

INFORMATION AND INFORMATION RESOURCES AS SOCIAL AND PERSONAL VALUES OF EDUCATION AND OF SUBJECTS OF THE EDUCATIONAL PROCESS IN THE INFORMATION ERA

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Abstract: The article presents the theoretical and experimental results of research into the value dimension of the information era. Four levels of work with information and information resources as social and personal values are distinguished: the level of information creation; level of information preparation and formation of information resources; the level of the subject's work with information and its further use; the level of purposeful training of a person to work with information. Significant processes implemented at these levels are analyzed. The state of formation of a person's readiness to work with information was also investigated with an emphasis on such components as: information-value orientation, analytical ability, information mobility, information-search readiness, information literacy. The research results are presented according to 2 periods of the 21st century. The first period (2000-2018) – the beginning of the 21st century – the beginning of the spread of the COVID-19 pandemic. Period II (2019-2022) – period of spread of COVID-19 (2019-2021) – introduction of martial law on the territory of Ukraine (2022). The generalization regarding the period I concerns information-value orientation, analytical ability, information mobility, information-search readiness, information literacy. The generalization regarding the period II reflects the results of the process of forming children's ability to work with printed information in family conditions. The research covered such subjects of the educational process as: preschool children, primary school children, adolescents, young people, students, teachers, parents of children.

Keywords: values; information; information resources; information mobility, information and search readiness, information literacy, subjects of the educational process.

1 Introduction

Scientists explain the essence of the concept of "value" from different positions. I. Bech considers it from the position of the subject's attitude (value is the experience of desirability or undesirability of value for a person [2]). M. Yarmachenko explains it from the position of significance (value is the positive or negative significance of objects of the environment, class, group, society as a whole, which is determined not by their properties in themselves, but by their involvement in the sphere of human life, interests and needs, social relations [24]). S. Covey explains values in comparison with principles (If a person does not recognize education as a value, he will never make continuous education the principle of his life [12]). V. Ognevnyuk characterizes values as certain general norms and principles that determine the purposefulness of human life, give it meaning, determine directions of activity and motivate human actions [20]).

Scientists consider personal values in different contexts, in particular, in relation to:

- Changes in social values (values are changing now faster than at any time in history. An even faster change in values is expected in the future (E. Toffler [9]));
- Regarding universal values (universal values are found in the person himself, they cannot be given, but only conditions for their development can be created (K. Rogers, D. Freiberg) [9]);
- Regarding the transition of social values into personal values (values represent an objective category, and value attitude is a subjective one (V. Ognevnyuk) [20]). A person

focuses on those values that he needs most at the moment, those that in the future will correspond to his interests and goals, express his experience (V. Kyrychok) [14]);

- Regarding the formation of value orientations (this is a relatively stable system of directing the interests and needs of an individual to a certain hierarchy of life values. This is a person's tendency to give preference to certain values in various life situations. This is a way of distinguishing phenomena and objects according to the level of their significance for a person (V. Kyrychok) [14]).

According to the results of the research, which was conducted as part of the educational project "Axia", the respondents attributed different values to the category of "significant and important" at each age of life. Specifically, this was the following [17]:

- Love of parents, faith in their own dreams, toys, parents (their presence), kindness, friendship, sincerity (from 4 to 7 years);
- Friendship, achievements, relationships with parents, education (from 8 to 13 years);
- Love, independence, communication, beauty, creativity, freedom, self-development, honesty, recognition of others as a person (from 14 to 19 years);
- Financial situation, own housing, family, self-realization, career, work, finding the meaning of life and its place in it, hedonism, optimism, family, mutual aid, experience, personal relationships, education, financial independence, psychological stability, patience (from 20 to 35 years);
- Respect, career, work, understanding, family, health, gratitude, tolerance, charity (from 35 to 60 years);
- Family, health, forgiveness, truth, wisdom (from 60 years to the end of life).

Research within the framework of the educational project "Axia" [17] proved that the change of personal values throughout a person's life not only indicates the formation of his spirituality, but also the significance of the change of values during life as a significant factor in the process of overcoming various psychosocial crises on the life path.

According to P. Lushin [16], crisis and transitional periods are periods of transition from one state to another. Crisis and transition periods in the process of personality development have a lot in common with transition and crisis periods in the life of society. The scientist considers these periods not only as a negative phenomenon, but also as an opportunity for society and the individual to move to the next, qualitatively new stage of development.

Consideration of crisis and transitional periods in the process of personality development and in the life of society should be carried out taking into account the history of society as a constant process of development and strengthening of human individuality. It should also be taken into account that:

- Different social and age categories of people adapt to crisis and transition periods in different ways (some – quickly, while others – for a long time);
- During crisis and transitional periods, a person does not always consciously use values that constantly correlate with his goals.

A person's assimilation of values and the formation of value orientations is a multifaceted and complex process that is carried out throughout his life. In education, a person's acquisition of values and formation of value orientations is organized in six stages [20]:

1. Stage I is the presentation of value in the real conditions of education;

2. Stage II – primary assessment of value, ensuring an emotionally positive attitude towards it;
3. Stage III – identifying the meaning of the value and its significance;
4. Stage IV – approval of perceived value;
5. Stage V – inclusion of the accepted value relationship to the relevant social conditions, actions, and communication;
6. Stage VI – the establishment of a value relationship in life.

The formation of certain values and value orientations indicates the completion of a certain stage of the formation of a person as an individual. A change in values and value orientation can be caused by various factors, in particular [14]: the formation of a different attitude in a person to the social and natural environment, the results of activities; new living conditions associated with the transformation of the socio-economic, political organization of society; moral norms of behavior determined by changes in the social conditions of society; micro- and macroenvironmental conditions; interpersonal influence; age and individual psychological characteristics; the degree of realization of the “Self”-concept of the individual; motives for choosing a certain profession; education system.

2 Materials and Method

In the conditions of the information era, information and information resources are classified as public and personal values. The article reveals the results of the study of significant processes that are implemented at four levels of work with information and information resources. We have defined the following levels:

- The level of information creation;
- The level of information preparation and formation of information resources;
- The level of the subject's work with information and its further use;
- The level of purposeful training of a person to work with information.

The state of formation of human readiness to work with information during two periods of the 21st century was also investigated:

Period I (2000-2018) – the beginning of the 21st century – the beginning of the spread of the COVID-19 pandemic – an analysis of scientific research of this period, the content of which relates to information-value orientation, analytical ability, information mobility, information-search readiness, information literacy.

Period II (2019-2022) – the period of spread of COVID-19 (2019-2021) – introduction of martial law on the territory of Ukraine (2022) – research of the process of formation of children's ability to work with printed information in family conditions.

The results of the research covered such subjects of the educational process as: preschool children, primary school children, adolescents, young people, students, teachers, parents of children. Various methods were used in the research, namely: theoretical (analysis of scientific data, arrangement and systematization of selected information, generalization of results) and empirical (conversation, questionnaire). Parents of preschool children (450 people), parents of primary school children (452 people), parents of adolescents (448 people), and parents of young people (452 people) were involved in the experimental part of the research.

3 Results and Discussion

Levels of work with information and with information resources in the conditions of the information era

The information era is characterized by the diversity of information, sources of information, information technologies in all spheres of life and the globalization of the information space, which ensures the rapid exchange of information flows and the

rapid introduction of new information into public circulation. Working with information has become a complex process, which, according to our reasoning, is carried out on four levels. We have defined the following levels:

- The level of information creation;
- The level of information preparation and formation of information resources;
- The level of the subject's work with information and its further use;
- The level of purposeful training of a person to work with information.

Significant processes at the level of information creation

At the level of information creation, human activity plays a decisive role, as a result of which information is created, information flows are formed and circulate in the global information space. According to T. Chernetska, this space exists in three modes [3]:

- A model of the future is an inactive information space of the future (includes information about the totality of all forms of matter, the knowledge of which in the process of human activity will become one of the factors of the development of society and the production of new information; it represents the extent of knowledge, the expansion of the boundaries of which determines the trends of further civilizational development);
- A model of the present is an active information space (in which and thanks to which information is produced, exists, circulates, develops, and is used);
- A model of the past is an inactive information space of the past (it includes information about the totality of all forms of matter that relate to the previous activities of people; existing in the mode of the past, it appears as an expanse, the process of learning of which affects the development of society to a greater or lesser extent).

Due to the knowledge of the inactive spaces of the past and future, the boundaries of the active information space are expanded. In the conditions of the information age, this process contributes to the development and strengthening of human individuality, is accompanied by the mediated global interaction of the inhabitants of the planet Earth, provides for the global circulation of many information flows, and provides for quick access to information at the request of each person.

To reveal the components of the active information space, we will use the scientific work of I. Aristova. The scientist defines the following components of the information space [1]:

- Information resources (databases and data banks, all types of archives, libraries, museum repositories, etc.);
- Information and telecommunication infrastructure (territorially distributed state and corporate computer networks, telecommunication networks and systems for special purpose and general use, data transmission networks and channels, means of managing information flows);
- Information, computer and telecommunication technologies (basic, applied and supporting systems, means of their implementation);
- Research and production potential in the fields of communication, telecommunications, informatics, computer technology (used to disseminate information and provide access to it);
- Organizational structures and personnel that ensure the functioning and development of the national information infrastructure;
- The market of information technologies, means of communication, informatization and telecommunications, information products and services;
- The system of interaction of the information space of Ukraine with the world's open networks;
- Information protection (security) system;
- Mass information system;
- System of information legislation.

We would like to add that in the Law of Ukraine “On Information” [29], the term “information” denotes documented or publicly announced information about events and phenomena occurring in society, the state, and the natural environment.

Significant processes at the level of information preparation and formation of information resources

Information as a set of data is: 1) an object of collection, registration, storage, transmission, transformation; 2) a resource that can be accumulated, realized, renewed, used. At the level of information preparation, information structuring is carried out, information systems are built, information databases are created, information is preserved in semantic networks as cognitive structures, and computer processing of data is carried out. Also, at the level of information preparation, a computer mechanism for obtaining the necessary information based on a formulated human request, etc. is being developed.

An example of the preparation of information for its use based on natural intelligence is given in the scientific study of O. Parkhomenko [22] in Table 1. The table shows that the analytical and synthetic processing of information is carried out in stages, involves the processing of various types of information flows, and is directed to the development of various types of information products.

Table 1: Analytical and synthetic processing of information based on involvement natural intelligence [22]

	Stage	Types of information flows	Types of information products	
			Published	Unpublished
1	Formation of the information array (stage of collection, registration, accumulation)	Scientific and technical publications, patent documentation, regulatory and technical literature, statistical information, legislative framework, results of scientific and technical activities, etc.	Books, journals, descriptions of inventions, standards, deposited manuscripts, laws, regulations, etc	Scientific reports, business trips, statistical information, technological information, exhibition information, address and nomenclature information, commercial information
2	Systematization of information and creation of reference systems	Databases, catalogs, filing cabinets, portals, etc. for each type of information flow	Indexes, catalogs, bulletins, etc.	
3	Analytical processing by direction	Local databases	Reviews, references, analytical notes, reports	
4	Preparation of analytical products for forecasting	Decision options	Comparative tables	
5	Analytical forecasting	Reports and proposals on informational estimates of the forecast		

The use of computer processing of information arrays contributes to the formation of various information and search systems. These systems provide: 1) storage of large volumes of data and information; 2) adding, removal, and change of stored data and information; 3) quick search for necessary data and information; 4) output of data and information in a form convenient for the user.

As for information resources, they are classified as the main subjects of modern man's work and important strategic resources of states. They influence the development processes of society in general and the economy in particular [25]. The spread of the production of information resources and their use was accompanied by legislative standardization. Ukrainian legislation defines concepts that relate to the terminological framework of the “information economy” (Table 2).

Table 2: Definition of terms related to the terminological basis of the information economy

Term	Definition of the term / regulatory document
Information resource	A set of documents in information systems (libraries, archives, data banks, etc.), prepared and systematized in a user-friendly way (Law of Ukraine “On the Concept of the National Informatization Program” [32])
National electronic information resources	Resources, regardless of their content, form, time and place of creation, form of ownership, intended to meet the needs of citizens, society, and the state (Decree of the Cabinet of Ministers of Ukraine “On Approval of the Concept of Formation of a System of National Electronic Information Resources”[30])

The following parameters are used to classify information resources (O. Rezina) [26]: 1) subject of data and information stored in them (scientific, educational, socio-political, financial-economic, environmental, etc.); 2) form of ownership (state, public organizations, joint stock, private); 3) availability of data and information (open, closed, confidential); 4) belonging to a certain information system (library, archival, scientific and technical, etc.); 5) source of data and information (official data, publications in mass media, statistical reporting, results of sociological research, etc.); 6) purpose and nature of data and information use (mass, regional, departmental, etc.); 7) form of presentation of data and information (text, digital, graphic, multimedia); 8) type of data and information carrier (paper, electronic).

A. Grytsenko [5] classified information resources according to the following criteria:

- By type of media (traditional (on paper and other material media), network (placed on a network service in the Internet), electronic (information in electronic form));
- By means of fixation (on machine carriers (processing with the help of machines), on paper, film, etc.);
- By the method of organization of storage and use (traditional (fund or array of documents, libraries, archives, museums, scientific institutions, etc.); automated (data bank, automated information system, knowledge base);
- The method of forming information arrays and dissemination of information (stationary (in the form of textbooks), mobile (in the form of data banks and search engines for them with dissemination on portable media));
- By the method of information formation (primary (natural) – contain information that was formed in natural conditions), secondary (artificial – contain information obtained artificially in the process of creative work));
- By territorial belonging (international or global (collected on the territory of several countries), national (the national property of a certain people), regional (formed and used on the territory of a certain region), local (providing the need in certain areas));
- By content factor (legal, technical, scientific, statistical, mass media, etc.);
- By access mode (open, with limited access (confidential, secret));
- By goals (knowledge, management resource, production resource, etc.).

Significant processes at the level of the subject's work with information and its further use

At the level of working with information and its further use, it is important to distinguish between the amount of information that has been developed by mankind, the amount of information that a modern person can process at his request, and the amount of information that a person actually uses during education, in everyday life, and professional activity.

The volume of information developed by mankind is not a constant value, as it is constantly increasing. According to P.

Lyman and H. Verien (University of California), in 2002, the volume of information resources increased by 5 million terabytes. In the same year, the amount of information resources of the US Congress library fund reached 10 terabytes and included 19 million books and 56 million manuscripts [31].

The volume of information that a modern person can process at his request is a relatively constant value. According to V. Gubaylovsky [7], a modern person does not need much more information than a hundred or a thousand years ago. Man has always perceived and today perceives approximately the same amount of information. A person is always meaning a choice. A person is an information filter. A person is defined and self-defined by the information he rejects.

The problem of determining the amount of information that a modern person can process at his request is reduced to the problem of selecting information by rejecting unnecessary information. Carrying out the process of rejecting unnecessary information, a modern person processes volumes of information that are constantly increasing. V. Gubaylovsky [7] reduces the problem of human resistance to ever-increasing volumes of information to the implementation of an effective search in an optimally permissible period of time. A person needs to choose that and only that information that he needs.

The amount of information, which can be processed by a modern person at his request, is affected by such factors as:

1. A person's experience of information need. The need for new data and information arises in a person under certain conditions, including the following:
 - Awareness of the significance of the goal for oneself, search for ways to achieve it;
 - Awareness that there is a lack of information for solving a problem, solving a practical or theoretical task;
 - Revealing of inconsistency between what a person already knows and the content of new information;
 - Revealing a contradiction between scientific and everyday consciousness (from a person's point of view, theoretical provisions do not correspond to social practice or personal life experience);
 - Development of knowledge that has personal significance for the individual.
2. The ability of a person to form an information need in an information request. This request captures the person's choice of one or more actions. It can be a search for the necessary information in printed sources, communication with a competent person, formation of an "incoming message to the automated system, which contains a request to issue data" [28].
3. A person's ability to select certain information from a data array, from a separate (printed or electronic) text, document, set of documents, from a storage device of any physical nature.

The level of purposeful training of a person to work with information

A person's preparation for life in the information age continues throughout his life and is implemented in various forms, among which education in educational institutions and self-education activities dominate.

Education in educational institutions in the conditions of the information era is aimed at the formation of the following necessary elements:

- Information-value orientation (the basis of the orientation is the attitude towards information as a value without which it is impossible to achieve personal, professional, and social development as well as tolerance for uncertainty when working with information);
- Analytical ability (the basis it is the ability to analyze the reliability, completeness, and objectivity of information in conditions of uncertainty);

- Information mobility (the basis of mobility is the ability to transfer knowledge from one information environment to another, to quickly adapt to new and modernized information search and processing technologies);
- Information-search readiness (the basis of readiness is the attitude to the situation of uncertainty as a situation that is necessary and useful for the performance of information-search activity, as well as the attitude to the process of information search as an opportunity to achieve a certain level of educational, personal, and professional development);
- Information literacy (the basis of literacy is the ability to determine the purpose of information search, taking into account the problem to be solved (the task to be performed), to determine sources of information (paper, electronic, network resources, etc.), to determine the most effective ways to search for information; to highlight the necessary information to solve assigned tasks, to establish the reliability and accuracy of information, to evaluate its effectiveness in solving a problem (fulfilling a task), to analyze information and organize the results of the analysis in accordance with the purpose of the search, to integrate new information into the system of own knowledge, to effectively use the processed information, to predict consequences of informational influences on the social environment and be ready to bear responsibility for it).

According to the content, the educational resources of the Internet can be divided into the following categories [26]:

- Scientific and popular scientific materials (electronic libraries, electronic versions of scientific and popular scientific periodicals, science and technology news, etc.);
- Reference materials (online dictionaries, encyclopedias, reference books);
- Educational materials (sites dedicated to education problems, methodological developments, distance courses, project programs, etc.);
- Educational media (electronic versions of educational magazines and newspapers, thematic sites, virtual museums, etc.).

At the level of purposeful training of a person to work with information in the conditions of the information era, there is a simultaneous implementation of processes in two directions:

- Step-by-step formation of the components of information-value orientation, analytical ability, information mobility, information-search readiness, information literacy;
- Training using already formed components of information-value orientation, analytical ability, information mobility, information-search readiness, information literacy.

Research of the state of formation of human readiness to work with information during 2 periods of the 21st century

Period I - the beginning of the 21st century – the beginning of the spread of the COVID-19 pandemic;

Period II - period of spread of COVID-19 (2019-2021) – introduction of martial law on the territory of Ukraine (2022)

In the period from the beginning of the 21st century to the beginning of the spread of the COVID-19 pandemic, a number of scientific works presented the results of research on the formation of certain components of information-value orientation, analytical ability, information mobility, information-search readiness, information literacy in various subjects of the educational process, in particular, in pupils, students, teachers, and also describes the process of their formation in various educational institutions (school, higher education institution, postgraduate pedagogical education institution). The analysis of the research results of various scientists contributed to the establishment of the current state of formation of human readiness to work with information in the period from the beginning of the 21st century to the beginning of the spread of the COVID-19 pandemic.

Based on the analysis of the data in Table 3, we formulated a conclusion: a high level of information literacy does not indicate a high level of formation of the ability to independently search for information for professional and personal development. In the period of 2014-2015, for 65.1% of students, the beginning of the search for information for professional and personal development was caused by external stimuli or factors.

Table 3: Distribution of respondents according to the level of information literacy and the ability to independently search for information for professional and personal development according to the results of scientific research in 2014-2015

Object of research/ (name of scientist, source)	Category of respondents	Levels of formation	% of respondents with high (H), medium (M) and low (L) levels of formation of the research object					
			≥ 10	≥ 20	≥ 30	≥ 40	≥ 50	≥ 60
Information literacy (V. Lukashiv [15])	students	H			27.5			
		M					63.2	
		L	9.3					
Independent search for information for professional and personal development (O. Papakytsi [21])	students	H	9.2					
		M					65.1	
		L			25.7			

As a result of conducting scientific research in the period 2012-2015, conclusions were formulated regarding various participants in the educational process, in particular:

1. Regarding high school students. In 28% of high school students, the ability to use information resources in the learning process is formed at the creative level, in 72% of high school students – at the reproductive level (A. Grytsenko) [6].

On the basis of the comparison of the research data of A. Grytsenko and V. Lukashiv (Table 3), we can formulate a conclusion. The formation of the creative level of the formation of the skills to use information resources in the learning process is a prerequisite for a high level of information literacy.

2. Regarding students. In the process of preparing for classes, 60% of students use media educational tools daily, and 40% – sometimes. Among 40% of students, 2% used media education tools “today” using a mobile phone, 28% used them “2-3 days ago”, and 10% – “2-3 weeks ago” (S. Itz [8]). In the process of independent preparation for foreign language classes, 83% of students use specialized Internet sites, 45% use special Internet programs, 45% use printed textbooks, manuals, methodical recommendations (S. Itz [8]). Based on the comparison of the data of the studies of S. Itz, A. Grytsenko, and V. Lukashiv, we can formulate a conclusion. The reproductive level of formation of the ability to use information resources in the learning process does not affect the formation of a high level of information literacy.

3. Regarding teachers. 15.2% of teachers constantly use various information resources in the educational process, 72% of teachers search for information on the Internet, 8.6% of teachers use information resources, in particular, multimedia programs, to organize student learning (V. Nazarenko) [18].

A conclusion can be formulated based on a comparison of the research data of V. Nazarenko (item 3), A. Grytsenko (item 1) with the results of the research of V. Lukashiv [15] and O. Papakytsi [21]. The ability of teachers to use information resources to organize creative educational activities of students contributes to the formation of a high level of information literacy.

As a result of the analysis of the data in Table 4, we come to the following conclusions:

1. A high level of tolerance to uncertainty when working with information does not correlate with a high level of information mobility and the ability to work with information.
2. The development of the ability to work with information is only partially influenced by a high level of tolerance to uncertainty when working with information and a high level of information mobility.

Table 4: Distribution of respondents by levels of tolerance to uncertainty when working with information, information mobility, ability to work with information (according to the results of scientific research in 2011-2014)

Object of research/ (surname, name of scientist, source)	Category of respondents	Level	% of respondents with a high (H) level of formation of the research object						
			≥ 10	≥ 20	≥ 30	≥ 40	≥ 50	≥ 60	≥ 70
Tolerance for uncertainty when working with information (Papakytsi [21])	students	H				33.5			
Information mobility (Nekrova A. [19])	students	H			27.5				
Skill to work with information (Papakytsi [21])	students	H	9.7						

The formation of the skill to work with information particularly attracted our attention. We analyzed the works of scientists and summarized the information related to the problems they identified.

1. 19.5% of students showed a high level of interest in reading, 67.6% – an average level, and 12.9% – a low level. The main reasons for the decrease in interest in reading are the inability of schoolchildren to work with printed publications, to organize independent work with a book, lack of interest in reading lessons, insufficient knowledge and skills that make it possible to effortlessly read by conscious choice (O. Kompanii [10]).
2. 90.3% of students experience difficulties when constructing questions to find missing information.
3. 27.1% of students experience difficulties during the selection of non-essential information for solving professional tasks (O. Koshova [11]).
4. 71.9% of students experience difficulties during independent work with the textbook to study the topic proposed by the teacher for independent study (O. Koshova [11]).

Based on the generalization of the information in points 1-4, we can draw conclusions.

- The skill to work with information includes the skill to identify information that is not enough to complete a task, solve a problem, the skill to formulate an information search request, the skill to work independently with information in printed or electronic format, the skill to separate main and secondary information in the text.
- Formation of the skill to work with information is formed on the basis of persistent interest in reading and analytical ability.

Persistent interest in reading is formed in children of preschool and primary school age, and analytical abilities in teenagers and young adults. According to the results of O. Koshova's research, 71.7% of students are motivated to develop analytical skills

because they believe that it will help them make the right decisions in their future professional activities, 21.7% believe that it will facilitate the employment process, 38.3% believe that this is a necessary condition for mastering new knowledge and skills (O. Koshova [11]).

The period of the spread of COVID-19 (2019-2021), the introduction of martial law on the territory of Ukraine (2022) is characterized by an intensive increase in information literacy as a result of purposeful training in an educational institution, self-educational activities, as well as a result of participation in the distance learning format. Therefore, we paid attention to the formation of the ability to work with printed information in a family environment. Parents of preschool children (450 people), parents of children of primary school (452 people), parents of adolescents (448 people), parents of young people (452 people) were involved in the survey.

As a result of the analysis of the questionnaires, the following was established:

1. 97% of parents buy books for preschool children, 23% of parents buy books for primary school children, 0% of parents buy books for adolescents and young people, 4% of parents buy a book for themselves.
2. 100% of parents read the book together with preschool children; 9% of parents read a book together with their children of primary school age; 1% of parents discuss the book with their children-adolescents and young people; 2% of parents discuss the book with friends (colleagues).
3. 100% of parents indicated that preschool children really like it when their parents read a book; 100% of parents note that children of primary school age do not ask them to read a book to them; 37% of children of primary school age, 6% of adolescents, and 1% of young people ask their parents about the content of what they have read.

4 Conclusion

The analysis of the sustainable development of society in the information era was carried out with an emphasis on significant processes that are implemented at four levels of work with information and information resources (the level of information creation; the level of information preparation and the formation of information resources; the level of the subject's work with information and its further use; the level of purposeful training of a person to work with information).

At the level of information creation, significant processes include human activity, as a result of which information is created, information flows are formed, and the filling of the active information space is determined due to the knowledge of the inactive spaces of the past and future.

At the level of information preparation and formation of information resources, attention is focused on analytical and synthetic processing of information based on the use of natural intelligence and using computer processing of information arrays. The process of introducing a new approach to the structuring of production industries is revealed, which is based on information resources attributed to the main subjects of modern man's work and important strategic resources of states. Information resources are also analyzed by parameters and classifications.

At the level of the subject's work with information and its further use, attention is focused on the disclosure of various amounts of information (the amount of information that has been developed by mankind; the amount of information that can be processed by a modern person by making a certain request; the amount of information that a person actually uses during training, in everyday life, professional activity). Factors that affect the amount of information that a modern person can process at his request are also defined. This is a person's experience of an information need, a person's ability to form an information need in an information request, a person's ability to select certain information from various forms of its presentation.

At the level of purposeful training of a person to work with information, attention is focused on lifelong learning and the formation of information and value orientation, analytical ability, information mobility, information search readiness, and information literacy.

Two periods of the 21st century were singled out for the study of the state of formation of a person's readiness to work with information. Period I lasted from the beginning of the 21st century to the beginning of the spread of the COVID-19 pandemic. Period II – from the period of spread of COVID-19 (2019-2021) to the introduction of martial law on the territory of Ukraine (2022). During Period I, the analysis of the state of formation of a person's readiness to work with information was implemented on the basis of studying and comparing the results of scientific research by various scientists. As a result of the analytical activity, the following conclusions were formulated:

1. A high level of information literacy does not indicate a high level of the ability to independently search for information for professional and personal development.
2. In the period 2014-2015, for 65.1% of students, the beginning of the search for information for professional and personal development was caused by external incentives or factors.
3. The formation of the creative level of the formation of the skills to use information resources in the learning process is a prerequisite for a high level of information literacy.
4. The reproductive level of formation of the ability to use information resources in the learning process does not affect the formation of a high level of information literacy.
5. The ability of teachers to use information resources to organize creative educational activities of students contributes to the formation of a high level of information literacy.
6. A high level of tolerance to uncertainty when working with information does not correlate with a high level of information mobility and the ability to work with information.
7. The development of the ability to work with information is only partially influenced by a high level of tolerance to uncertainty when working with information and a high level of information mobility.
8. Level of work with information includes the ability to identify information that is not enough to perform a task, solve a problem, the ability to formulate an information search request, the ability to work independently with information in printed or electronic format, the ability to separate main and secondary information in a text.
9. Formation of the ability to work with information is carried out on the basis of persistent interest in reading and analytical ability.

During the Period II, the analysis of the state of formation of a person's readiness to work with information was implemented on the basis of the analysis of questionnaires of parents of students as subjects of the educational process. The content of the questionnaires was aimed at finding out information about the process of forming children's ability to work with printed information in family conditions. The category "children" includes preschool children, primary school children, adolescents, young people.

As a result of the analytical activity, the following conclusions were formulated:

1. Parents are not an example for children during the formation of the ability to work with printed information in family conditions.
2. Parents buy books only for children of preschool age.
3. Children of primary school age do not show interest in reading a book with their parents.
4. Discussing the content of the book is not a typical phenomenon for families of children of primary school age, teenagers, and young adults.

5. The ability to work with printed information should acquire purposeful formation not only in educational institutions, but also in the family.

Literature:

1. Aristova, I. V. (2000). *Derzhavna informatsiina polityka: Orhanizatsiino-pravovi aspekty*. Kharkiv: Un-t vnutrishnykh sprav.
2. Bekh, I. D. (2019). Tsinnosti yak yadro osobystosti. *Tsinnosti Osvity ta Vychovannia*, 3, 8-9.
3. Chernetskaia, T. Y. (2012). Osvitnie seredovysheche navchalno-doslidnytskoi diialnosti ditei: osoblyvosti proektuvannia, modeliuannia i funktsionuvannia [The educational environment of children's educational and research activities: features of design, modeling and functioning]. Scientific notes of the Small Academy of Sciences of Ukraine: collection of scientific works. Vol. 1. Series: Pedagogical sciences. Kyiv: CITIPRINT LLC, pp. 50–63
4. Forrester, D. (2003). *Myrovaia dynamyka*. WRIGHT-ALLEN Press.
5. Hrytsenko, A. P. (2015). Formuvannia u starshoklasnykh umin vykorystovuvaty informatsiini resursy u protsesi navchannia vsesvitnoi istorii. [PhD dissertation brief], 13.00.04 – teoriia ta metodyka navchannia (istoriia ta suspilstvoznachchi dystsypliny). Kyiv, 11.
6. Hrytsenko, A. P. (2013). Poniattia informatsiinyi resurs yak dydaktychna katehoriia. *Naukovyi Visnyk Mykolaivskoho Derzhavnogo Universytetu imeni V.O. Sukhomlynskoho: Zbirnyk Naukovykh Prats*, 141(93), 24-27.
7. Hubailovskiy, V. (2002). *Pod znakom beskonechnosti*. www.svoboda.org/programs/sc/2002/sc.100802.asp
8. Its, S. V. (2014). Pedahohichni umovy formuvannia profesiinoi kompetentnosti maibutnoho vchytelia inozemnoi movy zasobamy mediaosvity. [PhD dissertation brief], 19.00.04 – teoriia ta metodyka profesiinoi osvity. Zhytomyr, 10.
9. Kostiuik, H. S. (1989) Navchalno-vykhovnyi protses i psykhychnyi rozvytok osobystosti. Kyiv: Radianska shkola, 608.
10. Kompanii O. V. (2013). Dydaktychni zasady formuvannia chytatskykh interesiv molodshykh shkoliariv v umovakh informatsiinoho navchalnoho seredovyshecha [PhD dissertation brief]. 19.00.09 – teoriia navchannia. Ternopil, 8–14.
11. Koshova, O. P. (2011). Formuvannia informatsiino-analitychnykh umin maibutnykh ekonomistiv v protsesi vyvchennia dystsyplin tsykladu pryrodnycho-naukovoii pidhotovky. [PhD dissertation brief], 13.00.04 – teoriia ta metodyka profesiinoi osvity. Poltava, 12.
12. Kovy, S (2005). *Vosma zvychka : vid uspishnosti do velychi* [The eighth habit: from success to greatness]. Kyiv: Vydavnytstvo Oleksiia Kapusty.
13. Krit, N. V. (2017). Formuvannia vmin samostiinoi roboty z pidruchnykom u protsesi navchannia fizychnoi heohrafii uchniv 6-8 klasiv. [PhD dissertation brief], 13.00.02 – teoriia ta metodyka navchannia (heohrafiia). Kyiv, 10.
14. Kyrychok, V. A. (2008). Tsinnisni oriantatsii. *Entsyklopediia osvity*. Akad. ped. nauk Ukrainy; holovnyi red. V. H. Kremen. Kyiv: Yurinkom Inter, 991.
15. Lukashiv, V. B. (2014). Formuvannia informatsiinoi kultury maibutnykh fakhivtsiv zviazku. [PhD dissertation brief], 19.00.04 – teoriia ta metodyka profesiinoi osvity. Kirovohrad, 16.
16. Lushyn, P. V. (2017). *Khaos y neopredelennost: ot stradaniia – k rostu y razvytyiu*. Kyev: Nauka.
17. Miyer, T., Holodiuk, L., Tkachenko, I., Savosh, V., Bondarenko, H., Vashchenko, O., Sukhopara, I. (2020). A change of human values during the life as an indicator of the formation of a spiritual being. *AD ALTA. Journal of Interdisciplinary Research*, 11(1), 30-34.
18. Nazarenko, V. S. (2012). Rozvytok informatsiino-komunikatsiinykh kompetentnosti uchyteliv u systemi pislidiplomnoi osvity. [PhD dissertation brief], 19.00.04 – teoriia ta metodyka profesiinoi osvity. Chernihiv, 9.
19. Nieliepova, A. V. (2011). Metodyka formuvannia informatsiinoi mobilnosti maibutnykh ahronomiv-doslidnykh. [PhD dissertation brief], 19.00.02 – teoriia ta metodyka navchannia (silskohospodarski dystsypliny). Kyiv, 15.
20. Ohneviuk V. O., Sysoieva, S. O, Khoruzha L. L., Sokolova, I. V., Kuzmenko O. M., Moroz O. O. (Eds.). (2012). *Osvitohiia: vytoky naukovooho napriamu*. Kyiv: VP "Edelveis".
21. Papakytsia, O. K. (2014). Psykholohichni osoblyvosti rozvytku informatsiinoi hotovnosti maibutnykh inzheneriv do profesiinoi diialnosti, [PhD dissertation brief], 19.00.07 – pedahohichna ta vikova psykholohiia. Kyiv, 8–9.
22. Parkhomenko, O. V. (2006). Informatsiino-analitychne zabezpechennia protsesu pryiniattia rishen v systemi naukovotekhnichnoi informatsii. [PhD dissertation brief], 08.02.02. Kyiv, 23.
23. Peccei, A. (1981). *One hundred pages for the future: reflections of the president of the Club of Rome*. New York: "Pergamon Press".
24. Pedahohika, (2012). *Za redaktsiieiu M. D. Yarmachenka*. Kyiv: Vyscha shkola.
25. Porokhovskiy, A. A. (2002). Hosudarstvo y "Novaia ekonomyka": Amerykanskiy podkhod. *SShA, Kanada - Ekonomyka, Polytyka, Kultura*, 3, 3-14.
26. Rezina, O. V. (2005). Formuvannia informatsiino-poshukovykh ta doslidnytskykh umin uchniv starshoi shkoly v protsesi navchannia informatyky. [PhD dissertation brief], 19.00.02 – teoriia ta metodyka navchannia informatyky. Kyiv, 12.
27. Rozporiadzhennia Kabinetu Ministriv Ukrainy "Pro zatverdzhennia Kontseptsii formuvannia systemy natsionalnykh elektronnykh informatsiinykh resursiv" (2003). <https://zakon.rada.gov.ua/laws/show/259-2003-%D1%80#Text>
28. Vasylenko, I. M. (2011). Formuvannia pryiomiv produktyvnoho myslennia na urokakh informatyky. *Visnyk ChDPU named after T.H. Shevchenko, Seriya: Pedahohichni Nauky*, 4(4), 27-30.
29. Zakon Ukrainy "Pro informatsiinu" (1992). <http://zakon1.rada.gov.ua/laws/show/2657-12>.
30. Zakon Ukrainy "Pro Kontseptsiiu Natsionalnoi prohramy informatyzatsii" (1998). <https://zakon.rada.gov.ua/laws/show/75/98-%D0%B2%D1%80#Text>
31. Zaretska, I. T., Kolodiaznyi, B. H., Hurzhii, A. M., Sokolov, M. O. (2002). Informatyka navchalnyi posibnyk dlia 10–11 klasiv zahalnoosvitnoi shkoly. Kharkiv: Fakt.

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