytical commentary
Interactivity (ability to be augmented or altered by the user)	Yes
Co-operation With Other IS	links to other IS; joint information service, joint projects
Information Collection	Administrative Mechanism
Information Sources	individuals, organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	Verification
Information Actualization	archives
IS Diversification and Development	IS development stages; Plans for the future
Financing	\$ 3.25 million in donations from various organizations, \$1.25 from Social Science and Human Research Council under the Government of Canada.



Table 5.14  
 Functionality and Organization of the Most Effective ITE IS.  
 Global Information Networks in Education (GINIE)

IS Description Parameters	IS Characteristics
Supporting Organization	International Problems in Education Research Institute under the Educational School, University of Pittsburgh.
IS Objectives	Research and technical support of ITE implementation in developing countries
IR National-Geographic Characteristics	English, French, German, Spanish, Portuguese, Italian, USA
Time Scope Covered	from 1995 till present time
Internal Navigation	Multilanguage search, Catalog Multiple Search Criteria
Resource Grouping by Levels of Education	No
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	No
Resource Grouping by User Category	Yes
Resource Grouping/Selection by Type	Email, Teleconferences, online user communication services, people and organizations search systems, Newsletters, WWW
Type of Access	free
Completeness of IR Access	Full-text materials with analytical commentary
Interactivity (ability to be augmented or altered by the user)	Yes
Co-operation With Other IS	links to other IS, joint projects, joint information service.
Information Collection	Administrative Mechanism
Information Sources	Individuals, organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	Verification, reviewing, expert evaluation
Information Actualization	archives
IS Diversification and Development	IS development stages; Plans for the future
Financing	Large number of sponsor organizations includes the Bank of Asian Development, Soros Fund, UNICEF, UNESCO, World Bank, UN High Commissioner for Refugees, etc.

Table 5.15  
 Functionality and Organization of the Most Effective ITE IS.  
 IBM Higher Education – Global Campus

IS Description Parameters	IS Characteristics
Supporting Organization	IBM
IS Objectives	Providing educational information and resources Supporting ITE introduction
IR National-Geographic Characteristics	English, USA
Time Scope Covered	Not shown
Internal Navigation	Subject Directory (Catalog)
Resource Grouping by Levels of Education	No
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	No
Resource Grouping by User Category	Yes
Resource Grouping/Selection by Type	Email, people and organizations search systems, Newsletters, Resource Catalogs, WWW
Type of Access	free
Completeness of IR Access	Full-text materials with analytical commentary
Interactivity (ability to be augmented or altered by the user)	No
Co-operation With Other IS	links to other IS
Information Collection	Administrative Mechanism
Information Sources	organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	expert evaluation
Information Actualization	archives
IS Diversification and Development	Plans for the future
Financing	IBM

Table 5.16  
 Functionality and Organization of the Most Effective ITE IS.  
 Informika / State Research Institute for Information Technologies and Telecommunications

IS Description Parameters	IS Characteristics
Supporting Organization	Ministry of Education and Ministry of Science of the Russian Federation
IS Objectives	Complex support for ITE and telecommunications development and usage in Russian Federation
IR National-Geographic Characteristics	Russian, English, Russian Federation
Time Scope Covered	Not shown
Internal Navigation	Multilanguage search Multiple Search Criteria Subject Directory (Catalog)
Resource Grouping by Levels of Education	No
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	No
Resource Grouping by User Category	Yes
Resource Grouping/Selection by Type	Email, people and organizations search systems, Newsletters, Resource Catalogs, Teleconferences, WWW
Type of Access	free
Completeness of IR Access	Full-text materials with analytical commentary
Interactivity (ability to be augmented or altered by the user)	No
Co-operation With Other IS	links to other IS; joint information service; joint projects
Information Collection	Administrative Mechanism
Information Sources	organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	expert evaluation
Information Actualization	archives
IS Diversification and Development	Plans for the future
Financing	Ministry of Education and Ministry of Science of the Russian Federation

Table 5.17

Functionality and Organization of the Most Effective ITE IS.  
Milken Exchange

IS Description Parameters	IS Characteristics
Supporting Organization	Milken Exchange Foundation Professional Educational Association
IS Objectives	- Informing on Programs, Occasions and Announcing Events in Education - Providing Access to Information Resources - Informational support for decision making systems in education management
IR National-Geographic Characteristics	English, USA
Time Scope Covered	no data available
Internal Navigation	Catalog Multiple Search Criteria
Resource Grouping by Levels of Education	No
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	No
Resource Grouping by User Category	Yes
Resource Grouping/Selection by Type	World Wide Web Global, local, specialized resource catalogs on the Web Specialized teleconferences
Type of Access	Free
Completeness of IR Access	Full-text materials and demonstration models Full-text materials with analytical commentary
Interactivity (ability to be augmented or altered by the user)	No
Co-operation With Other IS	Joint projects
Information Collection	Administrative Mechanism
Information Sources	Organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	expert evaluation transformation
Information Actualization	Outdated Information Purging
IS Diversification and Development	Plans for the future IS development stages
Financing	no data available

Table 5.18  
 Functionality and Organization of the Most Effective ITE IS.  
 NEA (National Education Association)

IS Description Parameters	IS Characteristics
Supporting Organization	National Education Association Professional educational association
IS Objectives	- Informing on Programs, Occasions and Announcing Events in Education - Providing Access to Information Resources - Informational support for decision making systems in education management - Initiating public discussions, organizing Internet communities
IR National-Geographic Characteristics	English
Time Scope Covered	no data available
Internal Navigation	Catalog Multiple Search Criteria
Resource Grouping by Levels of Education	Yes
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	Yes
Resource Grouping by User Category	Yes
Resource Grouping/Selection by Type	WWW Resource Catalogs
Type of Access	Free
Completeness of IR Access	Full-text materials with analytical commentary Full-text materials and demonstration models
Interactivity (ability to be augmented or altered by the user)	Yes
Co-operation With Other IS	Links to other IS joint information service
Information Collection	research monitoring
Information Sources	Organizations Individuals
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	Expert evaluation
Information Actualization	Outdated Information Purging
IS Diversification and Development	Plans for the future
Financing	no data available

Table 5.19

Functionality and Organization of the Most Effective ITE IS.  
NODE Learning Technologies Network

IS Description Parameters	IS Characteristics
Supporting Organization	NODE Professional educational association
IS Objectives	- Informing on Programs, Occasions and Announcing Events in Education - Providing Access to Information Resources - Informational support for decision making systems in education management -Initiating public discussions, organizing Internet communities
IR National-Geographic Characteristics	English, Canada
Time Scope Covered	1998-2000
Internal Navigation	Catalog Multiple Search Criteria
Resource Grouping by Levels of Education	Yes
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	Yes
Resource Grouping by User Category	Yes
Resource Grouping/Selection by Type	WWW Resource Catalogs Specialized teleconferences email and mail bots
Type of Access	Free
Completeness of IR Access	Full-text materials with analytical commentary Full-text materials and demonstration models
Interactivity (ability to be augmented or altered by the user)	No
Co-operation With Other IS	Links to other IS joint projects
Information Collection	Administrative Mechanism
Information Sources	Organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	Expert evaluation Transformation
Information Actualization	Outdated Information Purging archives
IS Diversification and Development	Plans for the future

Table 5.20  
 Functionality and Organization of the Most Effective ITE IS.  
 Office of Educational Technology (US Department of Education)

IS Description Parameters	IS Characteristics
Supporting Organization	US Department of Education
IS Objectives	Informational support for decision making systems in education management
IR National-Geographic Characteristics	English, USA
Time Scope Covered	1994-2000
Internal Navigation	Catalog
Resource Grouping by Levels of Education	No
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	No
Resource Grouping by User Category	Yes
- Resource Grouping/Selection by Type	World Wide Web Global, local and specialized resource catalogs on the Web
Type of Access	Free
Completeness of IR Access	Full-text materials and demonstration models Full-text materials with analytical commentary
Interactivity (ability to be augmented or altered by the user)	No
Co-operation With Other IS	Joint projects
Information Collection	Administrative Mechanism
Information Sources	Organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	expert evaluation transformation
Information Actualization	Archives
IS Diversification and Development	Plans for the future
Financing	Ministry of Education USA

Table 5.21  
 Functionality and Organization of the Most Effective ITE IS.  
 Teaching and Learning Technology Program

IS Description Parameters	IS Characteristics
Supporting Organization	National Co-ordination Team (NCT), governmental educational organization
IS Objectives	Informational support for decision making systems in education management
IR National-Geographic Characteristics	English, Great Britain
Time Scope Covered	1997-2000
Internal Navigation	Catalog
Multiple Search Criteria	
Resource Grouping by Levels of Education	No
Resource Grouping by Levels of Education Inside of Grouping by User Category (and vice versa)	No
Resource Grouping by User Category	No
Resource Grouping/Selection by Type	WWW Resource Catalogs
Type of Access	Free
Completeness of IR Access	Full-text materials with analytical commentary
Interactivity (ability to be augmented or altered by the user)	No
Co-operation With Other IS	Joint projects
Information Collection	Administrative Mechanism
Information Sources	Organizations
Using an Institutional Network for Information Collection	Yes
Data Processing Methods	Expert evaluation Transformation
Information Actualization	Outdated Information Purging archives
IS Diversification and Development	Plans for the future
Financing	no data available



### 5.2.1 Organization, Objectives and Financing

As shown in Table 5.2, 10 ITE IS (50% of the most effective ITE IS) have been developed and are supported by governmental bodies and are financed out of budgetary funds. At the same time, sponsor funding is also used (e.g. for Educnet).

Some state-supported ITE IS (for example, ERIC) provide free access to summaries but charge a small fee for access to full-text documents which are also available by snail mail. Primary objective of ITE IS of his type is providing access to information resources and informational support of decision taking systems in education management. Much attention is also paid to informing on programs, occasions and announcing educational events.

6 ITE IS (30%) are supported by professional organizations, including international organizations. These systems are primarily financed by sponsor companies, allowing to provide free access to significant volume of information including research materials. Primary objectives of these IS are informing on programs, occasions and announcing educational events as well as initiating public discussions, organizing Internet communities.

3 ITE IS (15%) are maintained by special centers organized in major Universities. They are supported by governments, national and international public organizations. As a rule, these ITE IS provide full access to research materials. At the same time there is a significant number of paid resources (mainly study courses). Besides advertising educational resources, these ITE IS focus on providing access to information resources.

Finally, one of the most effective ITE IS (5%) is supported by the world's largest computer manufacturer IBM Corp. The informational website of the IS is integrated with an electronic store clearly manifesting the ITE IS objective.

### 5.2.2. Information Collection and Processing

Two thirds of ITE IS collect information with the help of what in this survey is called "administrative mechanism" when there are different forms of interaction (besides information exchange) between organizations that maintain the IS and information providers. This is typical for ITE IS supported by national ministries of education. In most cases information for IS is provided by organizations and not institutions. Moreover, the most developed IS form stable institutional information collection networks thus increasing cooperation with other institutions in various forms from link exchange to joint projects.

"Research monitoring" in this survey is defined as "external" studying of ITE objects without special organizational interaction. This method of information collection is used by one third of analyzed ITE IS (some ITE IS use both methods thus making total volume larger than 100%).

Most (80%) analyzed ITE IS do not limit themselves to verification of accumulated materials and building catalogs but also process the information. 70% of the materials are evaluated by experts and reviewed. Short summaries and analysis of the information resources are less frequent.

### 5.2.3 ITE IS Functionality

All the most effective ITE IS have highly sophisticated user interfaces. Each of them has a search engine, sometimes with very advanced features such as multi-language multi-criteria searches.

75% of the most effective ITE IS have the option of resource grouping by at least one parameter: education level, user category, education level within user category grouping and vice versa.

Most effective ITE IS not only provide resources of various types including email and mail bots, Usenet, regional and specialized teleconferences, newsletters, FTP archives, resource directories, active information channels but also allow users to group them according to their preferences.

## 6. GENERAL CONCLUSIONS

6.1 Developing an optimized procedure to search the Internet for information on ITE and related activity. Searching the Internet for information on ITE. Research has shown that ITE-related information can be more easily found through metasearch engines such as Profusion, Savvy Search, Fast Search than through general-purpose search engines and directories. But when specific information is searched even those systems with sophisticated relevancy evaluation algorithms overwhelm the user with a far too large number of links (searches done within this survey yielded over five hundred results). In such cases it is recommended to use specialized ITE information systems (an annotated list of 180 IS can be found in the Appendix)

6.2 An analysis of functional peculiarities, types of information resources and target audiences of the main ITE IS has indicated that:

6.2.1 Most of the 40 main ITE IS monitor ITE-related information resources on the Internet and store them within the IS. A smaller number of IS perform analytical or other information processing of the IR.

6.2.2 The majority of ITE-related IR concentrate on higher education although there are more and more IR that specialize in secondary education.

6.2.3 Specific requirements towards searches performed within this survey have predetermined a situation where most ITE IS referred to as "main" here target educators, methodologists and education administrators, i.e. serve as a means of professional communication.

6.2.4 Analysis has shown that basic IR types in ITE IS are hypertext, including internal and external links, and downloaded documents (usually .PDF or .DOC). On the one hand this indicates a progressive shift from providing text files only (as in GOPHER times). On the other hand, it proves that the educational Internet has not yet become a true hypermedia.

6.3 Analysis of IR subject structure in major ITE IS showed that major part of information presented in ITE IS deals with the current state of IT utilization in education. Only a small number of IR helps to evaluate the needs and prospects of the field. In general the best coverage is given to ITE propagation activity, use of computer and telecommunication training aids, distribution of information on experience and prospects of ITE both in the learning process and for educational systems organization/management. A significant number of educational and organizational information resources including general and special-purpose software are also presented in the major ITE IS.

Most IS provide information on ITE research and new ITE development. There is less IR that deal with global and national ITE policies, educational institutions that provide training in IT, staff training and retraining for ITE. Very little attention is paid to ITE legislation and norms, ITE economy, ITE-based curricula and ITE statistics.

6.3.1 At the same time in the aspect of "state" there is a significant number of materials on supporting activity such as ITE propagation in regions, ITE experience sharing, various educational and administrative IR.

6.3.2 In the aspect of "needs" information presented in the analyzed ITE IS shows definite demand for data on using computer-based training aids, new ITE development, new ITE support and maintenance, telecommunication technologies and general-purpose software.

6.3.3 In the aspect of "prospects" along with information on IT development prospects (particularly computer-based training aids and telecommunication technologies) in education, there is certain amount of information (quite small if compared to "state" aspect) on new ITE development and ITE propagation activity as well as global and national ITE policies.

6.4 As shown in Figures 4.4 – 4.6, the IR subject structure in the major ITE IS varies insignificantly depending on estimated target audience. With all the conventionality of expert evaluations used in this survey, this distribution shows that most major ITE IS are large multiple subject websites with information resources for all user categories.

6.4.1 The subject structure of information targeted at user category defined as "Administrators" is characterized by significant amount of data on the experience and prospects of ITE in educational systems organization/management, ITE propagation in regions and educational institutions, and informing on ITE.

6.4.2 For users category defined as "teachers, methodologists and course developers" there is relative prevalence of IR on the following subjects: experience and prospects of ITE in the learning process, educational IR, ITE research, new ITE development, informing on ITE. Less information is provided on ITE usage methodology, ITE legislation, standards and norms.

6.4.3 For "learners" category there are relatively more information resources on such subjects as general purpose informational courses (educational, testing, demonstrational, training), general purpose ITE software, ITE hardware, computer-based training aids for ITE, ITE telecommunications technologies, application packages and environment, general purpose software.

6.4.4 For all user categories, there is certain lack of resources on such subjects as global and national ITE policies, staff training and retraining for ITE, statistical data on ITE, economical aspects of ITE utilization, ITE-based curricula, ITE utilization methodology (documentation that regulates ITE usage according to pedagogical, didactical, ergonomic and health requirements).

6.5 Analysis of the subject structure of information resources presented in major ITE IS in the aspect of 6 levels of education (ISCED 1997) has shown that maximum quantity and variety of IR falls on secondary, secondary professional, higher and further education. Fewer resources are presented for pre At the same time variations of IR supply for all education levels are insignificant.

6.5.1 For education levels 0-3 ((pre-primary, primary and secondary education) there is relative prevalence of information on such subjects as ITE propagation in regions and educational institutions, methodical, analytical, program materials on experience and prospects of ITE in the learning process and for educational systems organization/management, ITE apparatus and usage telecommunications, scientific and informational activity in the field. Relatively smaller coverage is given to ITE utilization methodology, statistical information, ITE economy and marketing, ITE-based curricula.

6.5.2 Level 4 (post-secondary non-tertiary education) is characterized by sufficient IR supply on ITE propagation, experience and prospects of using ITE in the learning process and for educational systems organization/management, educational IR and general and special purpose software. The least attention is paid to ITE economy and marketing, ITE utilization methodology, ITE-based curricula and ITE statistics.

6.5.3 Higher education (levels 5 and 6) compared to levels 0-3 are characterized by a higher number of IR on ITE research and administrative IR. Relatively smaller coverage is given to ITE statistics, ITE utilization methodology, ITE legislation, norms and standards, global and national ITE policies, ITE economy and marketing, ITE-based curricula.

**6.6 Organization, Objectives And Financing:** 10 ITE IS (50% of the most effective ITE IS) have been developed and are supported by governmental bodies and are financed out of budgetary funds. At the same time, sponsor funding is also used (e.g. for Educnet). Some state-supported ITE IS (for example, ERIC) provide free access to summaries but charge a small fee for access to full-text documents which are also available by snail mail. Primary objective of ITE IS of his type is providing access to information resources and informational support of decision taking systems in education management. Much attention is also paid to informing on programs, occasions and announcing educational events.

Six ITE IS (30%) are supported by professional organizations, including international organizations. These systems are primarily financed by sponsor companies, which allows to provide free access to significant volumes of information including research materials. Primary objectives of these IS are informing on programs, occasions and announcing educational events as well as initiating public discussions, organizing Internet communities.

Three ITE IS (15%) are maintained by special centers organized in major Universities. They are supported by governments, national and international public organizations. As a rule, these ITE IS provide full access to research materials. At the same time there is a significant number of paid resources (mainly study courses). Besides advertising educational resources, these ITE IS focus on providing access to information resources.

Finally, one of the most effective ITE IS (5%) is supported by the world's largest computer manufacturer IBM Corp. The informational website of the IS is integrated with an electronic store clearly manifesting the ITE IS objective.

**6.7 Information Collection And Processing.** Two thirds of ITE IS collect information with the help of what in this survey is called "administrative mechanism" when there are different forms of interaction (besides information exchange) between organizations that maintain the IS and information providers. This is typical for ITE IS supported by national ministries of education. In most cases information for IS is provided by organizations and not institutions. Moreover, the most developed IS form stable institutional information collection networks thus increasing cooperation with other institutions in various forms from link exchange to joint projects.

"Research monitoring" in this survey is defined as "external" studying of ITE objects without special organizational interaction. This method of information collection is used by one third of analyzed ITE IS (some ITE IS use both methods thus making total volume larger than 100%).

Most (80%) analyzed ITE IS do not limit themselves to verification of accumulated materials and building catalogs but also process the information. 70% of the materials are evaluated by experts and reviewed. Short summaries and analysis of the information resources are less frequent.

**6.8 ITE IS Functionality.** All the most effective ITE IS have highly sophisticated user interfaces. Each of them has a search engine, sometimes with very advanced features such as multi-language multi-criteria searches. 75% of the most effective ITE IS have the option of resource grouping by at least one parameter: education level, user category, education level within user category grouping and vice versa. Most effective ITE IS not only provide resources of various types including email and mail bots, Usenet, regional and specialized teleconferences, newsletters, FTP archives, resource directories, active information channels but also allow users to group them according to their preferences.

## 7. RECOMMENDATIONS: ESTIMATION OF NECESSITY AND POSSIBILITIES FOR ITESNP IS DEVELOPMENT

Analysis of organization, functionality and technical specifications of existing ITE IS allowed:

- a) to state that in the modern Internet there is a clear gap between information resources of ITE IS in English-speaking countries and those of other countries;
- b) to say that it is expedient to develop under the aegis of UNESCO an information system specialized in organizing informational interaction between educational systems of different countries on issues defined by UNESCO priorities through the exchange of information on existing ITE IS and their information resources;
- c) to develop certain recommendations on defining system functionality and selection of existing ITE IS as possible prototypes for ITESNP IS.

### 7.1 ITE IS Capabilities in the Context of the UNESCO Institute for Information Technologies in Education Functions and Objectives

Goals of ITESNP IS development correlate with UNSECO primary functions.

7.1.1 To support perspective research in education ITESNP IS can accumulate information on tendencies and plans in new ITE utilization.

7.1.2 The collection, analysis, dissemination and exchange of information can also be supported by ITESNP IS as information source for research purposes, as

7.1.3 International Education Standards Development: ITESNP IS can serve as a database providing comparative analysis of national education standards as well as facilitate the distribution of such type of information.

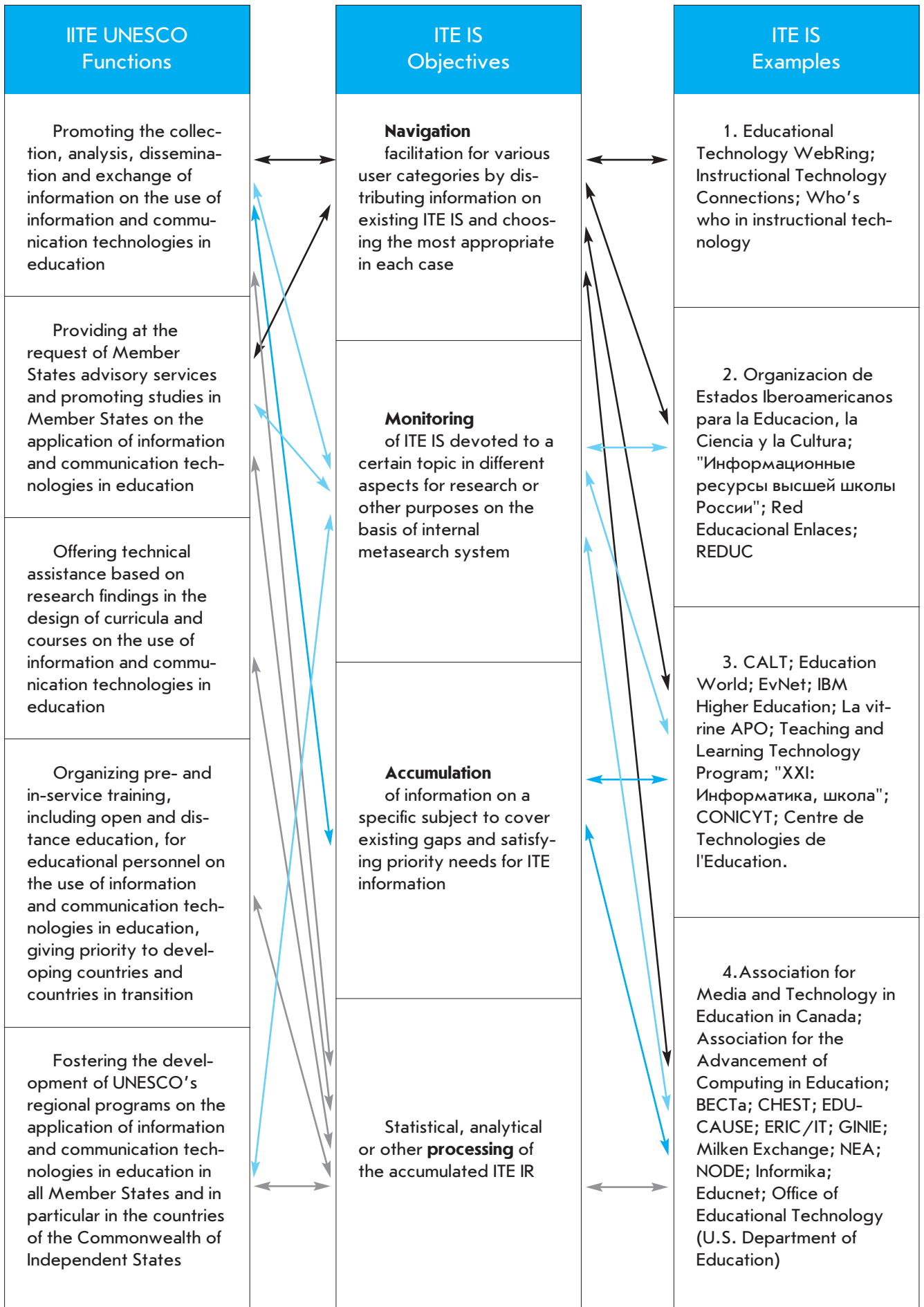
7.1.4 UNESCO expert activity in education can be supported by ITESNP IS through organized expert collaboration via the Internet.

7.1.5 Exchange of specialized information on issues of education is the immediate objective of ITESNP IS.

7.1.6 The primary scientific and informational function of ITESNP IS corresponds to one of UNESCO primary goals as stated in the Mandate for Educational Activity. Another goal that ITESNP IS can help to achieve is providing wider education possibilities to social groups, countries and regions that are now under discrimination (the poorest sections of population, youth, women and children, underdeveloped world regions). By providing educational services on the Internet ITESNP IS can assist in achieving UNESCO primary objective - "to contribute to peace and security by promoting collaboration among the nations through education, science and culture".

The correlation of the UNESCO Institute for Information Technologies in Education (UNESCO IITE) and objectives of the major ITE IS is shown in Figure 7.1.

Figure 7.1 UNESCO IITE Functions and Tasks Performed by Major ITE IS



According to the Statutes, the main purpose of UNSECO IITE is to contribute to the design and implementation of the program of Organization with regard to the application of information and communication technologies (ICTs) in education. UNESCO has determined IITE functions presented in the left column of Figure 7.1. The description of the major ITE IS allows to analyze the correlation of UNESCO IITE primary tasks and ITE IS objectives and match IITE aims with groups of ITE IS that perform similar tasks. The purpose of such grouping is to select functional prototypes for possible creation of ITE IS which will contribute to achieving UNESCO IITE goals.

As shown in Figure 7.1, ITE IS are most adequate to the IITE function of promoting the collection, analysis, dissemination and exchange of information on the use of information and communication technologies in education (this is proven by the full set of correlations shown in different colors).

Providing at the request of Member States advisory services and promoting studies in Member States on the application of information and communication technologies in education can be supported by three of four ITE IS primary functions.

There is less correlation between ITE IS objectives and IITE function of offering technical assistance based on research findings in the design of curricula and courses on the use of information and communication technologies in education. To support this function ITE IS should, as shown in Figure 7.1, perform information resources processing.

The analysis indicates that top (4th) level ITE IS are most appropriate to UNESCO IITE functions as the task of IR processing is crucial to IITE (shown in blue in Figure 7.1). However, IR processing is extremely resource consuming and can only be realized after data has been accumulated and processing methods have been developed and tested.

Fully functional ITE IS which can be viewed as potential prototypes for UNESCO ITE IS are shown in Cell 4 of the right column in Figure 7.1. The decision to select level 4 ITE IS as a prototype for UNESCO ITE IS should only be taken after analyzing other (technical, organizational and economical) aspects.

The next important ITE IS function in the context of UNESCO IITE functions is "information resources monitoring" (possible prototypes are shown in Cell 3 of the right column in Figure 7.1). As shown in Figure 7.1, this task is even more important for UNESCO IITE than IR accumulation which is the second most important function of ITE IS. Apparently this is explained by the international character of UNESCO activity which hampers the accumulation of all national ITE IR (like it is done, for instance, in the information system of Ministry of Education of the United States ERIC). This is why the task of IR accumulation is the least important in the context of UNESCO IITE activity, giving way to "Internet navigation".

In conclusion it is important to note that the number of systems shown in different cells of the right column in Figure 7.1 does not reflect actual proportions of ITE IS of different types on the Internet. The main criterion for IS selection as a "major ITE IS" was the ability to perform different functional tasks.

## 7.2 ITESNP IS Priorities

7.2.1 At the existence of many effective English-language ITE IS with sophisticated interfaces, advanced search engines and resource grouping capabilities the projected ITESNP IS should perform the function of Internet navigation facilitation by dissemination of information on the existing ITE IS and selecting the most appropriate in each case.

The results of multi-stage information collection on ITE IS and expert evaluations developed by an international expert network, if regularly updated, can significantly facilitate Internet navigation for different categories of users interested in ITE.

7.2.2 In the context of the research, the choice of ITESNP IS target audience is believed to be crucial. As proved by analysis, it is advisable to target ITESNP IS for users with education levels 3-5 (according to ISCED 1997) from countries and regions that do not have extensive experience of ITE utilization.

7.2.3 Moreover, research of ITE information needs of different user categories with ITESNP IS should become one of the primary goals of the projected IS.

7.2.4 At the next stage of development the ITE IS monitoring becomes a timely task. The monitoring should be organized according to the subject directory developed within this survey. IR priority configuration should be selected on the basis of user needs research. As a preliminary note it is worth to say that IR analysis of the major ITE IS indicates uneven subject distribution of information resources.

Because the research of ITE information needs is currently not financed and there is no data on needs for ITE information not satisfied by existing ITE IS a working hypothesis was accepted that the unsatisfied needs match minimal IR supply in different aspects.

Thus, according to expert evaluations, in the context of UNESCO IITE tasks information resources should first of all be selected and grouped on the following subjects (for all user categories and education levels):

- 1) The state, needs and prospects of global and national ITE policies;
- 2) The needs and prospects of pre- and in-service training for educational personnel on ITE utilization;
- 3) The state and needs of ITE legislation, standards and norms;
- 4) The state, needs and prospects of educational statistics on ITE utilization for educational systems organization/management in different countries and on different levels of education;
- 5) The state and needs of ITE economy and marketing.

7.2.5 The analysis shows that the function of IR accumulation and processing requires significant resources of various types and currently cannot be realized on a competitive level (except for resources developed in the framework of UNESCO). Thus development of level 4 ITE IS is only possible at later stages of IS building as more IR are accumulated, the needs of target audiences are defined and an institutional network for information collection and reviewing is developed. Besides, a full-scale international IS requires considerable investment.

### 7.3 ITESNP IS Primary Functional Requirements

7.3.1 According to declared ITESNP IS priority tasks it is advisable to maximally develop such IS features as various types of internal navigation and advanced capabilities for resource grouping (by education level, by user category, by resource type)

7.3.2 It is critical for the IS to have multilanguage interface (at least 4 languages) as well as to support different languages in the search engine and interactive forms.

7.3.3 It is considered optimal to provide free access to annotated lists (directories) of information resources.

7.3.4 To give users ability to supplement or alter ITESNP IS it is necessary to develop specialized mechanisms such as interactive forms etc.

7.3.5 Co-operation with other ITE IS should, according to goals set, become a major function of the IS.

7.3.6 An institutional network should be regarded as the most perspective way of information collection and dissemination for ITESNP IS. The network of partner organizations of UNESCO IITE may be used to verify, review and update ITE IR.

### 7.4 Possible Prototypes for ITESNP IS

7.4.1 CHEST, GINIE, Milken Exchange and NODE can be chosen as potential prototypes for ITESNP IS. These information systems have a set of features close to IITE functions. However, development of an IS of such scale is only possible in several stages along with IR accumulation, defining the needs of target audiences and organizing an institutional network for information collection and reviewing. Thus, realization of level 4 ITE IS (p. 7.1.6) is only possible at later stages of IS development. At earlier stages, it is advisable to develop and maintain an IS with the functions of Internet navigation facilitation and ITE IR monitoring.



## APPENDIX. ANNOTATED LIST OF EXISTING ITE IS (181)

### List of English Interface IS ITE (138)

1.	Academic Technologies for Learning (ATL)/ University of Alberta / <a href="http://www.atl.ualberta.ca/">www.atl.ualberta.ca /</a>	ATL provides training and consultation in instructional design, web and multimedia production, delivery, distance and distributed learning and evaluation to most effectively utilize learning technologies.
2.	Active Learning and Web Based Learning / <a href="http://ctl.augie.edu/educ/learn/wbl.htm">http://ctl.augie.edu/educ/learn/wbl.htm</a>	The catalog of articles, learning theories, strategies, examples, design and creation, evaluation of Active Learning and Web Based Learning.
	Advances in Education Technologies for Education <a href="http://www.insead.fr/Encyclopedia/Education/Advances/Technologies/">http://www.insead.fr/Encyclopedia/ /Education/Advances/Technologies/</a>	Annotated links catalogue, including following parts: Related pages General Information Forums, discussions, events, etc. Events, etc. Starting Points Journals, Magazines, etc. Articles, papers Centers Companies and Products Companies Virtual Classroom Technologies Technology for developing Pedagogical applications Campus Virtual Hosting Student Skill Management Projects
3.	ARIADNE / <a href="http://ariadne.unil.ch/main.htm">http://ariadne.unil.ch/main.htm</a>	Alliance of Remote Instructional Authoring and Distribution Networks for Europe. This (European) project focuses on the development of tools and methodologies for producing, managing and reusing computer-based pedagogical elements and telematics supported training curricula. Users involved: Authors of pedagogical documents: Faculty, Education Managers, Students; Producers & administrators of training courses: Trainers, Training Managers, Ped. Engineers; End Users: Researchers; Students, Trainees, Open & Distance Learners. Technologies and/or approach used: Share & reuse of pedagogical components through indexing and storage in knowledge pools; Use of adequate telematics channels according to situation; use of novel authoring & segmentation tools; Pedagogic components approach, structured curricula; individualized view of course.
4.	Asia-Pacific Cultural Center for UNESCO (ACCU) <a href="http://www.accu.or.jp/litdbase">http://www.accu.or.jp/litdbase</a>	In line with the principles of UNESCO, ACCU has been working for the promotion of mutual understanding and cultural co-operation among peoples in Asia and the Pacific, by implementing various programs in the fields of (1) literacy promotion, (2) culture, and (3) book development. Literacy Promotion Division specially co-developed the "Asia-Pacific Literacy Data Base" with UNESCO

5.	AskERIC Virtual Library <a href="http://ericir.syr.edu">http://ericir.syr.edu</a>	The AskERIC Virtual Library is an Internet site of selected resources for education and general interest. The selection of AskERIC as a Sun SITE gives AskERIC the resources to significantly expand the size and scope of the Virtual Library and to add sound, video, and multimedia resources. Some of the contents include: lesson plans, listserv archives, access to the ERIC database and Goals 2000 information
6.	Assistive Technology for Special Needs - LAB Resources <a href="http://www.execpc.com:80/~labres">http://www.execpc.com:80/~labres</a>	LAB Resources is a World-Wide-Web based Internet business specializing in assistive technology for special needs. Our goal is to offer the finest educational and therapeutic technology for both Macintosh and PC computers as well as training classes on the use of that technology.
7.	Association for Media and Technology in Education in Canada. <a href="http://www.amtec.ca/">http://www.amtec.ca/</a>	The site provides national leadership through annual conferences, publications, workshops, media festivals, and awards. AMTEC responds to media and technology issues at the international, national, provincial, and local levels. AMTEC also maintains linkages with other organizations with similar interest. The Association for Media and Technology in Education in Canada (AMTEC) is Canada's national association for educational media and technology professionals.
8.	Association for the Advancement of Computing in Education / <a href="http://www.aace.org/">http://www.aace.org/</a>	The purpose of AACE is advance of the knowledge, theory, and quality of learning and teaching at all levels with information technology. through the encouragement of scholarly inquiry related to information technology in education and the dissemination of research results and their applications through: Publications Conferences Divisions/Societies/Chapters Inter-Organizational Projects The Association is an international, educational, and professional organization dedicated to the advancement of the knowledge, theory, and quality of learning and teaching at all levels with information technology. AACE's membership includes researchers, developers, and practitioners in schools, colleges, and universities; and other specialists in education, industry, and the government with an interest in advancing knowledge and learning with information technology in education.
9.	Asynchronous Learning Networks (ALN) <a href="http://www.aln.org/alnweb/index.htm">www.aln.org/alnweb/index.htm</a> /	Asynchronous Learning Networks (ALN) are people networks for anytime - anywhere learning . ALN combines self-study with substantial, rapid, asynchronous interactivity with others. In ALN learners use computer and communications technologies to work with remote learning resources, including coaches and other learners, but without the requirement to be online at the same time. The most common ALN communication tool is the World Wide Web.

10.	<p>BECTa British Educational Communications and Technology agency www.becta.org.uk</p>	<p>Becta is a controlled executive NDPB serving the needs of the UK as a whole. It is a company limited by guarantee with charitable status. Becta's remit is to ensure that technology supports the DfEE's drive to raise educational standards, and in particular to provide the professional expertise the DfEE requires to support the future development of the National Grid for Learning. Becta Home Page Feedback Web Keeper Information Projects Resources CD-ROM Reviews Desktop Video Conferencing The Guide The Directory Case Study: English as a Second Language (ESOL) FE Resources for Learning (FERL) Lingu@NET On-line Bookshop Special Educational Needs SENCO Information Exchange. Web links Organizations Year 2000 in Education Support Providers</p>
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11.	<p>Bob Bowman's GUIDE TO FREE EDUCATIONAL TECHNOLOGY  <a href="http://www.user.shentel.net/rbowman/">http://www.user.shentel.net/rbowman/</a></p>	<p>The mission of this site is simple: To put free technological tools and free global resources directly in the hands of those who need them. We cannot have the highest expectations for our students and yet minimize their access to the requisite tools to build upon that potential. Online access can accelerate and selectively enhance the learning process. The members of the entire education community - and all life-long learners (K-12, special ed, ESL, homeschooled, gifted and talented, and college students as well as teachers, parents, and support personnel) are those to be served by this mission.</p> <p>The methodology of this site is to provide pre-screened, time-saving links to downloadable free educational software, tutorials, and other free resources by using the latest technology to transfer those items from archives throughout the world directly to the user's computer.</p> <p>A brief sampling of free educational resources include:</p> <ul style="list-style-type: none"> <li>Internet browsers to view/download global files</li> <li>Editors to write home pages &amp; online resumes</li> <li>Source code to help write own software programs</li> <li>Graphics to use in class presentations/reports                      Powerful spreadsheet and database programs</li> <li>Science/Foreign Language &amp; academic links</li> <li>University/college resources/databases</li> <li>Sound/music clips for multimedia projects                      Homework helper guides</li> <li>Online &amp; offline books</li> <li>Dictionaries/thesauruses</li> <li>Photographs/viewers</li> <li>Electronic mail programs</li> <li>Teleconferencing software</li> <li>Tech Support links</li> </ul>
12.	<p>CALT (The Center for Advanced Learning Technologies)  <a href="http://www.insead.fr/CALT">http://www.insead.fr/CALT</a></p>	<p>The Center for Advanced Learning Technologies (CALT) is increasingly regarded as Europe's leading R&amp;D initiative in the domain of advanced learning technologies for management education and knowledge management. The Center's projects and activities are financially supported by a number of external organizations, who are either Corporate Partners (e.g The Reuters Foundation), Project Partners (e.g. McKinsey &amp; Company), or Governmental Organisations (e.g. the European Commission). CALT's team consists of faculty members, research associates, and programmers, who carry out research projects, develop and test advanced learning tools, and disseminate the results by running dedicated MBA and Executive Programmes, publishing working papers and journal articles, participating in internal and external conferences, giving access to the advanced tools to INSEAD's faculty, and building CALT's presence on the World Wide Web.</p>
13.	<p>Canadian Association for Distance Education  <a href="http://www.cade-aced.ca/">http://www.cade-aced.ca/</a></p>	<p>The site is intended; to advance and promote distance education nationally; to promote research into distance education theory and practice; to provide membership services, including professional development; to provide a forum for interaction on a national, regional, provincial and local basis to represent Canada internationally in distance education; to promote access to learning at a distance.</p>
14.	<p>Center for Educational Leadership and Technology (CELT)  <a href="http://www.celt.org">http://www.celt.org</a></p>	<p>CELT is a non-profit educational research and service agency whose primary mission is to assist schools in integrating current education reforms and research with effective uses of technology. CELT's services and exemplary programs in technology planning, educational research, and professional development are employed by public school systems, private schools, educational consortia, private industry, and institutions of higher education nationwide.</p>

15.	Center for Instructional Technology (CIT) <a href="http://www.unc.edu/cit">http://www.unc.edu/cit</a>	The mission of the Center for Instructional Technology is to assist faculty, staff and graduate assistants in achieving their instructional, research and other professional objectives by providing support for commonly used and emerging technologies. The CIT works closely with the Faculty Instructional Technology Advisory Committee (FITAC) and support service providers to coordinate and promote campus-wide technology-related services.
16.	Center For Technology Innovations in Education <a href="http://www.ctie.missouri.edu/">http://www.ctie.missouri.edu/</a>	CTIE is a research and development center at the University of Missouri dedicated to the reform of teaching and learning methods at all education levels through the innovative application of technology. CTIE is home to a range of projects that promote the impactful application of technology in education. Innovation in CTIE involves technological, educational, cognitive, and social change to improve learning.
17.	Center for Curriculum, Transfer and Technology <a href="http://www.ctf.bc.ca/">http://www.ctf.bc.ca/</a>	The Center's role is that of a catalyst for change in post-secondary education in British Columbia, with an emphasis on promoting the learning outcomes approach and encouraging and supporting increased use of educational technologies.
18.	CHEST / CHEST / <a href="http://www.chest.ac.uk">www.chest.ac.uk</a>	The CHEST web site provides a single central source of information on educational pricing and availability of datasets, software, IT-based training materials and other IT-related products for the UK and Republic of Ireland.
19.	Chinese Educational Resources Information Center <a href="http://www1.fed.cuhk.edu.hk/en/">http://www1.fed.cuhk.edu.hk/en/</a>	One of the main objectives of our C-ERIC project is to use the American Educational Resources Information Center (ERIC) system as a reference to provide a bibliographic search of individual words of document resumes (citation abstracts) to users. The C-ERIC database does not provide a "full-text" searching. The full texts of C-ERIC documents are generally available from the C-ERIC journal articles. This project also aims to establish a free electronic database of educational studies in Chinese communities.
20.	CITAL - Computers in Teaching and Learning <a href="http://www.staffs.ac.uk/cital/welcome.html">http://www.staffs.ac.uk/cital/welcome.html</a>	This site is designed to cover everything related to the use of Communications and IT in the Teaching and Learning processes, and it is my goal to maintain a growing collection of information and sources.
21.	The Commonwealth of Learning <a href="http://www.col.org/">http://www.col.org/</a>	Founded in 1987 by Commonwealth Heads of Government at their meeting in Vancouver, Canada, The Commonwealth of Learning has a mandate to encourage the development and sharing of open learning/distance education materials, expertise and technologies, and other resources for learners throughout the Commonwealth and other countries. Responding to needs expressed by the Commonwealth's 54 member governments, it engages in both in-country and regional project work, as well as fee-for-service consulting for international agencies and national governments. COL has consolidated its operations under four key functions: communications technologies, materials, training, and information services. In support of these functional objectives, COL works under several modalities or operational strategies, including: networking, model building, facilitating, brokering and commissioning, in conjunction with general advocacy and acting as a catalyst for Commonwealth co-operation. All levels and sectors of education are assisted through developmental themes such as mixed-mode institutions, quality assurance and credit transfer, continuing education and professional/skills development, technical/vocational education and training, trade standards, teacher/instructor training, open schooling, education for all, the environment, and women-in-development. Geographical spread is an important consideration in program development.
22.	Community Learning Network WWW home page <a href="http://www.cln.org/cln.html">http://www.cln.org/cln.html</a>	CLN is designed to help K-12 teachers integrate technology into their classrooms. We have over 265 menu pages with more than 5,800 annotated links to free resources on educational WWW sites -- all organized within an intuitive structure. Since September of 1996, visitors from 165 different countries have made over 16 million hits on the CLN Web site.

23.	Computers in Teaching Initiative <a href="http://info.ox.ac.uk/cti/">http://info.ox.ac.uk/cti/</a>	This site enables you to contact one of the CTI Subject Centers (a number of which have been incorporated into the new Learning and Teaching Support Network), browse our online news archive for events, announcements and feature articles, read full-text articles from our journal Active Learning and other academic publications, or browse an annotated collection of resources to help you use technology effectively in your own work. The CTI (Computers in Teaching Initiative) comprised 24 subject-based Centers working to support the use of communication and information technologies in UK higher education. The CTI Support Service, based at Oxford University Computing Services which hosts this site, coordinated the work of the Centers and acted as a focal point for all CTI activities.
24.	Computers in the Classroom <a href="http://seamonkey.ed.asu.edu/emc300">http://seamonkey.ed.asu.edu/emc300</a>	This site provides helpful information on integrating technology into the classroom. The pages provide on-line instruction to using technology for management of classroom chores, as well as using technology for instruction.
25.	Consortium for Information Technology in Education (CITE) <a href="http://cite.telecampus.com/about.html">http://cite.telecampus.com/about.html</a>	CITE can manage any aspect of your educational training needs - from identifying funding sources to development, evaluation and follow-up of the final product
26.	Database of computer-based learning courseware <a href="http://wwwetb.nlm.nih.gov/">http://wwwetb.nlm.nih.gov/</a>	The CgSB(Cognitive Science Branch) is part of the Lister Hill National Center for Biomedical Communications (LHNCBC) at the National Library of Medicine (NLM). The Branch conducts research and development in computer and information technologies. Important research areas involve the investigation of a variety of techniques, including linguistic and knowledge-based methods, for improving access to complex biomedical information.
27.	Direct Hit /Reference/ Education/Technology <a href="http://www.directhit.com/cgi-bin/DirectHitWeb.fcgi?service=web&amp;type==drill&amp;fmt=html&amp;template=browse&amp;base=0&amp;catkey=Top/Reference/Education/Technology">http://www.directhit.com/cgi-bin/DirectHitWeb.fcgi?service=web&amp;type==drill&amp;fmt=html&amp;template=browse&amp;base=0&amp;catkey=Top/Reference/Education/Technology</a>	The directory contains links to sites and some subdirectories (Academic, K through 12) with the necessary information.
28.	Distance Education Clearinghouse <a href="http://www.uwex.edu/disted/home.html">http://www.uwex.edu/disted/home.html</a>	Sponsored by the University of Wisconsin-Extension, the Clearinghouse brings together information on distance education courses and technologies including instructional design, training the trainer, teleconferencing, audioconferencing, audiographics, compressed video, videoconferencing, and satellite.
29.	eCollege.com <a href="http://www.ecollege.com/">http://www.ecollege.com/</a>	eCollege.com, the world's leading provider of online learning technology and service solutions is looking for energetic, intelligent individuals to join our team. eCollege.com partners with academic institutions, educators and students to create, manage and market full-service campuses, course and degree programs over the Internet. If you are interested in an exciting career with an industry leader, come find out what we're all about eCollege.com is a provider of technology and services that enable colleges and universities to offer an online environment for distance and on-campus learning. Our software and services allow colleges and universities to outsource the creation, launch, management and support of an online education platform. Our technology and services consist of online campuses, courses, course supplements and support services, including design, development, management and hosting services, as well as ongoing administration, faculty and student support. We can create and deliver a complete online campus, including training of faculty and administration, typically in 60 business days. Our technology enables our customers to reach a large number of additional students who wish to take online courses at convenient times and locations. Our customers can also use our technology to supplement their on-campus courses with an online learning environment.

30.	EdCITE / <a href="http://www.ccnmtl.columbia.edu/resources/edcite/">http://www.ccnmtl.columbia.edu/resources/edcite/</a>	EdCITE is a database of research and case studies on the effective use of technology in education. The database includes citations to journal articles, Websites, and other relevant information resources selected to address the needs of faculty at Columbia University.
31.	Edex Internet (NETworking for Education) Internet Network Services Ltd. <a href="http://www.edex.net.uk">www.edex.net.uk</a>	The site covers the events, news in the educational system of Great Britain. The site contains the catalogue on educational resources (Curriculum , information on schools, colleges, universities and official government agencies)
32.	Ednovation / <a href="http://www.ednovation.com/">http://www.ednovation.com/</a>	Ednovation is one of Asia's leading educational technology provider for the school and multimedia producer for the home. It is composed of a group of dedicated professionals consisting of educators, teachers, writers, graphic artists, animators, software engineers, audio engineers, quality assurance engineers, field engineers and many others.
33.	Educast / Davidson & Associates / <a href="http://www.educast.com/html/cindex.html">www.educast.com/html/cindex.html</a>	The educational network designed for teachers and administration instantly providing the latest news of the network to the users who installed it at their computers. The services may be adapted to specific users.
34.	EDUCATION index CollegeView <a href="http://www.educationindex.com">www.educationindex.com</a>	Education Index, an annotated guide to the best education-related sites on the Web. They are sorted by subject and lifestage. Website Structure: Subject (Agriculture, Anthropology, etc.) Lifestage Prenatal and Infant Preschool Primary Education Middle Education Secondary Education College Education Distance Learning Graduate Education Continuing Education Parenting Careers Weasel World News
35.	Education Internet Guide: Sources for Theory, Practice, Teaching and Research <a href="http://www.library.usyd.edu.au/Guides/Education">http://www.library.usyd.edu.au/Guides/Education</a>	The Guide is intended for education administrators, policy makers, and researchers who need to know how to identify descriptive and statistical sources on education systems, their institutions, policies and programs, their human and financial resources, and the processes involved in their functioning. Features include: links to over 1,000 sites; all types of Internet resources; links to databases; searching tools for those beginning research on the Internet.

36.	<p>Education Supersite The Education Supersite <a href="http://www.petersons.com">http://www.petersons.com</a></p>	<p>The information-educational site designed for organization of the information on educational technologies for all educational levels, allows to perform search of the information necessary to the user in the databases of the system. Structure: Explore Colleges and Universities Pursue Graduate Programs Investigate Study Aboard Programs Find a Summer Camp, Program, or Job Select Private School Find a Job Search Executive Education Programs</p>
37.	<p>Education Technologies <a href="http://www.educationtechnologies.com/index.html">http://www.educationtechnologies.com/index.html</a></p>	<p>Education Technologies is a collaboration of professional educators with many years of experience in using technology for teaching and learning. We have served in a consulting role to individuals, school districts, regional education centers, and to state education agencies. Our strength is in developing online student-centered learning environments, training in the use of emerging technologies in the classroom, and developing curricula for teacher professional development. We are currently located in San Antonio, Austin, and El Paso Texas</p>
38.	<p>Educational Technology / Edtech Team Knowledgebase <a href="http://edtech.db.erau.edu/services/index.html">http://edtech.db.erau.edu/services/index.html</a></p>	<p>A searchable knowledge base containing article reviews and bibliography information from major Educational Technology Journals. The base will also contain archives of major EdTech list serve digests. Keep watching this spot for the link to become active.</p>
39.	<p>Educational Technology Review Center <a href="http://www.etr.c.usl.edu/default.htm">http://www.etr.c.usl.edu/default.htm</a></p>	<p>Educational Technology Review Center Web site serves as a research center and clearinghouse with on-line database on the topic. We provide an impetus for change in the educational community through access to state-of-the-art technology, in-service training, and implementation of technology into the curriculum.</p>
40.	<p>Educational Technology WebRing (EdTech) <a href="http://iml.umkc.edu/web-ring/edtech/">http://iml.umkc.edu/web-ring/edtech/</a></p>	<p>The Educational Technology WebRing (EdTech) is a collection of educational technology resource sites on the World Wide Web for Higher Education professionals. Each site is linked to the next. So no matter where you start, you will eventually be able to make your way around all the sites and end up back at the beginning. Only professional sites related to Higher Education will be linked (after a review of educational content). All educational resources and fields are invited to apply. If you have a site related to educational technology in Higher Education and would like to share it with the rest of the world... please submit your site. WebRing is the first, largest, and fastest-growing service of its kind on the Internet, providing one of the easiest ways for visitors to navigate the Web. In each of its tens of thousands of Rings, Member web sites have banded together to form their sites into linked circles. Their purpose: to allow more visitors to reach them quickly and easily. An extraordinary system servicing three primary World Wide Web groups: Visitors, Member sites and advertiser-merchants, WebRing remains entirely open and free of charge to both Visitors and Members. As a leading online navigation aid, WebRing is experiencing a growth rate of over 10% monthly. Daily page requests from visitors exceed 2,000,000; Member sites total over 1,300,000; Rings total over 80,000. The WebRing system can support a nearly unlimited number of separate and distinct Rings across the Internet. This unique structure allows the creation and evolution of tens of thousands of different "web communities." Each Ring was started and is maintained by an individual website owner, it's RingMaster.</p>



41.	<p>Education World  American Fidelity Assurance Company  www.education-world.com</p>	<p>The specialized system on the world educational resources, the system includes a database containing more than 100000 references to various information resources on education. The database is well structured and has quite powerful search system. One of its advantages is the availability of the help, as well as an opportunity for exact of the request (on age of the references, on an educational level of the user, Opportunity for a conclusion of the brief description of the system)</p> <p>The structure of the site:  Editorial  What's New This Week?  Lesson Planning  Curriculum  Books In Education  Administrators  Financial Planning  Education Site Reviews  Cool School of the Week  Search engine  Education Topic  Advanced Search  Education Employment Listings  Features  Education News  Headline News  World Resources Center  World School Directory  Education Events Calendar  Message Boards  Awards and Accolades  Support  Contact Us  Help</p>
42.	<p>Education-World: Internet Resources /  http://db.education-world.com/perl/  /browse?cat_id=414</p>	<p>Internet Resources(Associations and Organizations, BBC/Forum, Companies, Internet Safety/Issues, Keypal Programs, Newsgroups&amp;Listserv, Tresure Hunts, Web Quests&amp;Projects, Tutorials, Web Site, Development.</p>
43.	<p>EDUCAUSE (Transforming Education Trough  Information Technologies)  EDUCAUSE  www.educause.edu</p>	<p>Site related to the interests of higher education and information technologies. The structure of the site: cooperation with other educational systems. Reference information on conferences, seminars, institutes  Publications  Library of information Resources  Discussion groups of Information on cooperation  Employment</p>

44.	EDUTECH TECFA at the University of Geneva, Switzerland Faculty of Psychology and Educational Sciences (FPSE) agora.unige.ch/tecfa/edutech	The server of Geneva University. On-line resources for education system and educational technologies support. Includes links at educational servers, which are registered in own database.
45.	EdWeb Home Page http://edweb.chidr.org (non-commercial)	The system designed for search of on-line resources related to the problems of education, worldwide.
46.	Electronic Learning http://scholastic.com/EL/ http://teacher.scholastic.com/professional/ /teachtech/index.htm	Analysis and commentary on new technologies in education. Feature articles on the future of learning in the electronic age.
45.	Enhancing Learning & Teaching with Technology http://www.jtap.ac.uk/	<p>The JISC Technology Applications Programme (JTAP) is a highly focused programme aimed at assisting the HE community to get the best from its investment in IT.</p> <p>To achieve this it reports on best practice in the community, both within UK HE and on experiences beyond. This enables the community to learn from each other and avoid unnecessary duplication of effort in introducing, developing and exploiting systems.</p> <p>Secondly, JTAP funds projects which demonstrate the application of technology. This may be the application of novel technologies or applying existing techniques in new ways or in new areas. In this way we have been assisting UK HE to be in the vanguard of IT application so as to help maintain UK HE's worldwide competitive edge.</p> <p>Thirdly, JTAP has funded four clearing houses to actively inform the community in distinct areas:</p> <p>The use of IT to support staff and students with disabilities; and how by considering the needs of disabled users products and services are made more accessible for all users.</p> <p>The new IMS standard on educational software; this will ensure interoperability between educational objects at all levels 4 and so assist in the exploitation of educational material developed, and by being involved in its development we can ensure that it meets the needs of UK HE.</p> <p>The use of smartcards in HE.</p> <p>Videoconferencing</p> <p>JTAP has identified a number of critical areas where it has been concentrating its effort. These include:</p> <ul style="list-style-type: none"> <li>IT to support the management of HEIs</li> <li>Security</li> <li>Student Portable Computers (SPCs)</li> <li>Computer supported educational environments</li> <li>IT to support staff and students with disabilities</li> <li>HPC and Cluster Computing</li> <li>Standards</li> <li>Access to digital information</li> <li>Videoconferencing</li> </ul>

48.	ERIC Educational Resources Information Center <a href="http://ericae.net/">http://ericae.net/</a>	The ERIC®Clearinghouse on Assessment and Evaluation seeks to provide 1) balanced information concerning educational assessment and 2) resources to encourage responsible test use. Structure: Assessment, Evaluation, Statistics, & Educational Research Test Locator Assessment & Evaluation on the Internet Search and explore all assessment & eval sites ERIC & the American Educational Research Association K12ASSESS-L Listserv ERIC/AE On-Line Assessment Library Recent ERIC/AE briefing papers (Digests) How-to series Assessment and Testing in newspapers and magazines An Online, Interactive Computer Adaptive Testing Tutorial Educational Resources Information Center (ERIC®) Track papers submitted to ERIC/AE Search ERIC (RIE & CIJE) ERIC System Home page ERIC/AE Staff ( Figures) ERIC/AE Education Partners Program Directory of ERIC Resource Collections Submitting documents to ERIC and our Reproduction Release Form
49.	ERIC Clearinghouse on Information & Technology <a href="http://ericir.syr.edu/ithome/">http://ericir.syr.edu/ithome/</a>	ERIC/IT is one of 16 clearinghouses in the ERIC system. We specialize in library and information science and educational technology. ERIC/IT acquires, selects, catalogs, indexes, and abstracts documents and journal articles in these subject areas for input into the ERIC Database. Each year, ERIC/IT publishes Monographs, Digests, and Minibibliographies in the fields of educational technology and library and information science. Our semi-annual newsletter, ERIC/IT UpDate, announces new clearinghouse products and developments, and ERIC/IT Networkers provide helpful information for using ERIC-related resources on the Internet.
50	Evaluation of Learning Technology in Higher Education <a href="http://annick.stir.ac.uk/elthe/">http://annick.stir.ac.uk/elthe/</a>	Collection of useful links with a reference library
51.	Excite/ Education /Teacher Resources <a href="http://www.excite.com/education/">http://www.excite.com/education/</a> /teacher_resources/ Excite/ Computers & Internet <a href="http://www.excite.com/">http://www.excite.com/</a> /computers_and_internet/	The subdirectory Teacher Resources contains links to Classroom Technology and Professional Support/ Using Technology subdirectories where necessary information is found. The subdirectory Computers & Internet also contains links to information technology in education. (Software/ Education & Reference /Educational)

52.	ExplorAsource <a href="http://www.explorasource.com">http://www.explorasource.com</a>	ExplorAsource dynamically connects learning resources, education standards, and learning topics in a format that is quick and easy to use. For example, one type of search enables an educator to see how science learning topics match the New York Framework for Math, Science, and Technology. ExplorAsource references over 1000 educational resources.
53.	Federal Resources for Educational Excellence Educational Technology <a href="http://www.ed.gov/free/s-edtech.html">http://www.ed.gov/free/s-edtech.html</a>	Educational technology links, provided by U.S. Education Department FREE Website.
54.	From Now On The Educational Technology Journal <a href="http://www.fno.org/">http://www.fno.org/</a>	A monthly electronic technology newsletter which reaches more than fourteen thousand technology leaders, thinkers and teachers along with hundreds of library media specialists and industry figures monthly through e-mail along with tens of thousands of parents and others who visit the Web site daily.
55.	George Lucas Education Foundation <a href="http://glf.org/">http://glf.org/</a>	The George Lucas Educational Foundation promotes innovative efforts to improve education, to build support for transforming schools into places where learning is meaningful, challenging, and exciting, using a variety of communications media.
56.	Global Campus The Global Campus <a href="http://www.csulb.edu/gc/">www.csulb.edu/gc/</a>	The Global Campus is a collaborative multimedia database containing a variety of outstanding educational materials such as images, sounds, text, and video to be used for nonprofit, educational purposes. The goal of the project is to share resources through technology by providing a central "campus" where institutions may make their resources available on the World Wide Web. We provide easy access to high quality materials which can be used for instructional development worldwide, while respecting intellectual property rights.
57.	Global Information Networks in Education GINIE <a href="http://www.ginie.org/">http://www.ginie.org/</a>	<p>The objective of Global Information Networks in Education (GINIE) is to improve the quality of education in the countries currently facing the crisis or passing the transitive period for building of stable democracy, creation of progressive market economy and prevention of civil crises. GINIE use the Internet-technology, for organization of quick access to the information and expert knowledge for the professional workers of education working in the countries facing the crisis or transitive period.</p> <p>GINIE has developed, in participation with professionals in the field, an Internet-based network with the following capacities: web pages that with a click of a mouse, can provide rapid access to full-text documents that users can review, save to disk or print web pages that provide organized links to GINIE partner and associate sites, as well as other high quality links to content related to education in nations in crisis and at risk an on-line searchable database which focuses on documents and materials created by education professionals working internationally uploadable website-based document transfer protocols which allow field professionals to conveniently send their materials to the GINIE database on-line conferences on topics requested by field professionals designed around specific themes to encourage professional collaboration and contribution to the GINIE database secured websites that allow limited access to internal documents and dialogue for working groups GINIE's mailing list that acts as an on-going information distribution system for busy professionals customized technical support and training for GINIE partners interested in learning how to use these capacities more effectively.</p>
58.	Global Network Academy <a href="http://uu-gna.mit.edu:8001/uu-gna/index.html">http://uu-gna.mit.edu:8001/uu-gna/index.html</a>	GNA is incorporated as an educational non-profit organization in Texas, USA. Its mission is to assist you in all aspects of virtual and distance learning with its Online Distance Education Catalog, which currently lists more than 17,000 courses and programs.
59.	Globewide Network Academy <a href="http://www.gnacademy.org/">http://www.gnacademy.org/</a> The Globewide Network Academy	The Site contains a large catalogue on DE and reference information on books devoted to the DE questions. Includes information on the forum on systems of virtual reality with the built-in MOO programming language. The DE catalogue has quite powerful search system and is also well structured (inquiry may be performed on a header, authors of the course (project), languages, educational level (preschool, secondary etc.), in accordance with the form of presented information (on-line courses, programs, educational, scientific and research and methodical materials)), that simplifies the user's task on finding required information.

60.	HighReach Learning <a href="http://www.highreach.com">http://www.highreach.com</a>	HighReach Learning is committed to creating high-quality developmentally appropriate learning materials that allow teachers to easily facilitate a creative, integrated, hands-on learning experience for the whole child.
61.	HORIZON <a href="http://horizon.unc.edu/">http://horizon.unc.edu/</a>	Welcome to the HORIZON site. Our mission is to inform educators about the challenges that they will face in a changing world and steps they can take to meet these challenges. We strive to accomplish this mission by using the HORIZON site in conjunction with OTH On-Line (the on-line version of the print publication, On The Horizon), the HORIZON mailing list, seminars and workshops, conferences, and presentations to explore and extend our thinking as an educational community about the implications of a rapidly changing world and what we can do to make educational organizations and programs more effective in the future. Towards this goal, we open the discussion to the global community via the HORIZON mailing list and via the discussion forum in OTH On-Line, where subscribers to this version of On the Horizon review current and past issues of OTH, discuss them with each other and with OTH authors. We also provide a wealth of links in the Educational On-Ramp section to valuable Web data sources that provide historical data and informed discussion related to the future of education.
62.	Educational_Technology <a href="http://www.links2go.com/topic/Educational_Technology">http://www.links2go.com/topic/Educational_Technology</a>	Hierarchy list of Internet resources on the educational technology
63.	IBM Higher Education – Global Campus <a href="http://www.hied.ibm.com/index.html">http://www.hied.ibm.com/index.html</a>	The IBM Global Campus portfolio provides the information and resources to develop, deliver, and administer education through network delivered offerings: Universal Access Programs Flexible access to information resources Curriculum and Content Management Distributed learning over the Web Web Portal Solutions Web-based self services for students, faculty and staff Administrative System Implementation Streamlining and upgrading core administrative system Enablement and Support Infrastructure, process, transformation and training Research Deep computing solutions for University researchers
64.	IBM K-12 Education <a href="http://www.solutions.ibm.com/k12/">http://www.solutions.ibm.com/k12/</a>	The purpose of this site is to advertise, and document IBM K-12 instructional management and curriculum software. The site is divided into a number of major categories to help you easily find what you need.
65.	IEARN (International Education and Resource Network) Institute for Global Communications <a href="http://www.igc.apc.org/iearn">www.igc.apc.org/iearn</a>	The international project including educational institutions from 48 countries. Contains information on meetings and conferences, discussion groups, joint projects, database on projects, information on educational resources (article, student's publications, books, video etc.), Database on schools, members of the project.
66.	IEEE Education Home Page <a href="http://www.ieee.org/eab/">http://www.ieee.org/eab/</a>	Resources and information regarding electrical engineering education. Includes comprehensive list of EE programs at universities around the world, many self-study courses and tutorials, and information about maintaining technical vitality through continuing education.
67.	INFORMATION TECHNOLOGY IN EDUCATION <a href="http://vip.latnet.lv/ITedu/">http://vip.latnet.lv/ITedu/</a>	In-service Teacher Training System for Using IT in Education for Baltic States Baltic states workshop in Riga, In-service Teacher Training System for Using IT in education

68.	INFOMINE – Scholarly Internet Resource Collections / University of California / lib-www.ucr.edu	INFOMINE "is intended for the introduction and use of Internet/Web resources of relevance to faculty, students, and research staff at the university level. It is being offered as a comprehensive showcase, virtual library and reference tool containing highly useful Internet/Web resources.
69.	Institute for Learning Technologies / Columbia University / <a href="http://www.ilt.columbia.edu/">http://www.ilt.columbia.edu/</a>	Entering the 21st century, Americans embark on an era of historic change in which they are using new information technologies to renovate education and society for the betterment of humankind. The Institute for Learning Technologies seeks to help advance these changes by exerting educational leadership through innovative projects, seminal research, and enlightened counsel.
70.	Instructional Technology Connections <a href="http://www.cudenver.edu/~mryder/itcon.html">http://www.cudenver.edu/~mryder/itcon.html</a>	Annotated list of resources Theory & Philosophy in Education, Technology and Culture. Current Research about Learning and the Cognitive Sciences. On-line Journals in Education, Communications and Culture. Professional Organizations in Education and related fields. ListSers Active forums influencing educational directions. Resources, networks, schools and people. Distance Ed Approaches, resources and available courses. Teaching and Learning on the Internet local to virtual pedagogy. Performance Technology going beyond technical training. Organizational Learning and Knowledge Management Educational Resources Connections to curriculum content. Corollary sites A citation index of corollary Web sites. Index A raw directory listing of resources here.
71.	International Conferences on Technology and Education <a href="http://www.ictc.org/">http://www.ictc.org/</a>	The International Conference on Technology and Education (ICTE) convenes each year at a location in North America and a location in Europe. Typically, delegates from more than fifty nations attend the Conference each year, representing technology-using educators from a wide range of higher educational institutions, state departments of education, ministries of education, and school systems worldwide. The goal of the International Conference on Technology and Education is to provide an annual international forum to support and encourage the exchange of ideas and the sharing of information among those engaged in using technology in its various forms in the field of education.
72.	International Society for Technology in Education <a href="http://www.iste.org/">http://www.iste.org/</a>	The largest teacher-based, nonprofit organization in the field of educational technology which dedicates to help K–12 classroom teachers and administrators share effective methods for enhancing student learning through the use of new classroom technologies.
73.	Internet Education Group Internet Education Group, Inc. <a href="http://www.inet-edu.com">www.inet-edu.com</a>	Offers educational content aggregation, packaging and distribution services, all delivered within an Internet-safe environment. We provide the means for accessing high-quality information quickly, keeping students on task, and the flexibility to prohibit access to inappropriate content and unwanted solicitations. Internet Education Group fulfills parents' and educators' needs for educational values incorporated into the Internet related content and services their children use at school and home. Internet Education Group solves parents' and educators' concerns about the "openness" of the Internet and the content their children and students may access
74.	ITFORUM <a href="http://itech1.coe.uga.edu/ITForum/home.html">http://itech1.coe.uga.edu/ITForum/home.html</a>	ITForum is an electronic listserv where people from around the world discuss theories, research, new paradigms, and practices in the field of Instructional Technology. ITForum is sponsored by the Department of Instructional Technology at The University of Georgia. The list is open to anyone interested in instructional technology (a special invitation is extended to graduate students in IT programs).

<p>75. League for Innovation in the Community College  <a href="http://www.league.org/welcome.htm">http://www.league.org/welcome.htm</a></p>	<p>The League for Innovation in the Community College is the only major consortium in North America specifically committed to improving community colleges through innovation, experimentation, and institutional transformation. It serves nationally and internationally as a catalyst, project incubator, and experimental laboratory for community colleges around the world. The League is the leading community college organization in the application of information technology to improve teaching and learning, student services, and institutional management.</p> <p>Conferences &amp; Institutes</p> <ul style="list-style-type: none"> <li>Conference on Information Technology (C.I.T.)</li> <li>Innovations</li> <li>Executive Leadership Institute</li> <li>League Publications</li> <li>Online Bookstore</li> <li>Learning Abstracts</li> <li>Leadership Abstracts</li> <li>Keynote Addresses</li> <li>Catalyst</li> <li>Innovator</li> <li>Student Art Competition</li> </ul> <p>Student Lit Competition</p> <ul style="list-style-type: none"> <li>Technology &amp; Learning Community (TLC)</li> </ul> <p>Orientation Center</p> <ul style="list-style-type: none"> <li>Virtual Tour</li> <li>TLC Frequently Asked Questions</li> <li>TLC Membership</li> </ul> <p>Conference Center</p> <ul style="list-style-type: none"> <li>Conference on Info Technology</li> </ul> <p>Innovations</p> <ul style="list-style-type: none"> <li>Executive Leadership Institute</li> <li>Center for Model Campus-Based Programs &amp; Practices</li> <li>Campus-Based Programs</li> <li>National Initiatives</li> <li>Research &amp; Theory</li> <li>Submit Your Model Program</li> <li>Learning Resource Center</li> <li>Learning &amp; Teaching Resources</li> <li>Publications</li> <li>Discussion Forums</li> <li>Online Bookstore</li> <li>Partner Center</li> <li>Projects with Partners</li> <li>Partner Listing</li> <li>Becoming a Partner</li> </ul>
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		<ul style="list-style-type: none"> <li>Partner's Postings</li> <li>Public Information Center</li> <li>Press Releases</li> <li>What's New</li> <li>Other Links</li> <li>Contacts</li> <li>Projects</li> <li>Alliance +</li> <li>Network for MOUS Certification</li> <li>PLATO Research Project</li> <li>Microsoft/Compaq Advisory Council</li> <li>League Contacts</li> <li>Board of Directors</li> <li>League Representatives</li> <li>League Staff</li> <li>Resources on the Web</li> <li>Community &amp; Technical Colleges on the Web</li> <li>Higher Education Resources</li> </ul>
76.	<p>Learning Technologies Events  <a href="http://olt-bta.hrdc-drhc.gc.ca/conferdir.html">http://olt-bta.hrdc-drhc.gc.ca/conferdir.html</a></p>	These are extensive and the most relevant collections of upcoming conferences on learning technologies:
77.	<p>Learning Technology Dissemination Initiative  <a href="http://www.icbl.hw.ac.uk/ltdi/">http://www.icbl.hw.ac.uk/ltdi/</a></p>	The Learning Technology Dissemination Initiative was funded between 1994 and 1999 by the Scottish Higher Education Funding Council to promote the use of learning technology and computer based learning materials in Scottish Higher Education. The LTDI web site provide free access to the resources and publications that LTDI created.
78.	<p>Learning Technology Newsletter /  <a href="http://lttf.ieee.org/learn_tech/">http://lttf.ieee.org/learn_tech/</a></p>	The Learning Technology aims to report the activities of Learning Technology Task Force including various announcements, work in progress, projects, participation opportunities, additions/modifications to the website and so on.
79.	<p>Learning through Collaborative Visualization  <a href="http://www.covis.nwu.edu">http://www.covis.nwu.edu</a></p>	The Learning Through Collaborative Visualization (CoVis) Project is thousands of students, over a hundred of teachers, and dozens of researchers and scientists working to improve science education in middle and high schools by employing a broad range of communication and collaboration technologies.
80.	<p>Learning Web  <a href="http://www.learningweb.com.sg">http://www.learningweb.com.sg</a></p>	The site focuses on Asian, esp. Singaporean content in all aspects of education- products and services, institutions, continuous learning, Web/Online education.
81.	<p>LearntheNet  Michael Lerner Productions  <a href="http://www.learnthenet.com/english/main.htm">www.learnthenet.com/english/main.htm</a></p>	<p>As technology continues to transform the workplace, there is an increasing need for people to understand how to use it productively. Learn the Net focuses on delivering high quality electronic educational training products and services to the desktop via the Internet and intranets.</p> <p>Learn the Net.com, a Web-based tutorial for Internet novices and a continuing source of educational and technical assistance for all user.</p>



82.	<p>Make Me Smart  <a href="http://www.makemesmart.com/enter.htm">http://www.makemesmart.com/enter.htm</a></p>	<p>Make Me Smart™ is a suite of authoring tools, applications, and a delivery system for web based training or computer based training (CBT). It helps you...  to prepare intensely interactive multimedia tutorials over the Internet, for interactive delivery to students on the Internet, which present, exercise, and teach any content with: images, sounds, and text as well as test, report, and record student performance, retention, and knowledge. Our web-based tutor platform for web-based training, or CBT computer-based training in any subject, SCOTTSTM, is an interactive online multimedia tutorial:  encouraging discovery learning,  supporting distance learning,  with remote, online authoring,  including testing,  as well as performance reporting,  and record-keeping.</p>
83.	<p>MASIE Center  The Technology and Learning ThinkTank  <a href="http://www.masie.com/">http://www.masie.com/</a></p>	<p>The MASIE Center provides its services to major corporations and technology providers throughout the world. The Center provides research, perspectives, training, learning products and consulting on these key issues. The MASIE Center was formed to provide a clear-thinking leadership hub for the next generation of learning and technology solutions.  On-Line Learning - Learning Technology - Digital Collaboration - Web-Based Training - Virtual Classrooms - Learning Management - Knowledge Management - Skills for On-Line Training - Assessment - Learning Communities - Learning Portal Strategies - Digital Futures</p>
84.	<p>Milken Exchange  <a href="http://www.milkenexchange.org/">http://www.milkenexchange.org/</a></p>	<p>One of the biggest Internet resources for New Technologies in education. Provides information service and support at every level of education.  The Milken Exchange was formed in 1997 as part of the Milken Family Foundation's commitment to promoting responsible uses of education technology in schools. The Exchange is made up of a small staff with several ongoing initiatives aimed at helping states develop and implement educationally sound technology programs. This does not mean we want every child connected to a computer or that we count the number of hours each student spends on the Internet. Our goals are to enhance learning, and to bring resources that would not be possible without computers and other technology equipment. If more children can expand their horizons, accelerate their acquisition of information, and use computers as tools in working collaboratively with their peers, we feel we are doing our job. Many school districts have the best intentions for their technology, but struggle to afford access, teacher training, or interesting and effective lesson plans. The goal of the Milken Exchange is to help schools reach their own goals while continually assessing the impact of the technology upon their most important product, the students.</p>
85.	<p>M&amp;M Software  <a href="http://www.mm-soft.com">http://www.mm-soft.com</a></p>	<p>M&amp;M Software, a mail-order library of family-oriented, educational and game software, is an excellent resource for schoolteachers, home school associations and parents who want to use a computer as a creative teaching tool, or just for fun on those less-serious moments at the screen.  With products for Apple IIs, the Macintosh, DOS and Windows-based IBMs and compatibles</p>
86.	<p>Model Science Software  <a href="http://modelscience.com">http://modelscience.com</a></p>	<p>Develops simulation software for use in science education and research. Including: Model ChemLab - an interactive chemistry lab simulation for Windows and the Mac OS.</p>
87.	<p>Mr. Brown's Web Page for Students, Educators, &amp; Parents  <a href="http://pw1.netcom.com/~tbrown6/mrbrown.html">http://pw1.netcom.com/~tbrown6/mrbrown.html</a></p>	<p>A huge collection of links for over 40 educational disciplines. This page was created by a teacher for his 8th grade history and computer classes so that his students would have a safe but comprehensive area to explore and search.</p>

88.	National Center for Technology Planning/ <a href="http://www.nctp.com/">http://www.nctp.com/</a>	<p>The National Center for Technology Planning (NCTP) is a clearinghouse for the exchange of many types of information related to technology planning. This information may be: school district technology plans available for downloading via a computer network; technology planning aids (checklists, brochures, sample planning forms, PR announcement forms); and/or electronic monographs on timely, selected topics. Main goals of the NCTP are to: 1) collect; 2) disseminate; and 3) help.</p> <p>Collection occurs as school districts and other agencies around the world end their plans to NCTP to be added to the growing repository. Dissemination is accomplished by the NCTP's making many plans available electronically for downloading via the Internet, a worldwide computer network. Help is offered in the forms of consultancy, conducting workshops, and the distribution of printed matter (brochures, pamphlets, etc.) that deal with particular aspects of technology planning. NCTP materials represent the school/education arena mostly; however, we serve many more types of organizations. Examples are: business/industry; military; government; and public service.</p>
89.	National Co-ordination Team (NCT) Website <a href="http://www.ncteam.ac.uk/index.html">http://www.ncteam.ac.uk/index.html</a>	<p>Contains a huge range of different references and links to resources that have been drawn together by the NCT to support the FDTL and TLTP projects in their work. However, they may well be of interest to others working in learning and teaching in higher education.</p> <p>The NCT Information Service exists to provide higher education with easy access to information and copies of the materials and resources produced by FDTL and TLTP projects. Orders for projects' materials can be placed with the Information Service. In some cases, copies of the materials are held centrally and in others the order will be passed through to the project for processing and distributing.</p> <p>The NCT works on behalf of the Higher Education Funding Council for England (HEFCE) and the Department for Higher and Further Education, Training and Employment (DHFETE) to manage and co-ordinate two initiatives focused on encouraging innovation and new developments within learning and teaching.</p>
90.	National Educational Technology Standards (NETS) / International Society for Technology in Education (ISTE) / <a href="http://cnets.iste.org/">http://cnets.iste.org/</a>	<p>The primary goal of the ISTE National Educational Technology Standards (NETS) project is to enable stakeholders in PreK-12 education to develop national standards for the educational uses of technology that will facilitate school improvement in the United States.</p>
91.	NEA Teaching Learning and Technology NEA <a href="http://www.nea.org/cet/">http://www.nea.org/cet/</a>	<p>NEA is America's oldest and largest organization committed to advancing the cause of public education. Founded in 1857 in Philadelphia and now headquartered in Washington, D.C., NEA proudly claims over 2.3 million members who work at every level of education, from pre-school to university graduate programs. NEA has affiliates in every state as well as in over 13,000 local communities across the United States. At the national level, NEA's work ranges from coordinating innovative projects to restructuring how learning takes place to fighting congressional attempts to privatize public education. At the international level, NEA is linking educators around the world in an ongoing dialogue dedicated to making schools as effective as they can be.</p>

92.	<p>NetLearn: Resources for Learning the Internet  <a href="http://www.rgu.ac.uk/~sim/research/netlearn/callist.htm">http://www.rgu.ac.uk/~sim/research/netlearn/callist.htm</a></p>	<p>NetLearn is a directory of resources for learning and teaching Internet skills, including resources for WWW, email and other formats. Links with descriptive and evaluative annotations are provided, covering: learning, teaching, navigating and providing information on the Internet; learning HTML; demographics; special needs and foreign language resources. The list is classified as far as possible by medium and type, and by sections. Ordering by subject is not really appropriate, since the subjects are all essentially "Internet learning". While they might be divided into such areas as "navigation", "searching", "historical", "technical", "HTML" or "service provision" this is difficult due to the fact that many - or most - guides cover some or all of these aspects. Where there is confusion of objectives, resources have been included in both sections.</p> <p>Index</p> <p>1. Learning Resources: Main directory of resources for learning Internet skills. Divided into 4 sections:  Web based: WWW materials for learning the Internet: tutorials, documents and HTML materials  Email: resources available via email for learning about the Internet.  Downloadable: non-HTML/non-email programs, Powerpoint slideshows etc., which can be downloaded and studied offline.  Non-computer based materials, which you can find out about or order via the Internet.</p> <p>2. Teaching Resources: Materials with a particular relevance to those who want either to teach the Internet to others, or use it for teaching their subject. Links are, of course, not exclusive to educators - some may be equally useful for self-teaching.</p> <p>3. Special Resources: This is a section for resources of specialist interest:  Other languages: a range of resources for learning about the Internet in languages other than English. Includes links to different language browsers.  Visually impaired: resources for visually impaired users. Includes links to software.  Demographic &amp; current awareness: resources for Internet statistics and services for keeping informed about Internet development.</p> <p>4. Other Directories of Resources: Other lists and directories of Internet training materials, similar to this one.</p>
93.	<p>NetLeraning  (Why Teachers Use the Internet)  Songline Studios, Inc.  <a href="http://www.songline.com/teachers">www.songline.com/teachers</a></p>	<p>Online Resource Guide.</p> <p>The website contains articles, publications, online resources on using the Internet in education.</p>
94.	<p>NetTech Technology Coordinators' Resource Site  <a href="http://www.nettech.org/tc/">http://www.nettech.org/tc/</a></p>	<p>This site is designed by and for individuals who serve in the challenging task of coordinating technology initiatives in schools. Your title may be "Technology Specialist", "Technology Coordinator", "Instructional Technology Team Leader", "Educational Technology Resource Specialist".</p> <p>The goal of the site is simple: to help you in the many tasks you face in this ever-evolving job. Specifically, we hope the site will support you in your diverse roles, assist you in your daily work, and guide you in long term planning to facilitate the integration of appropriate technologies in the improvement of teaching and learning.</p>

95.	<p>EvNet (Network for the Evaluation of Education and Training technologies)  <a href="http://socserv2.mcmaster.ca/srnet/evnet.htm">http://socserv2.mcmaster.ca/srnet/evnet.htm</a></p>	<p>In some cases, education has become more costly and ineffective because of the improper use of computers in schools, colleges, universities, workplaces, and community organizations. EvNet (Network for the Evaluation of Education and Training Technologies) proposes to remedy this situation by evaluating the effectiveness of computer-mediated communications in the delivery of education and training. We provide evaluation services customized to the needs of education and training organizations. A partnership among 60 public, private, &amp; non-profit organizations. A \$4.3 million research consortium assessing instructional technologies in worksites, schools, colleges, and universities.</p> <p>1999 EvNet Conference          Create Your Own EdTech Bibliography          Evaluation Standards          ICT Evaluation          Technology for Teachers          Virtual Design Studios          Adaptech//          Slides: Computers, Education, Disabilities          Calculus on the Web          Distance Education</p>
96.	<p>New Horizons for Learning  <a href="http://www.newhorizons.org/">http://www.newhorizons.org/</a></p>	<p>New Horizons for Learning connects people to one another and to resources, serving the worldwide Internet community by offering an expanded view of teaching, learning, and developing intelligence more fully. Our activities include publishing materials, producing conferences, consulting, and collaborating on projects and programs.</p>
97.	<p>NODE          The NODE Learning Technologies Network  <a href="http://thenode.org/">http://thenode.org/</a>  <a href="http://node.on.ca">http://node.on.ca</a></p>	<p>Non-profit information network facilitating the cooperation and research in the field of technologies for postsecondary education and training.</p> <p>Structure:          CLIENT SERVICES          RESOURCES FOR PRACTITIONERS              technologies for learning:              tfl database              tfl topics              technology &amp; transformation              NODE Publications:              LTReport              networking              NODE forums              professional contacts              upcoming events          RESOURCES FOR LEARNERS:              reference shelf              virtual librarian              study buddy              technology toolkit              database of Ontario distance education courses              databases of distance education courses worldwide</p>

98.	NoteSys Home Page <a href="http://www.notebooksystems.com/">http://www.notebooksystems.com/</a>	The NoteSys, Inc. Web site. Provide a rich resource link database. NoteSys Inc. specializes in the implementation of technology in education, assists academic institutions in initiating, developing, rolling out and supporting a 1:1 student to computer ratio
99.	Office of Learning Technologies (OLT) Government of Canada <a href="http://olt-bta.hrhc-drhc.gc.ca/">http://olt-bta.hrhc-drhc.gc.ca/</a>	The Office of Learning Technologies (OLT) was established by the Federal Government within Human Resources Development Canada (HRDC), as a partner in building a culture of lifelong learning. Innovative Learning Site is a Office of Learning Technologies resource that delivers information related to the use of education technology in the learning process.
100.	On the Horizon <a href="http://sunsite.unc.edu/horizon">http://sunsite.unc.edu/horizon</a>	The purpose of The Technology Source is to provide thoughtful, illuminating articles that will assist educators as they face the challenge of integrating information technology tools into teaching and into managing educational organizations.
101.	Online Education and Training <a href="http://www.dmu.ac.uk/~pka/oet95.html">http://www.dmu.ac.uk/~pka/oet95.html</a>	Using the Internet for interactive courses is a fast-developing area. To keep up with the latest on courses, events, software, people and other resources, you could do worse than check out the Online Education and Training page maintained at De Montfort University
102.	Online Educational Resources / <a href="http://quest.arc.nasa.gov/OER/">http://quest.arc.nasa.gov/OER/</a>	The mission of the High Performance Computing and Communications program is to foster increased use of new computer and networking technologies to help support accelerated learning programs in education . These rough listings provide pointers to some online resources for students and educators, as well as to projects that address these goals.
103.	Online Internet Institute (OII) OII <a href="http://oii.org/">http://oii.org/</a>	The on-line Internet - institute originally designed for simplification of the teachers process of improvement of educational courses on the basis of advanced technologies in education. The system currently operates as versatile, based on the educational standards, assisting the teachers and learners in organization of educational process.
104.	Online Learning Environment <a href="http://www.geocities.com/Baja/8205/robotenter.htm">http://www.geocities.com/Baja/8205/robotenter.htm</a>	The Online Learning Environment is a site developed by Ed Schmidt of Putnam County School District for the purpose of using the Internet as part of his Technology/Engineering curriculum. It consists of Technological topics, sites to learn about the topics and Online Quizzes to be administered after the sites have been reviewed.
105.	International Center for Distance Learning <a href="http://www-icdl.open.ac.uk/">http://www-icdl.open.ac.uk/</a>	The International Center for Distance Learning (ICDL) is an international center for research, teaching, consultancy, information and publishing activities based in the Institute of Educational Technology which received world class rating in the 1992 and 1996 Higher Education Funding Council for England (HEFCE) Research Assessment Exercises. ICDL promotes international research and collaboration by providing information from its library and databases; other audiences are reached through publications. An essential knowledge resource built up over 15 years is its distance education library and databases. ICDL distance education databases contain information on over 31,000 distance learning programmes and courses mostly in the Commonwealth countries, over 1,000 institutions teaching at a distance worldwide, and over 11,000 abstracts of books, journal articles, research reports, conference papers, dissertations and other types of literature relating to all aspects of the theory and practice of distance education.
106.	Outreach and Technical Assistance Network (OTAN) <a href="http://www.otan.dni.us">http://www.otan.dni.us</a>	The Outreach and Technical Assistance Network (OTAN) is a California Department of Education, Adult Education Unit funded project designed to provide technical assistance, communication linkages, and information to adult education providers. OTAN Online provides electronic resources and an information gateway for the adult education and literacy practitioner.
107.	Pan-Educational Institute <a href="http://www.pei.edu">http://www.pei.edu</a>	Searchable database of over 500 lesson plans and other educational resources relating to K-12. PEI specializes in delivering training and educational opportunities that foster learning enrichment experienced through practical interaction .
108.	Scholastic – Teaching Technology <a href="http://teacher.scholastic.com/professional/teachtech/index.htm">http://teacher.scholastic.com/professional/teachtech/index.htm</a>	The division of Scholastic System web-site, providing on-line service on education technology topics for teachers, students and parents.

109.	<p>Selective Learning Network          Selective Learning Network, Inc  <a href="http://roswell.mra-inc.com/sln/">http://roswell.mra-inc.com/sln/</a></p>	<p>Training (tutor) network engaged in development and research of interactive electronic classes (Electronic Classrooms), on various subject domains. As well, the network contains references to various educational resources.</p> <p>Structure:          Contact SLN          About SLN          Message from the Founder          Announcements (Past&amp;Present)          Archived Classrooms          Electronic Classrooms          SLN Programs          Online Curriculum          Education Links</p>
110.	SOCRATES/ODL PROJECTS DATABASE	<p>This "Interactive Socrates/ODL Database" (ISOC) contains information on all projects supported by the ODL action of the Socrates programme 1995-1999. Products/outputs and Calendar events for dissemination of the outputs, are continually updated by the project coordinators, starting autumn 1999.</p>
111.	<p>Study WEB /          American Computer Resources, Inc./  <a href="http://www.studyweb.com">www.studyweb.com</a></p>	<p>The alphabetic catalogue of program and information resources in the field of education. The catalogue is classified for fields of knowledge.</p> <p>Structure:          Software Store          The Classroom Internet          Home Work Help Online          Meet Our Faculty</p>
112.	<p>SyllabusWeb /          Syllabus Press, Inc. /  <a href="http://www.syllabus.com/index.htm">www.syllabus.com/index.htm</a></p>	<p>The electronic version of the SyllabusWeb journal containing the information on technologies applied in higher education. Contains articles and publications on technologies of education. As well, the journal provides help information on forthcoming conferences. Includes an opportunity for registration of materials on use of technologies in education for participation in the above listed conferences.</p>
113.	<p>TALiSMAN  <a href="http://www.talisman.hw.ac.uk/">http://www.talisman.hw.ac.uk/</a></p>	<p>TALiSMAN Aims          to deliver high quality training to enable and promote the effective and efficient use of the Metropolitan Area Network (MAN) technology by the academic community in Scottish Higher Education, to enable Scottish Higher Education to apply and exploit the facilities of the MANs in teaching and learning and research. to enable and promote the integration of networking technology into teaching and learning.</p> <p>TALiSMAN will achieve these by:          providing a national training program targeted at an appropriate level,          demonstrating and applying appropriate network based teaching and learning methods, for example:          video conferencing,          computer conferencing,          interactive electronic materials.          developing and delivering network based learning resources and training materials,          providing paper based and electronic self-study materials on the use of MANs in teaching and learning,          providing an information bureau on network based learning and information resources,          providing a forum for discussion.</p>

114.	Technology Source <a href="http://horizon.unc.edu/TS/">http://horizon.unc.edu/TS/</a>	The purpose of The Technology Source is to provide thoughtful, illuminating articles that will assist educators as they face the challenge of integrating information technology tools into teaching and into managing educational organizations.
115.	T.H.E. Journal Online / <a href="http://www.thejournal.com/">http://www.thejournal.com/</a>	Technological Horizons in Education is a source for exploring the news on the world of computers & related technologies, focusing on applications that improve teaching & learning for all ages.
116.	Teacherzone teacherzone.com incorporated. <a href="http://www.teacherzone.com">www.teacherzone.com</a>	Web site contains news and information on educational resources for teachers. The structure of the site: News and comments Basis of knowledge (software in the Internet, resources for school web-masters, employment offers, conference) Examples of on-line classes and specialized systems on educational resources.
117.	Teaching and Learning Technology Program (TLTP) <a href="http://www.ncteam.ac.uk/tltp/">http://www.ncteam.ac.uk/tltp/</a>	These projects covered a wide range of subject disciplines and produced materials for learning and teaching comprising interactive software and supporting documentation. The materials are presented in a variety of different ways and include some of the following: Tutorial replacement materials; Case studies; Databases and datasets; Simulations; Microworlds; Revision and self study materials; Assessment. A catalogue of the materials available from the Program can be obtained from the National Co-ordination Team. TLTP was launched in 1992 by the Universities Funding Council (UFC) and then continued by its four successor funding bodies in 1993, the Higher Education Funding Council for England (HEFCE), the Scottish Higher Education Funding Council (SHEFC), the Higher Education Funding Council for Wales (HEFCW) and the Department for Education Northern Ireland (DENI). The Programme was launched to encourage the higher education sector to work collaboratively and explore how new technologies could be exploited to improve and maintain quality within teaching and learning.
118.	Teaching and Learning with Technology <a href="http://www.stjohns.edu/library/~staugustine/technology.html">http://www.stjohns.edu/library/~staugustine/technology.html</a>	Collection of Internet links
119.	Teaching with Electronic Technology University of Maryland <a href="http://www.wam.umd.edu/~mlhall/teaching.html">www.wam.umd.edu/~mlhall/teaching.html</a>	The site provides information about conferences, publications, and general discussions of teaching with electronic technology.
120.	tech Learning <a href="http://www.techlearning.com/">http://www.techlearning.com/</a>	Ideas, tools, and resources for integrating technology into the K-12 school, classroom and curriculum.
121.	TechKnowlogia/ <a href="http://www.techknowlogia.org/">http://www.techknowlogia.org/</a>	International Online Journal of Technologies for the Advancement of Knowledge and Learning, published by Knowledge Enterprise, Inc., in collaboration with UNESCO, OECD, and GIIIC.
122.	Technologies for Education / <a href="http://www.insead.fr/Encyclopedia/Education/Advances/Technologies/">http://www.insead.fr/Encyclopedia/Education/Advances/Technologies/</a>	The catalog of events, journals, magazines, articles, papers, etc. For Technologies of Education.
123.	TeleLearning Network of Centers of Excellence (TL – NCA) <a href="http://www.telelearn.ca/">www.telelearn.ca/</a>	An organization whose "mission is to research, develop, and demonstrate the learning models, methods, technologies, and social practices which will enable telelearning - the use of networked computer environments and tools for education and training - to support the development of a knowledge economy and learning society in Canada"

124. The Learning Development Center CITAL <a href="http://www.staffs.ac.uk/services/ldc/">http://www.staffs.ac.uk/services/ldc/</a>	This site is designed to cover everything related to the use of Communications and IT in the Teaching and Learning processes, and its goal to maintain a growing collection of information and sources. CBL in General On-line Journals CAL Software Computer-Mediated Communication The COSE Virtual Learning Environment IT Skills Multimedia Distance Learning Collaborative & Cooperative Learning Using WWW for Learning & Teaching Subject-Oriented Information and Discussion Lists Pedagogy & Theory Other Useful Sources K-12 Disability Uncategorised Links Tools for Research on the Web
125. The Maricopa Center for Learning and Instruction (MCLI) <a href="http://www.mcli.dist.maricopa.edu/">http://www.mcli.dist.maricopa.edu/</a>	A comprehensive list of resources, environment for continuous learning; experimentation; and systemic, professional, and personal change. MCLI represents a comprehensive and collaborative model for educational leadership, learning innovation, and institutional transformation.
126. Theories and Researches on IT in Education / <a href="http://www.hkace.org.hk/res-theory.htm">http://www.hkace.org.hk/res-theory.htm</a>	The catalog of Researches on IT in Education(Apple Classrooms of Tomorrow (ACOT), Chinese Educational Resources Information Center, etc.) and Theories(Active Learning and Web Based Learning Constructivism Web Literature on Constructivism Computers - Constructionism – Constructivism, etc.)
127. U.S. Department of Education Office of Educational Technology <a href="http://www.ed.gov/Technology/">http://www.ed.gov/Technology/</a>	The Office of Educational Technology (OET) encourages and leads education improvement efforts by helping educators, congressional leaders, and administrators utilize available resources to reshape instruction, teaching, and learning environments. OET plays an integral role in expanding and improving access to technology and serves as a catalyst in bringing effective uses of education technology into classrooms across the nation
128. UNESCO Bridgetown Office <a href="http://www.unesco.org/general/eng/about/office/external/carneid">http://www.unesco.org/general/eng/about/office/external/carneid</a>	The main mission of UNESCO Bridgetown is to co-operate with Caribbean Member States of the Organization in the planning and delivery of support service in the area of educational innovation and change. A key mechanism for the attainment of these objectives is the Caribbean Network of Educational Innovation for Development (CARNEID). The Office facilitates the exchange of information and provides consultative services on CARNEID experiences, particularly the innovations developed by this Network.
129. UNESCO New Dehli Office <a href="http://unescoelhi.nic.in/unescoelhi/comm.htm">http://unescoelhi.nic.in/unescoelhi/comm.htm</a>	UNESCO's program in Communication, Information and Informatics is geared to developing communication infrastructures and human resources principally but not exclusively in developing countries; and to the freedom of expression, freedom of the press, and the independence and pluralism of the media. UNESCO also harnesses informatics for development and strengthens Member States' capacity in this field.



130.	Using Technology in Education <a href="http://www.algonquinc.on.ca/edtech/index.html">http://www.algonquinc.on.ca/edtech/index.html</a>	Annotated Catalogue of resources Using Technology in Education Finding Information on the Web Educational Technology Connections Learning HTML Multimedia Authoring Distance Education Online Learning
131.	VIRTUAL REALITY IN EDUCATION Education and Moo, Mud, Mush <a href="http://www.skally.net/eduvr/">http://www.skally.net/eduvr/</a>	MUD = Multi-User Domains MOOs = MUD Object Oriented MUSHs = Multi-User Shared Hallucination MOOs, MUDS and MUSHES are internet accessible, text mediated virtual environments well suited for distance teaching and learning.
132.	Web Impact on Teachers and Pedagogy / <a href="http://www.pitt.edu/~rmvega/PAPERS/intro_R&amp;P.html">http://www.pitt.edu/~rmvega/PAPERS/intro_R&amp;P.html</a>	A summary of papers and research by Rodolfo Vega on the impact of the Web on pedagogy and teachers' education (current research and papers).
133.	Well Connected Educator The Well Connected Educator <a href="http://www.gsh.org/wce/choice.htm">http://www.gsh.org/wce/choice.htm</a>	On-line center of publications and forums designed for support K-12. Allows to publish materials, search required information conducting discussion on educational technologies.
134.	Wellspring/ The Wellspring (online community of distance education) Collaborative project from Instructional System Inc. And members of the Teacher College, Columbia University <a href="http://www.wellspring.isinj.com/home.html">www.wellspring.isinj.com/home.html</a>	The site is designed to give coverage of DE novelties. Contains references to articles, forums, publication, database on on-line courses.
135.	Western Interstate Commission for Higher Education <a href="http://www.wiche.edu/">http://www.wiche.edu/</a>	The Western Interstate Commission for Higher Education is a regional organization created by the Western Regional Education Compact, adopted in the 1950s by western states. WICHE is an interstate compact created by formal legislative action of the states and the U.S. Congress. Fifteen states are members of WICHE. WICHE was created to facilitate resource sharing among the higher education systems of the western states. It has implemented a number of regional activities to accomplish its objectives. The WICHE Web site contains a lot of useful resources in educational technology area, especially in policy/planning field.
136.	WHO'S WHO IN INSTRUCTIONAL TECHNOLOGY <a href="http://hagar.up.ac.za/catts/learner/m1g1/whointro.html">http://hagar.up.ac.za/catts/learner/m1g1/whointro.html</a>	International gallery of experts from the world of Instructional / Educational Technology and its related fields
137.	Yahoo / Education/ Instructional Technology <a href="http://dir.yahoo.com/Education/Instructional_Technology/">http://dir.yahoo.com/Education/Instructional_Technology/</a>	The subdirectory Instructional Technology contains links to Web Directories, Software Reviews, Journals, Conferences and to sites which concern Information Technology.

## List of Russian Interface IS ITE (8)

1.	"Information Technologies in Education" International Conference and Exhibition <a href="http://ito.bitpro.ru/">http://ito.bitpro.ru/</a>	The website publishes materials of the «Information Technologies in Education» conferences held by UNESCO IITE in 1995-1999. The reports are grouped in the following sections: Section I. Information Science: Standards and Contents Section II. IT Integration in Education Section III. Open Education Technologies Section IV. Information Technologies in Educational Structures Management Section V. Information Technologies in Education for People With Special Needs
2.	INFORMATION TECHNOLOGIES in Kharkov <a href="http://raix.kharkov.ua/Russian/Technology/index.html">http://raix.kharkov.ua/Russian/Technology/index.html</a>	Information resources on topics: Information technologies: analytical market overviews, telecommunications, computer technologies, software; architecture, art, culture, history, science, education, economy, society.
3.	Informika / State Research Institute for Information Technologies and Telecommunications/ <a href="http://www.informika.ru">http://www.informika.ru</a>	Information server of the State Research Institute for Information Technologies and Telecommunications. Designed to provide information on educational institutions, standards, conferences etc. Main information resources available at <a href="http://www.informika.ru">http://www.informika.ru</a> : Information of Ministry of Education of Russian Federation (structure, rulings, instructions, scientific and technical programs, education standards, addresses, phone numbers, directories); Objects of SRIITT Informika (structures, reports of the advisory panel, presentations of regional IT centers, concepts of ITE development in Russia etc.); Databases (Legislation of Russian Federation, higher education establishments, schools, colleges, scientific councils, computer-based information resources etc.); Distance Education; Conferences, exhibitions, seminars (presentations, outlines, schedules); Grants, funds, contests; Newspapers and magazines on IT and education; Information technologies; IT certification; Distributed search engine for freeware scientific and educational programs; Open Systems Center; DialogScience antivirus software; Y2K problem; Publications; Internet technologies; Geoinformation technologies; Programming languages; Training systems, programs, tests. Educational materials; Applications for computerization of engineering skills; Centers of IT education; Partners (commercial and scientific organizations that collaborate with educational institutions); News (latest events in education and science)

4.	XXI: Information Science and School <a href="http://www.school.kiev.ua/">http://www.school.kiev.ua/</a>	The server specializes in IT implementation in secondary education in Ukraine and presents author courses in information science, computer utilization methodologies for teaching school subjects, free educational software, reviews of paid software as well as other materials for teachers of information science. Courseware Computers at the lesson Information technologies at school For the teacher of information science Programs, concepts, standards Author courses The effective lesson Information science for junior school Contests in information science New computer technologies
5.	Information resources of higher education in Russia Automated Directory - <a href="http://www3.unicor.ac.ru">http://www3.unicor.ac.ru</a> and Information Resources of Open Education International Catalog <a href="http://catalog.unicor.ru">http://catalog.unicor.ru</a>	Informational and Analytical Support Center for Distance Education System, Ministry of Education of Russian Federation The directory presents: Data on information systems, automated administrative, educational and scientific systems, teaching applications developed for higher education (about 2000 entries); Information on developers and contact persons; Advanced search for information resources; Submission of information on new projects; Submissions to the Information Resources of Open Education international catalog ( <a href="http://catalog.unicor.ru">catalog.unicor.ru</a> ) developed in collaboration with UNESCO IITE. The international catalog is a continuation of "Information resources of higher education" project and stores data on newly designed educational information resources of educational and scientific institutions in member states.
6.	Information Server on Education, Commonwealth of Independent States <a href="http://cis.unibel.by/">http://cis.unibel.by/</a>	Information Server on Education of the Commonwealth of Independent States (ISE CIS) was designed to accumulate and disseminate educational information in the CIS. Unlike search engines and specialized databases, ISE contains: Links to educational servers; Specialized educational databases; Educational documents. Currently the following services are available from the server: Keyword search; Context search; New resources submission; Self-help: questions and answers

7.	Distance Education Server, Tambov State Technical University <a href="http://www.des.tstu.ru/">http://www.des.tstu.ru/</a>	Resource Directory on IT implementation in Education includes topics: Distance Education Teaching Programs Software Applications Collection Software Electronic Library Software Search Orthodox Pages Internet Resources Miscellaneous Experimental Server
8.	State and Prospects of Distance Education Informational and Analytical Support Center for Distance Education System, Ministry of Education of the Russian Federation <a href="http://de.unicor.ru">de.unicor.ru</a>	Specialized Web server designed on request from the Ministry of General and Professional Education of the Russian Federation to provide information services for people interested in distance education and higher education professionals specializing in distance education. The server intends to provide detailed and systematized information on issues of distance education. Structure: Events Calendar DE Around The World: Major Centers Scientific and Methodological Activity in DE DE Institutions Information Resources on DE DE Courses Russian Resources International Resources Informational Support for DE Apparatus and Software DE telecommunications Infrastructure DE Organization International Collaboration on DE

List of Spanish Interface IS ITE (21)

1.	Asociación de Televisión Educativa Iberoamericana (ATEI) <a href="http://roble.pntic.mec.es/atei/">http://roble.pntic.mec.es/atei/</a>	El servidor de la Asociación de Televisión Educativa Iberoamericana (ATEI). La pagina informativa, acceso a foros de debates, informacion sobre los cursos elaborados, referencias a las instituciones asociadas (mas de 100). El programa promovida por el Ministerio de Educacion y Ciencia de Espana.
2.	Biblioteca virtual de la transformacion educativa <a href="http://www.mcyt.gov.ar/teeducativa/bibliotecavirtual/home.html">http://www.mcyt.gov.ar/teeducativa/bibliotecavirtual/home.html</a>	El catalogo de los recursos educativos y materiales elaborados por el Ministerio de Cultura y Educación de Argentina para apoyar y acompañar la transformación educativa. El servidor del Ministerio.
3.	BIWE <a href="http://www.biwe.es">http://www.biwe.es</a>	The site provides with the information concerning educational resources , including using of Internet in education process (Internet courses on different disciplines), distance education, on-line education, new information technologies, educational centers using new technologies, etc.
4.	CENET Centro Nacional de Educacion Tecnologica <a href="http://www.inet.edu.ar/inet/cenet/marco-cenet.htm">http://www.inet.edu.ar/inet/cenet/marco-cenet.htm</a>	La pagina informativa del Instituto Nacional de Educacion Tecnologica de Argentina. El mejoramiento del aprendizaje y ensenanza a traves de elaboracion de los proyectos tecnologicos, cursos. Informacion de las actividades.
5.	CINDA <a href="http://www.cinda.cl/">http://www.cinda.cl/</a>	El servidor de la red interuniversitaria internacional. Informacion sobre la organizacion, boletin informativo, publicaciones, informacion de las universidades miembros, elaboracion de programas y seminarios. Un organismo internacional no gubernamental reconocido por la Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura, UNESCO, y por el Estado de Chile.
6.	CONACYT <a href="http://www.conacyt.mx/">http://www.conacyt.mx/</a>	La pagina del Consejo Nacional de Ciencia y Tecnologia del Ministerio de Educacion de Mexico. Apoyo al desarrollo e innovaciones cientificas-tecnologicas de Mexico. Programas y proyectos de nivel nacional.
7.	CONICYT Comicion nacional de investigacion cientifica y tecnologica <a href="http://www.conicyt.cl/">http://www.conicyt.cl/</a>	La pagina de organizacion gubernamental de Chile. Recursos informativos sobre la actividad de la Comicion. Apoyo a la politica governamrental en el campo de ciencia y tecnologia. Referencias, publicaciones, proyectos.
8.	EdiCurs <a href="http://www.edicurs.es/cursinet/index.html">http://www.edicurs.es/cursinet/index.html</a>	Network of educational centers of informatics> center of multimedia education. Offers programmes on management, English, especially for children, etc. The center provides 18 courses of informatics by Internet so that everyone can subscribe on them and study them directly from home for some fee during aproximately 6 months. 4 new courses on informatics are being prepared for studying.

9.	Educaweb.com <a href="http://www.educaweb.com/">http://www.educaweb.com/</a>	Un completo buscador de recursos educativos Navegador temático: Carreras Universitarias Universidades y Centros de Formación Formación a distancia Formación Profesional Ciclos Formativos, Formación Ocupacional ... Estudiar en el extranjero Cursos de idiomas Otros estudios oficiales Fuentes documentales y publicaciones Mercado laboral Servicios para Profesores y Centros Recursos, Editoriales, Librerías ... Organismos Públicos y Legislación Europea, Estatal, Autonómica, Local ... Servicios para los estudiantes Técnicas de estudio, Orientación ... Asociaciones, Instituciones y Fundaciones Webs internacionales de educación y Trabajo Lapagina del Institut DEP (Barcelona).
10.	ICEPSS Foundation <a href="http://www.icepss.es">http://www.icepss.es</a>	ICEPSS is an institution focused on organizing and teaching the presence and distance courses (officially recognized), producing and postproducing the audio-visual works of educational, social and sanitary interest. Instituto Calasanz de Ciencias de Educaci <a href="http://www.ciberaula.net/">http://www.ciberaula.net/</a> Elaboracion de los cursos, Software, consultoría, libros, colecciones educativas, recursos para educadores. El centro homologado por el Ministerio deEducacion Cultura y el Ministerio de Trabajo. (España). La pagina masEducativ <a href="http://www.maseducativa.com/">http://www.maseducativa.com/</a> Recursos educativos en Internet. Búsqueda general y por categorías: Áreas de ciencias, niveles educativos, páginas de interés educativas, forum, software gratuito. Un sistema de intercambio de enlaces educativos. El servidor español (Granada). Organización de Estados Iberoamericanopara la Educación, la Ciencia y la Cultura <a href="http://www.oei.es/">http://www.oei.es/</a> El servidor de un organismo internacional de carácter intergubernamental para la colaboración de los países Iberoamericanos en el campo de educación, ciencia y cultura. Contiene información sobre cumbres Iberoamericanas, programación y proyectos. Acceso al centro de recursos documentales e informáticos. Ozú <a href="http://www.ozu.com/">http://www.ozu.com/</a> Internet educational resources for Spanish or Latinoamerican students, teachers, families and directors, educational projects, technologies, formation in the sphere of new technologies, projects based on PNTIC for colleges, software for education, open courses.
11.	PROCIENCIA <a href="http://www.prociencia.mcy.gov.ar/">http://www.prociencia.mcy.gov.ar/</a> <a href="http://home.html">/home.html</a>	Recursos académico-pedagógicos, elaboración de los cursos a distancia destinados a docentes del Sistema Educativo. Contiene información sobre los cursos, material bibliográfico, multimedia. La unidad asociada al CONICET – Ministerio de Cultura y Educación de Argentina.

12.	Red Enlaces <a href="http://www.enlaces.cl/">http://www.enlaces.cl/</a>	Red Educacional Enlaces es el componente del programa MECE del Ministerio de educación de Chile. La pagina contiene publicaciones, referencias a los recursos educativos chilenos, catalogos. Asistencia técnico – pedagógica a los establecimientos escolares incorporados .
13.	REDUC Red Latinoamericana de informacion y documentacion en educacion <a href="http://www.reduc.cl/">http://www.reduc.cl/</a>	La pagina del sistema regional cooperativo de recopilación, procesamiento y difusión de estudios e investigaciones realizados en el campo de la educación en los países de América Latina y el Caribe. Base de datos, programacion, proyectos de investigacion, informacion sobre los centros asociados.
14.	Sistema de informacion universitaria. <a href="http://www.siu.edu.ar/default.html">http://www.siu.edu.ar/default.html</a>	La pagina informativa del sistema creada como parte del programa de reforma de educacion superior de Argentina. Informacion de eventos, proyectos, programas, actualizacion tecnologica. El proyecto gubernamental.
15.	UNESCO: INFOLAC / <a href="http://infolac.uco.mx/">http://infolac.uco.mx/</a>	Programa regional para el Fortalecimiento de la Cooperacion entre Redes y Sistemas Nacionales de Informacion para el Desarrollo en America Latina y El Caribe
16.	Voila España <a href="http://www.es.voila.com/">http://www.es.voila.com/</a>	Educational resources: databases, courses, educational activities; software programs, new educational technologies.
17.	Yahoo en Español <a href="http://espanol.yahoo.com/">http://espanol.yahoo.com/</a>	Different educational resources: TV and radio programmes and resources for adults, schools and colleges, high-quality educational resources, available by e-mail subscription or through the site, resources and support for young people and educators using the Internet for learning, courses on-line, K-12, on-line teaching and learning, teacher Education , telementoring, television .

## List of French Interface IS ITE (14)

1.	Business Distrib Multimedia / <a href="http://perso.wanadoo.fr/bdi/formatio.htm">http://perso.wanadoo.fr/bdi/formatio.htm</a>	Business Distrib multimedia offers you the following types of informatics study ( Internet,software),creation of sites, advice marketing and use of Internet in everyday study.
2.	Centre de Technologie de l'Education <a href="http://www.cte.lu">http://www.cte.lu</a>	Educational resources (including those of using Internet in educational practice), centers of educational resources, research in the sphere of new technologies in education, multimedia services, etc.
3.	CNDP (National Center for Educational Information) <a href="http://www.cndp.fr/">http://www.cndp.fr/</a>	Educational resources for schools, colleges; research, new technologies (audiovisual, Internet, multimedia), catalogues and products.
4.	Distance education <a href="http://www.excite.fr/education/">http://www.excite.fr/education/</a> <a href="http://www.excite.fr/directory/37529">/directory/37529</a>	Centers of tele-education of French Universities (Distance Education Interuniversity Federation) , information about the results of the exams. Informatics (software, PAO, development) and courses through corresponding as well as necessary computer vocabulary.
5.	Ecila -Technologies / <a href="http://www.ecila.fr/cat/Technologies/">http://www.ecila.fr/cat/Technologies/</a> <a href="http://www.ecila.fr/Informatique/">/Informatique/</a>	These sites offer new information technologies that can be used in education process
6.	Ensigna.com / <a href="http://ensigna.com/formation/">http://ensigna.com/formation/</a>	This center provides personal education as well as education in groups. The courses are intended to be used for interested organizations. The center offers 8 exploitation systems for profound study, different courses of informatics (including elementary knowledge), detail information about software, creation sites in Internet
7.	Excite <a href="http://www.excite.fr/">www.excite.fr/</a> ; Education New Technologies <a href="http://www.excite.fr/education/">http://www.excite.fr/education/</a> <a href="http://www.excite.fr/directory/39006">/directory/39006</a>	On these site some new projects, centers of education in Canada and France and their projects (electronic journal devoted to the integration of new technologies in education, project of library for the European Union which would deal with the new information technologies in education.
8.	Infoseek France / <a href="http://www.infoseek.com/">http://www.infoseek.com/</a>	New projects, centers of education, programs, new information and communication technologies (multimedia projects, EAO), pedagogic application of computer, educational resources for all levels and all the French-speaking countries.
9.	Mdo Concept / <a href="http://www.perigord.com/">http://www.perigord.com/</a> <a href="http://www.perigord.com/mdo-concept/formationGB.htm">/mdo-concept/formationGB.htm</a>	Teaching of informatics (Windows, Word, Excel, Publisher, Internet Explorer, and concept of web-sites) for computer users, beginners wanting to acquire knowledge on their daily tools or people who'd like to improve their expertise.
10.	Nomade <a href="http://www.nomade.fr">www.nomade.fr</a>	On this site many items concerning new information technologies in education are represented. Among them: new information and communication technologies (multimedia projects, EAO), pedagogic application of computer, educational resources for all levels and all the French-speaking countries.
11.	On-line courses <a href="http://www.excite.fr/education/">http://www.excite.fr/education/</a> <a href="http://www.excite.fr/directory/305">/directory/305</a>	On-line courses for either primary and secondary or higher education (different useful educational technologies in many disciplines - history, geography, languages, etc. )
12.	Spiral / <a href="http://www.spiral.lu/">http://www.spiral.lu/</a>	The transfer of technologies, information services and education into the sphere of informatics by enterprises of France, Belgium, Luxembourg and Germany.
13.	Upgrade Formation / <a href="http://www.upgrade.fr/fenligne/">http://www.upgrade.fr/fenligne/</a> <a href="http://www.upgrade.fr/html/index1.htm">/html/index1.htm</a>	The site offers distance and online education courses on informatics with the possibility of getting diploma. Interactive programs on management, Windows NT4, TCR/IP, IIS 4.0 etc. Expertise in software and Internet included.
14.	Voila France <a href="http://www.voila.fr">www.voila.fr</a>	On these sites there is much information concerning the new educational information technologies (audiovisual, research, Internet, CD-ROMs, on-line educational services) . They are: centers of information resources, distance education projects, on-line education, research laboratories, video and teleconferencing, multimedia and Internet.