

Arnold E. Kiv
Vladimir N. Soloviev
(Eds.)



Cloud Technologies in Education

Proceedings of the 6th Workshop,
CTE 2018

Kyryvi Rih, Ukraine
December 21, 2018

Kiv, A.E., Soloviev, V.N. (Eds.): Cloud Technologies in Education. Proceedings of the 6th Workshop CTE 2018, Kryvyi Rih, Ukraine, December 21, 2018, CEUR-WS.org, online

This volume represents the proceedings of the 6th Workshop on Cloud Technologies in Education (CTE 2018), held in Kryvyi Rih, Ukraine, in December 21, 2018. It comprises 36 contributed papers that were carefully peer-reviewed and selected from 59 submissions. The accepted papers present the state-of-the-art overview of successful cases and provides guidelines for future research. The volume is structured in five parts, each presenting the contributions for a particular workshop track.

Copyright © 2019 for the individual papers by the papers' authors. Copyright © 2019 for the volume as a collection by its editors. This volume and its papers are published under the Creative Commons License Attribution 4.0 International (CC BY 4.0).

Technology of forming media literacy of children of the senior preschool age of Ukraine

Oleksandra I. Yankovych^{1,2}[0000-0003-4253-5954], Volodymyr M. Chaika¹[0000-0003-3665-0403],
Tetiana V. Ivanova³[0000-0003-1432-4893], Kateryna M. Binytska⁴[0000-0002-2111-5275],
Iryna I. Kuzma⁵[0000-0002-1219-8216], Oksana T. Pysarchuk¹[0000-0003-0110-9174],
and Halina I. Falfushynska¹[0000-0003-3058-4919]

¹ Ternopil Volodymyr Hnatiuk National Pedagogical University,
2, M. Kryvonosa St., Ternopil, 46027, Ukraine
yankov@tnpu.edu.ua, chaikavm2704@gmail.com,
pysarchukoksana04@gmail.com, falfushynska@tnpu.edu.ua

² Kujawy and Pomorze University in Bydgoszcz,
55-57, Toruńska Str., 85-023 Bydgoszcz, Poland

³ Mariupol State University, 129a, Budivelnikiv Ave., Mariupol, 87500, Ukraine
tv.ivanova77@gmail.com

⁴ Khmelnytskyi Humanitarian-Pedagogical Academy,
Proskurivskoho pidpillia Str., 139, City Khmelnytskyi, Ukraine
rfn.yz87@gmail.com

⁵ Ternopil Regional Communal Institute of Postgraduate Pedagogical Education,
1, V. Hromnytskoho Str., Ternopil, 46027, Ukraine
iryna.ihorivna.kuzma@gmail.com

Abstract. The article substantiates the technology of forming media literacy of senior preschool children in the establishments of preschool education of Ukraine.

The features of preschool media education have been determined. Its relevance has been shown. The focus is on conducting the all-Ukrainian experiment on media education for 2017–2022.

The problems in implementation of media education in preschool establishments have been identified and the prospects for their solution have been determined. The psychological factors of forming media literacy of children of the senior preschool age have been highlighted. It has been proved that preschool age is sensitive for the formation of critical thinking. The concept of “preschool media education” as part of the educational process has been characterized by the three-component structure.

The peculiarities of conducting ascertaining and forming experiments in the establishments of preschool education of Ternopil, Khmelnytskyi have been shown.

The expediency of media education for educators of the establishments of preschool education of Ukraine has been proved.

Keywords: media education in preschool establishments, technology, media education, critical thinking.

1 Introduction

1.1 Problem statement

Media threats as manipulations of consciousness, fake messages, dangerous acquaintances, the emergence of dependence on new media, provoking aggression, cruelty, violence, etc. are increasing in the modern Ukrainian society. Information wars with the use of manipulations and fakes appeared to be no less devastating than the ones using the latest firearms. In such conditions, media education is becoming increasingly relevant, primarily for children, since the age of a child is constantly decreasing when child first contacts the mass media. It is necessary to begin to form media literacy as early as older preschool age. There are several reasons for this. Media literacy in preschool is not perceived as a subject, but as a way of life. Later, teenagers have to be re-educated, changing skills and style of behavior in the media environment. It is much more difficult to do that than to organize properly media education from the very beginning.

Despite the relevance of the media education problem for preschoolers, it is poorly researched; in addition, a number of contradictions are not resolved, moreover at the level of conceptual documents.

For example, the Concept of Implementation of Media Education in Ukraine (new edition) indicates the appropriateness of preschool media education, which is fundamentally integrated and aimed at balanced aesthetic and intellectual development of a child's personality (including various forms of intelligence: emotional, social and practical), provides child's protection against aggressive media environment (also from the information "garbage", inappropriate to the age capabilities of child's psyche information influences, containing the elements of violence, horror, erotics), the ability to navigate, choose and use media products adapted to the age norms [21]. However, in the Basic component of preschool education, the issue of media coverage is not given significant attention. Only in the variative part of the standard, in the "Computer Literacy" educational strategy in particular, is stated that a child should be familiar with computer, acquire basic techniques of work with it, adhere to the rules of safe behaviour while working with a computer [6]. But these skills are not essential to a child, who we call a media literate one.

Given the relevance of media education in the modern society, the Ministry of Education and Science of Ukraine approved an all-Ukrainian experiment on media education for 2017–2022, which involves 153 educational institutions, not only schools, gymnasiums, lyceums, regional institutes of postgraduate education, but also preschool educational institutions [11], [33]. However, the question concerning the format of the media education implementation remains controversial, as well as whether preschool age is sensitive to the formation of critical thinking. The creation of teaching and methodological support for media education in preschool is a problem. The level of media literacy of older preschoolers depends largely on its quality.

1.2 Analysis of recent researches and publications

Problems of the children and youth's media literacy formation are the subject of the research of Ukrainian scholars, namely: Kateryna M. Binytska [59], Tetiana V. Ivanova [17], Valerii F. Ivanov [17], Iryna Ya. Myshchysyn [34], Liubov A. Naidonova [17], Iryna M. Nosachenko [36], Hanna V. Onkovich [38], Leonid V. Orshanskyi [39], Svitlana P. Shumaieva [49], Oksana V. Volosheniuk [17], Alla K. Voloshyna [58], and others, as well as foreign scientists – Anna Andrzejewska [1], Cary Bazalgette [3], Józef Bednarek [4], Ewelina Brzyszc [8], Alexander V. Fedorov [13], Cecilia von Feilitzen [14], Janusz Gajda [15], George Gerbner [51], Henry A. Giroux [16], Luc Giroux [41], Robert Kubey [23], Adam Lepa [26], Len Masterman [32], Jacques Piette [41], W. James Potter [45], Bronisław Siemieniecki [27], Dorota Siemieniecka [50], Maciej Tanaś [54], etc. The interpretation of the basic concepts was carried out in the works of the abovementioned researchers; goals, tasks, concepts, functions, directions, the main factors of media education genesis, etc. are defined. The influence of the mass media on the development of a child is reflected in the works of Vasyl O. Sukhomlynskyi [53], the classic of pedagogy, as well as in the numerous researches of Ukrainian scholars, in particular, Lidiia H. Chorna [9], Ruslana Z. Danyliak [10], Vasyl V. Lyzanchuk [30], Olena V. Nevmerzhytska [35], Tamara B. Poiasok [42], Diana A. Popova [44], Svitlana I. Shandruk [47], Petro M. Shcherban [48], Valerii H. Skotnyi [57], Nataliia D. Temekh [55], Anastasiia V. Zaitseva [60], and others. The works of these scholars focus on the insufficient use of media potential, print media in particular, for the upbringing of children; on the necessity to eliminate the low-end media products.

The issues of the preschoolers' media education are investigated by Ukrainian scientists, namely: Nadiia I. Ashytok [2], Nataliia V. Havrysh [6], Olena S. Kachura [18], Ruslana V. Kondratenko [20], Olena O. Kravchysyna [19], Kateryna L. Krutii [22], Olena M. Oliinyk [37], Olha B. Polievikova [43], Yuliia B. Semeniako [46], Olena P. Sotska [52] and others. The scientists pointed to the positive functions of the modern media in preschool education: didactic, educational, diagnostic, entertaining, etc. At the same time, they focus on the threats of the modern media to a child and the relevance of media education precisely in preschool, particularly in this context, Olena S. Kachura notes: "The average child is already from two years under the influence of the information flow coming from the TV, at the age of three a child shows fairly stable preferences in the choice of cartoons, and to five years, begins to master computer skills. These resources carry so much information that it is difficult to master even for an adult, what to say then about a child. The key to the formation of a person capable of active and safe functioning in the modern media space is media education" [18].

However, the technology of the media literacy formation of older preschoolers is not described. Older preschoolers are meant in particular, because at this very age they actively begin to contact with the latest technology, not being fully aware of its threats. In preschool age (5–6 years) all mental operations are actively developing in children, the development of cognitive activity and constant cognitive interest as a foundation for future learning motivation takes place. Such preschoolers are ready to begin to form

the ability of conscious, critical, responsible perception of information. Given the psychological factors: the development of only visual and figurative thinking, it is impractical to do that earlier.

The problem of the low level of parents and educators' media literacy, who have to help children to become literate, remains in preschool educational institution. It is obvious that it is impossible to form competence in a child, if you do not possess it yourself. Parents often do not know what media, media education, media literacy are and they associate them with the mass media – radio, television, the Internet. Educators also feel the need to improve their own media culture. They note that there aren't any methodological materials for the formation of children's media literacy. Such developments are intensively created abroad, in Poland in particular, where the "Media Education" (Edukacja Medialna) web-site operates, with scripts, exercises and additional information for conducting classes in preschools, schools, houses of culture and libraries [24].

The materials are elaborated in accordance with the Catalogue of Media and Information Competences defined within the framework of the "Digital Future" project. In addition, other interesting developments for conducting workshops, media education classes for preschoolers and their parents were created [5]. The systematic work on creating such resources has only begun in Ukraine.

The relevance of the problem of implementing media education in preschool institutions, its lack of development in scientific sources, the need to resolve these controversies led to the definition of the *purpose of the study*: to prove and experimentally test the technology of media literacy formation of older preschoolers in preschool institutions of Ukraine.

The object of the research is institutions of preschool education of Ukraine; the subject is the media education of older preschoolers.

2 Material and methods

Theoretical and empirical methods were used to realize the purpose of the study.

Among the theoretical ones, primarily are such as functional and structural, interpretive and analytical, comparative analysis of literary and informational sources, through which the investigated problem was studied, forms, methods, means of realization of media education and formation of children's media literacy in Ukrainian pedagogy were revealed. An interview method was used in order to determine modern problems and ways to solve them in a preschool educational institution in relation to the implementation of media education. During the research, the specialists of the Academy of Ukrainian Press (founded in 2001, one of its tasks is the promotion of media education in Ukraine) were interviewed: Oksana V. Volosheniuk – a manager of media education programs of AUP; Yuliia O. Huza – an editor of the "Media Education and Media Literacy" site.

One of the leading methods of the research is modelling – to develop a model of the formation technology of children's media literacy.

In the process of scientific research, empirical methods were used: testing, observation, interviews, experts' assessments, questionnaires, polls to measure the level of media literacy of the experiment participants, as well as pedagogical experiment to verify the efficiency of the technology of media literacy formation of the preschoolers in preschool educational institutions of Ukraine.

Scientific research was carried out in preschool educational institutions of Ukraine in Ternopil (Establishments of Preschool Education No. 3, 6, 19) and Khmelnytskyi (Establishments of Preschool Education No. 28, 29, 46).

3 The peculiarities of the implementation of media education in the preschool educational institution

A comprehensive study on the formation of media literacy of older preschoolers involves the definition of "preschool media education". Often, the very different interpretation of the concepts leads to differences among educators, teachers regarding the forms and methods of media education.

In our opinion, preschool media education is a part of the educational process characterized by a three-component structure (education about media, education through media and for media) that is implemented through the partnership of educators, parents and children, involves the formation of critical, conscious, responsible perception of information to all members in the partnership.

Surely, preschool media education has its own characteristics and is fundamentally different from media education of a student or an adult. This difference lies in the specificity of mental activity, thinking, insufficiency of life experience in preschooler. It is characteristic for a preschooler to thoughtlessly absorb information, which is transmitted from TV screens, computer monitors, radio receivers. Immersing into the informational and virtual world, a child is often not even thinking about the content of what child sees and hears, if they are not prepared for the critical, conscious, responsible perception of information. However, such abilities are difficult to form. There are factors that become an obstacle, but there are those that are favorable.

Thus, the problems will be highlighted at the beginning.

1. According to the periodization of the intellectual development of children by Jean Piaget [40], a child aged 5–6 years (2–7 years old period) is at the stage of preoperative representations, during which intuitive, visual-effective and visual-imagery thinking develops [12]. Psychologists say that "thinking specifically, preschoolers tend to literally understand a lot. Therefore, they often misunderstand the words used in abstract and figurative meanings" [7, p. 15].

Since older preschoolers are characterized by weak abilities to perform abstract mental operations, their thoughts often turn out to be very naïve and unrealistic. Therefore, media literacy formation is problematic.

2. Children have limited life experience, they are easily exposed to, and therefore do not realize when it is worth checking information and whether it is true. The main

criterion still remains: “familiar-strange” (one can believe a familiar person); authoritative and non-authoritative (parents and educators are authoritative, peers, and often somewhat younger or elder brothers and sisters are non-authoritative). To find errors in the media is an unreal task for an average child to perform.

3. Media education involves its implementation through the media (including TV and computer). At the same time, a child should spend little time at the TV, and as far as a computer is concerned, then obviously child should not use it preferably before joining the school. Although it is stated in the “Computer Literacy” educational strategy that a child should be aware of a computer, acquire the basic techniques of its work, adhere to the rules of safe conduct while working with a computer [6].

At the same time, the potential of preschool age for the formation of media literacy should not be underestimated. In this context, the works of Tetiana B. Brailko [7] are of great interest, who found out that cognitive activity and constant cognitive interest as the foundation of future educational motivation in preschool age (5-6 years) develop. All mental operations actively develop in children.

Numerous researches (Aleksandr V. Zaporozhetc [61], Aleksei N. Leontev [25], Anna A. Liublinskaia [29], and others) show that when children are taught with a kind of purpose (even for a short period of time), the mental process changes very quickly. If 5–6-year-old preschoolers are taught to observe and draw conclusions (for example, to differentiate which things float and which sink, under which conditions leaves appear earlier on the cut branches of poplars, to compare the shape of a tool with the conditions of its use), significant changes in their mental development occur.

Children learn to search for and identify the most peculiar features of things and phenomena, to find significant dependencies, relationships between them, and thus logical forms of thinking develop rapidly in children [28, pp. 213–214].

The criticality of mind is characteristic for older preschoolers, that lies in the ability to objectively evaluate their own and others’ opinions, to thoroughly prove and comprehensively check all the hypotheses put forward. Children who have developed this feature tend to check everything thoroughly before doing anything, and if one opinion does not pass the test, they reject it without hesitation and look for a new, more correct, one [7, p. 10].

Studying the work of psychologists on the development of mental activity of preschoolers indicates that the formation of critical thinking can only be started in preschool institution, and it is necessary to continue this work at school age. At the same time it is necessary to implement the pedagogy of partnership (without the help of parents and educators children will not become media literate).

On the basis of study of the works of domestic and foreign authors on the problems of diagnosing the formation of the older preschool children personal qualities, the implementation of media education, analysis of media education competencies of preschool children, identified in Poland in the framework of the “Digital Future” project (Cyfrowa przyszłość, 2010), empirical studies, we presented the ideal result ideal result *high level* of media literacy formation), that we expect to achieve in preschoolers, as a result of media education. An older preschooler with the formed media literacy is aware of the importance of learning about media and education through media and for media,

responds positively to the announcements about media education classes, computer as a media means, is aware of the diversity of media, knows how to receive information, how to distinguish truth from untruth in media messages, how to verify information authenticity, existing media threats; knows what property is that responsibility ensues for assigning the work of another author; critically analyses the media products for children is familiar with a computer, acquires basic techniques of working with it; is able to create media means (pictures, photo galleries, comics), showing creativity, analyzing it adheres to the rules of safe media usage.

Children of a sufficient level of media literacy formation, although not aware of the diversity of media, do not know how to receive information, how to distinguish truth from misrepresentation in media reports, how to verify the authenticity of information, that liability is incurred for the appropriation of the work of another author, but they are aware of the importance of learning about the media and education through media and for media. Their only media product, created independently, is a picture. They are experiencing positive emotions when using media products, critically analyzing with their parents the media, adhere to the rules for the safe use of the media.

Without special educational influence the low level of media literacy prevails in children (misunderstanding of the importance of media education lessons, its benefits to the child, ignorance of the types of media, their functions, the choice of the source of information, ways of verifying the truth of the source, the ways of distinguishing the truth and lies in the media. Such children use mobile phones, tablets, gadgets without permission from parents, experiencing positive emotions when using media products, but do not want to analyze it, or analyze superficially. They do not show creativity while drawing (pictures are the only media work).

Formation of media literacy of older preschoolers is a complex process that involves a certain algorithm of actions for children, educators, parents, the implementation of special forms, methods, media education activities, diagnostic tools for checking whether the result corresponds to the aim. These actions and components are inherent to educational technologies. Thus, the actual task is to reflect the technology of media literacy formation of older preschoolers in the model.

4 The model of media literacy formation technology of older preschoolers in preschool educational institutions of Ukraine

The research on the development and experimental verification of the technology of media literacy formation of the older preschool age children took place during 2017–2018 at the preschool education institutions in Ternopil (No. 3, 16, 18) and Khmelnytsky (No. 28, 29, 46). Totally 384 respondents (200 boys, 184 girls) participated in the experiment, of which 180 children (95 boys and 85 girls) were involved in the formation phase of the experiment: 4 control and 4 experimental groups. The control groups consisted of 88 children (46 boys and 42 girls), experimental – 92 children (49 boys and 43 girls). The characteristics of the participants in the experiment are presented in Table 1.

Table 1. Characteristics of the experiment participants

Name of the experiment stage	Totally respondents		
	Boys	Girls	Total
Confirmatory stage	200	184	384
Formation phase of the experiment	95	85	180
<i>control group</i>	46	42	88
<i>experimental group</i>	49	43	92

Some provisions of the study of media literacy of preschool children were verified at Ternopil Volodymyr Hnatiuk National Pedagogical University at the Department of Pedagogy and Methods of Primary and Preschool Education and Khmelnytskyi Humanitarian Pedagogical Academy at the Department of Preschool Pedagogy, Psychology and Methods of Professional Disciplines.

A number of questions were asked to the children at the stage of the confirmatory experiment. The list of questions and answers to them is given in Table 2.

On the basis of the analysis of answers to the first question “Do you know the word “media”? What do you think it is?” we concluded that the essence of the word is incomprehensible to children. 37 preschoolers out of 384 answered that the media is a TV, other 12 added that this is also a computer. (But not a children’s magazine, book or theater).

Older preschoolers were asked: “If you want to learn about something how would you do it?” However, they could not answer this question without help. And only after the prompts “From the TV show ...”, “From the children's magazine”, the answers were “from the computer”, “from the mobile phone”.

All children are aware that TVs often display distorted information. Especially when it comes to advertising. However, they could not answer how to distinguish truth from untruth.

When asked how to check out whether what happens in life is described in fairy tales, children did not immediately answer that you need to ask your dad, mom, teacher. There was also such an answer: “One has to go with a mother or a father to the forest and check there, for example, whether a fox is talking to a hare”. What is said by a child is vivid confirmation of the fact that children have developed visual and effective thinking. Consequently, no child independently gave the correct answer to this question.

During the experiment, educators were asking: “Should children know that unusual events are reflected in fairy tales? Maybe, it is better for them to grow up with faith in the reality of the fair world”. We were answering that stereotypes formed in childhood often accompany people throughout their lives. For example, in adulthood, many adults are convinced that hedgehogs are wearing apples on their thorns. Such pictures were seen in books and magazines in childhood and remained in their memories as such that correspond to reality. Who defined the age when it comes to finding out the truth?”

During the experiment, we found that there is a direction in the field of media education, which educators give a lot of attention to in preschool education: child safety in the media and during contact with the media. Educators in preschool institutions talk about the threats of the modern digital means for the child’s organism. However,

preschoolers often do not want to perceive and respond positively to such information, share it with their parents, who also prohibit the use of mobile phones, gadgets, tablets, etc. However, such devices increasingly attract children's attention.

Table 2. Survey results of preschoolers during the confirmatory experiment

Content of the question	Number of positive responses and % of general quantity	Number of negative responses and % of general quantity	Note
1. Do you know the word "media"? What do you think it is?	0 0 %	384 100 %	49 (13 %) answered inaccurately, incompletely
2. Do you know what are the ways to learn something, to get information?	0 0 %	384 100 %	(children with the help of tips partially answered the question)
3. Have you ever heard that what is written in newspapers, magazines, books, or shown on TV screens (for example, advertising) is not always true, and the authors of books, articles can make errors?	322 84 %	62 16 %	Only from television screens, mostly advertising
4. Do you know how to check the truth of what is written in children's books, magazines, is shown on TV screens?	0 0 %	384 100 %	
5. How to check if what is described in fairy tales happens in life?	0 0 %	384 100 %	
6. Do you have a mobile phone? For what purpose do you use a mobile phone?	200 52 %	184 48 %	Phones are used for communication and entertainment
7. Do you know that you can use a computer, tablet, mobile phone to watch TV following certain safety rules?	384 100 %	0 0 %	
8. Do you play a mobile phone, do you use a computer, a tablet, watching TV violating security rules?	257 67 %	127 33 %	
9. Do you read children's books, magazines?	384 100 %	0 0 %	
10. Do you love talking with your parents about fairy tales, their acts, what they do well, and what is wrong?	384 100 %	0 0 %	

During the survey, all children answered that they like to read children's books, magazines, watch TV and could not give preference to any single media product. Similarly, everyone answered that they like to talk about fairy-tale heroes, their acts, what they do well and what is wrong, but we have found in individual conversations that there is a need for a deeper critical analysis of such works, for example, whether the reflected events, in children's opinion, are reliable.

Unfortunately, the only media product of preschoolers is the drawings, but they did not set the goal of using them to transmit information. In addition, the children did not create together with their parents or educator's newspapers, comics, as a means of conveying information.

During the experimental study, a group of experts was created: a methodologist of an educational institution, a teacher and one of the parents who distributed the children by levels.

According to the results of the confirmatory experiment, it was found that 246 (64%) children (in control and experimental groups) are at a low level of the media literacy formation; 138 children (36%) – at a sufficient level. Preschoolers of a sufficient level of media literacy had several advantages over low-level children: they followed the rules studied while using the media, showed creativity when creating pictures as a means of transmitting information, and critically analyze the media. However, in order to obtain a high level of media literacy, they lacked knowledge about the variety of media, how to distinguish truth from lie, how to verify the authenticity of information, the inadmissibility of appropriating the work of another author, lacking the ability to create newspapers, comic books and other media products, analyze them, and also realize the necessity of organizing special classes for the formation of such knowledge and skills. The results obtained during the confirmatory experiment determined the relevance of the development and implementation of the technology of media literacy formation.

As under technology, first of all, we understand a system, which has a clear algorithm of actions, we have identified the stages of it: diagnostic-target (setting the goals), integrational (work on the implementation of goals), and analytical (analysis of the results of the experiment on the implementation of technology).

The technology model is depicted in figure. It demonstrated the process of forming media literacy of preschoolers in partnership with parents and educators from the goals to the result, using forms, methods, and means of media education activities (Fig. 1).

One of the main elements of the substantiated technology is the cycle of classes "Grains of Media Education", which is a part of the procedural component.

At the first stage, according to the diagnostics of the formation of media literacy among older preschoolers, the goals of media education were set.

At the second stage – integrational – the integration of actions of all the subjects of the educational process of preschool educational institution took place, the inseparability of the processes of motivation formation to media education, knowledge about media, their functions, a computer as the latest media tool, danger of the modern technical devices; skills of critical thinking and creation of the simplest media together with parents and educators.

At this stage, media education classes were conducted for children: "Where do we get information from?", "Truth and untruth: how to distinguish", "Does Little Red Riding Hood really exist?", "What do you know about the copyright of the authors of books?".

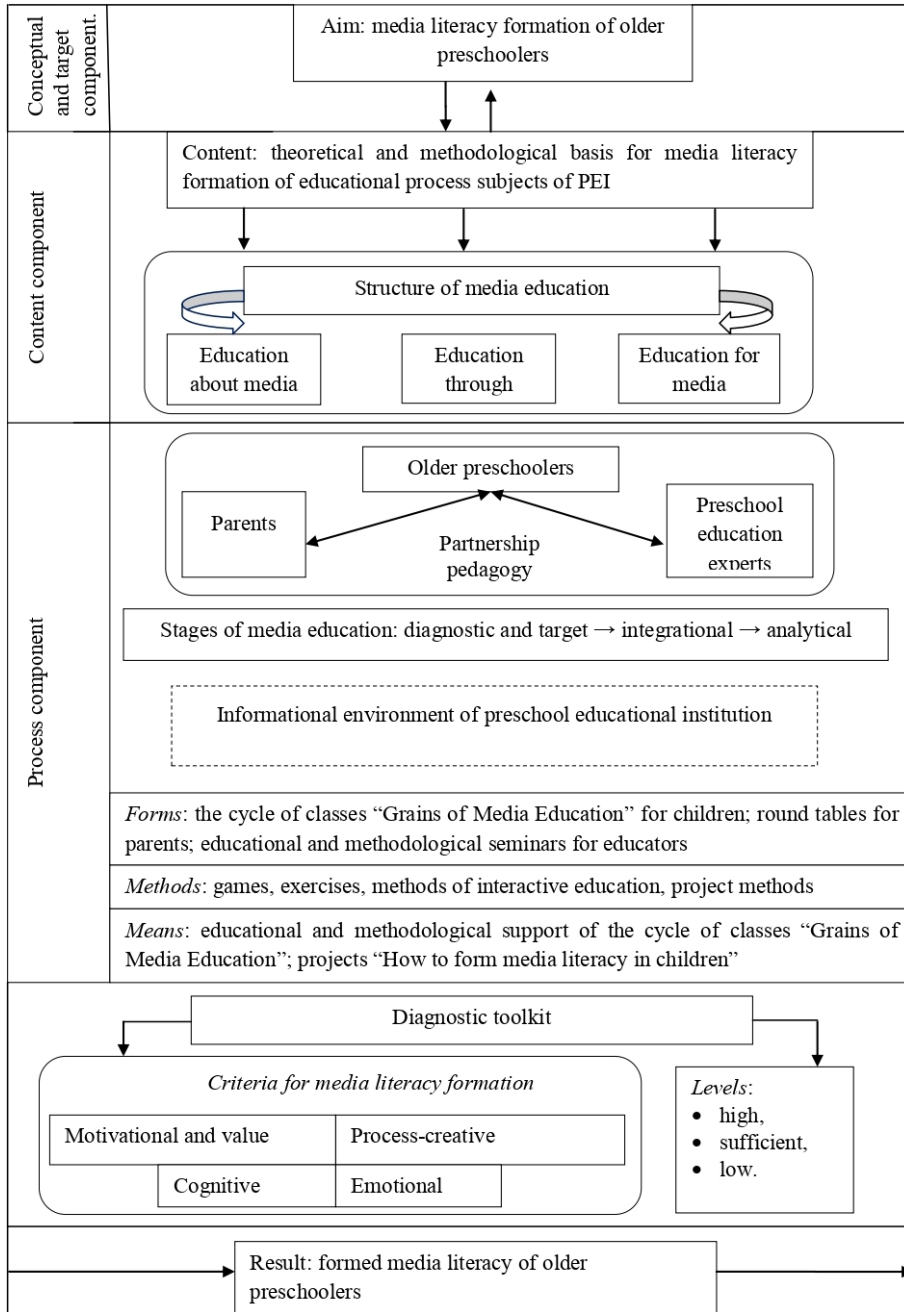


Fig. 1. The technology of media literacy formation in older preschoolers

The organization of the experiment to test the model of technology provided for the methodical training of educators. For this purpose, special methodological guidelines

and recommendations for educators were developed and used, in which both theoretical principles and practical approaches to the organization of the process of media literacy formation of children of the older preschool age in preschool institutions were developed and used. Educators, involved in the experiment, were instructed in detail about the essence of the experimental work in control and experimental groups. Traditional methods and programs were used in control groups used; experimental groups implemented the developed technology model.

At the first stage, the diagnostics of the formation of children's media literacy in the control and experimental groups was carried out. In control groups and in experimental groups, no child was at the high level of media literacy. In control groups, 32 children (36%) out of 88 were at a sufficient level, 56 (64%) – at a low level of media literacy. In the experimental groups – 33 (36%) out of 92 children were at a sufficient level, 59 (64%) – at a low level of media literacy.

During the media education class “Where do we get information from?” preschoolers found out about the essence of media, its types; how beneficial they are to a child, realized that there are many sources of information; learned to choose the source of information according to their needs; tried to find another source of information than from an older person. Since preschoolers are thinking specifically, it is not necessary to demand from them to remember the meaning of the word media.

Therefore, the knowledge of the essence of the concept of media was not tested during the experiment. However, as a result of experimental work, preschoolers have learned that not only TV, but children’s magazines, booklets, theater is also media. Every day a preschooler is receiving a variety of new information. The educators told children that they could learn a lot, not only by asking parents or adults, but also flipping children's magazines, watching television programs. The class helped to find out what are the ways to find information.

The media education class “Truth and Untruth: How to Make a Difference?” was difficult for older preschoolers. Its goal was to get the children to know: not all that we learn is true; therefore, one has to learn to check information. After completing the training, preschoolers developed the ability to formulate simple questions to verify the accuracy of information; knew whom to contact to verify truthfulness of information; critically perceived information.

The media education class “Does Little Red Riding Hood really exist?” was an interesting one for the children. The educators told the children that not everything described in the fairy tale is true. After the class, the children knew that the actors from TV screens or magazines and books with whom they got acquainted could be fictional; heroes of fairy tales are also fictionalized.

Children can often distinguish between truth and untruth in fairy tales. But they do not always succeed. During the class, they become convinced that the author of fairy tales is inspired by the real world, for example, the world of animals. Preschoolers can create their own hero through their imagination.

When the experiment began, we thought that the main problem in implementing media education in preschool is the lack of interesting educational and methodological support. Therefore, by substantiating the technology of media literacy formation, we developed it and named as “Grains of Media Education”.

The name of the methodological support “Grains of Media Education” itself testifies that children develop elementary knowledge and skills that will become the basis for media education in elementary school. We implemented various media education trends, borrowing the experience of Polish pedagogy: using information, relations and communication in the media environment, media language, creative use of media, ethics and values, legal and economic aspects of media use [19].

It has already been pointed out that the problems of media education are challenging not only for children, but also for parents. When reading the methodological development “Grains of Media Education”, parents had possibility to find out what media education is. Parents together with children and educators acted on the principles of pedagogy partnership, using the information environment of a preschool educational institution.

During the experiment, promising ideas of the experience of the children’s media literacy formation in preschool institutions of Ukraine were realized, in particular, the creation of a photo-paper “My Family Tree”, a comic book “One day from my child’s life” [31].

Children not only acted as the authors of comic books, but also as their characters. For example, one of the preschoolers performed as a doctor, and the educator (his father) was taking photos of him during his work. Then a series of comics was created from the photos.

A child, due to the comics, learned to distinguish between two types of text information: language and thought.

One of the comics topics was: “A TV is My Friend”. At the same time, children found out that the TV is not only a medium that transmits information and affects children. It was illustrated as the following: a father calls his child to eat, or to read a book, to wash, but the child had the only answer: “No, let’s watch the cartoons”. In the end, the children saw the result of such behavior: a pale, frustrated face, poor eyesight, headaches, distorted spine. In the picture the child is yelling: “OK, let’s turn off the TV and go to the garden”.

During the experiment, we trained preschoolers to avoid extremes: not to consider everything seen on the TV as untruth, and not to believe everything entirely what they saw or heard in the media; to choose elder people (parents, educators, etc.) to verify the correctness of the information.

At the analytical stage, the media education activities of the subjects of the educational process of the preschool educational institution were analyzed. After the experiment was carried out, the positive changes in the dynamics of levels of media literacy formation were observed: in experimental groups, 15 children (16%) were at a high level of media literacy, 51 children (56%) were at a sufficient level; 26 children (28%) were at a low level of media literacy. In control groups, 36 children (41%) were at a sufficient level, 52 children (59%) had low levels of media literacy.

In the control groups, the distribution of children in the groups, which was recorded during the confirmatory experiment, has almost not changed.

The dynamics of the formation of media literacy levels is presented in Table 3.

Thus, the research has proved the effectiveness of implementing the technology of media literacy formation of older preschool children in preschool institutions.

Table 3. The dynamics of the formation of media literacy levels of the older preschool children

Levels	Control group		Experimental group	
	Before experiment	After experiment	Before experiment	After experiment
High				15 (16%)
Sufficient	32 (36%)	36 (41%)	33 (36%)	51 (56%)
Low	56 (64%)	52 (59%)	59 (64%)	26 (28%)

After the experiment we came to the conclusion that children are more likely to analyze media production with their parents and educators, they are more interested in magazines, booklets, and have desire to create their own newspapers.

Organizing the experiment, we believed that the most difficult task was to develop perfect methodological support, to write a booklet “Grains of Media Education”, as well as to form skills of conscious and critical perception of information.

However, during the experiment, we realized that there were also problems of another kind. First of all, it is the formation of motivation of educators for media education activities with preschoolers. Educators are primarily trying to implement the State Standard for Preschool Education, and also do everything to meet the expectations of parents. Traditionally, parents want their children learn to read, write and count in preschool educational institution. Consequently, it is precisely for this purpose that their main efforts are directed. The obstacle for media education is the high level of groups filling (up to 35 children in a group) in the preschool educational institution. Tired of the difficult work, during which it is necessary to constantly meet the requirements of parents, methodologists, managers, educators often do not want to assume additional responsibilities for the implementation of media education. And after that we look forward to enthusiasts, especially those who were trained, attended the courses at the Academy of Ukrainian Press.

Studies conducted in higher education pedagogical institutions among undergraduate part-time students (more than 90% of them are educators) have shown that they do not know what media and media education are. Only 2% of the polled masters are familiar with the Concept of Media Education Implementation in Ukraine. Approximately 50% of the masters-educators who are part-time students are convinced that media education is education with the help of the state-of-the-art computer technology [56; 59].

All the students we have interviewed were women aged 23 to 46. Studies were conducted only in absentia, since more than 90% of the students of this form of study work as educators and must implement media education. But in reality, they have a very low awareness of media literacy.

Consequently, on the one hand, educators need to increase media literacy, on the other hand – they have insufficient motivation for this. The exception is such a direction of media education as the prevention of threats of the modern computer equipment for a child, which is not surprising, because this is one of the tasks of an educator, defined by the State Standard for Preschool Education.

Thus, the research has shown, on the one hand, the feasibility of implementing a technology for the formation of media literacy of older preschoolers in preschool institutions, on the other – the need for further education of future educators; creating

better working environment for them. However, the fulfillment of the latter task depends on the economic development of Ukraine; of the funds that will be invested in the educational sector.

5 Conclusions

The manipulation of the consumers' media consciousness, the saturation of television programs by the scenes of aggression and violence, the uncontrolled use of modern technical devices by children already at preschool age, determine the relevance of media education, which results in the formation of media literacy (preschooler's awareness of the feasibility of media education classes and their positive attitude towards their realization, knowledge of media diversity, its functions, computer as the latest media tool, awareness of the threats of modern technology, the ability to choose sources of information, create photo papers, comics, drawings, fairy tales, critically, consciously and responsibly perceive information).

The research has proved the necessity of implementing the technology of media literacy formation of older preschoolers, the cycle of classes "Grains of Media Education", which is confirmed by the positive dynamics of the levels of media literacy formation: Before the experiment, 64% of children were at a low level of media literacy, 36% – at a sufficient level. No child was at a high level of the media literacy formation. Due to the implementation of the developed technology, 15% of children achieved a high level of media literacy development (56% were at middle and only 28% – at low levels). The number of children at low levels decreased by 36%. The analysis of the results of experimental work confirms the necessity of raising the level of media literacy of the educators themselves who need to improve the conditions of professional activity.

References

1. Andrzejewska, A.: Dzieci i młodzież w sieci zagrożeń realnych i wirtualnych : aspekty teoretyczne i empiryczne. Difin, Warszawa (2014)
2. Ashytok, N.: Formuvannia moralno-tsinnisnykh orientatsii u ditei doshkilnoho viku na materialii dytiachoi literatury (Formation of moral-value orientations in children of preschool age on the material of children's literature). Liudynoznavchi studii, Seriiia "Pedahohika" 5/37, 5–11 (2017)
3. Bazalgette, C., Bevort, E., Savino, J. (eds.): New directions: Media education worldwide. British Film Institute, London (1992)
4. Bednarek, J.: Multimedialne kształcenie ustawiczne nauczycieli: teoria, badania, praktyka. Wydawnictwo Wyższej Szkoły Pedagogicznej TWP, Warszawa (2010)
5. Bezpieczne media: poradnik dla rodziców. Orange. <https://www.orange.pl/ocp-http/PL/Binary2/1997625/4091136245.pdf> (2014). Accessed 23 Jun 2018
6. Bohush, A.M., Bielienska, H.V., Bohinich, O.L., Havrysh, N.V., Dolynna, O.P., Ilchenko, T.S., Kovalenko, O.V., Lysenko, H.M., Mashovets, M.A., Nyzkovska, O.V., Panasiuk, T.V., Pirozhenko, T.O., Ponimanska, T.I., Sidielnikova, O.D., Shevchuk, A.S., Yakymenko, L.Yu.: Bazovyi komponent doshkilnoi osvity (Basic component of preschool

- education). Vydavnytstvo, Kyiv. <https://mon.gov.ua/storage/app/media/doshkilna/bazovij-komponent-doshkilnoyi-osviti-na-sajt-ostatochnij.pdf> (2012). Accessed 17 Aug 2018
7. Braillko, T.B. (ed.): *Osoblyvosti myslennia starshykh doshkilnykiv* (Peculiarities of thinking of senior preschoolers). Ranok, Kharkiv (2010)
 8. Brzyszc, E.: *Kształcenie kompetencji medialnych u dzieci w wieku przedszkolnym*. Państwo i Społeczeństwo 17(3), 151–159 (2017)
 9. Chorna, L.H.: *Psyholohichni osoblyvosti vplyvu suchasnoho telebachennia na proiavy tvorchoho potentsialu ditei* (Psychological features of the influence of modern television on the manifestations of children's creative potential). *Obdarovana dytyna* 9, 56–63 (2007)
 10. Danyliak, R.Z.: *Idei moralnoho vykhovannia molodshykh shkoliariv na storinkakh vitchyznianoj dytiachoi periodyky* (kinets khkh – pochatok khkhi stolittia) (The ideas of moral education of primary school pupils on the pages of the national children's periodicals (late 20th – early 21st centuries)). Dissertation, Drohobych State Pedagogical University named after Ivan Franko (2017)
 11. Dorosh, M., Tolokolnikova, K.: *Shcho take eksperyment iz mediaosvity v Ukraini: 15 zapytan ta vidpovidei* (What is experiment in media-education in Ukraine: 15 questions and answers). MediaSapiens. https://ms.detector.media/mediaprosvita/mediaosvita/scho_take_eksperiment_iz_mediaosviti_v_ukraini_15_zapitan_ta_vidpovidey (2017). Accessed 21 Mar 2018
 12. Drzewiecki, P.: *Warsztaty edukacji medialnej dla dzieci w wieku przedszkolnym*. Otwock – Warszawa. https://issuu.com/drzewiecki/docs/warsztaty_em_dla_przedszkola (2013). Accessed 21 Mar 2018
 13. Fedorov, A.: *On Media Education*. ICOS UNESCO IFAP, Moscow (2008)
 14. Feilitzen, C. von: *Influence of Media Violence*. Nordicom, Goteborg (2001)
 15. Gajda, J.: *Media w edukacji*. Oficyna Wydawnicza Impuls, Kraków (2004)
 16. Giroux, H.A.: *Channel Surfing: Racism, the Media, and the Destruction of Today's Youth*. St. Martin's Press, New York (1998)
 17. Ivanov, V.F., Volosheniuk, O.V., Dziuba, D.Yu., Dubrovskiy, V.F., Ivanova, T.V., Kulchynska, L.M., Naidonova, L.A., Nehrieieva, I.I., Novikova, L.Ye., Pashkova, O.Y., Pocheptsov, H.H., Fedorov, O.V., Khomenok, O.S.: *Mediaosvita ta mediahramotnist* (Media education and media literacy). Tsentr Vilnoi Presy, Kyiv (2014)
 18. Kachura, O.: *Intehratsiia mediaosvity v osvitnii protses zakladu doshkilnoi osvity* (Integration of media-education into the educational process of preschool educational establishments). *Vykhovatel-metodyst doshkilnogo zakladu* 12, 41–46 (2017)
 19. Khomych, O.O.: *Osoblyvosti vykorystannia zasobiv media-osvity v navchalno-vykhovnomu protsesi doshkilnykh navchalnykh zakladiv* (Peculiarities of using means of media-education in educational process of preschool educational institutions). *Problemy suchasnoi pedahohichnoi osvity* 42(3), 216–221 (2014)
 20. Kondratenko, R.V.: *Vykhovannia kreatyvnosti v starshykh doshkilnykiv u protsesi mediaosvity* (Education of Creativity Older Preschoolers in Media Education). *Visnyk Luhanskoho natsionalnoho universytetu imeni Tarasa Shevchenka, Pedahohichni nauky* 13(1), 115–120 (2013)
 21. *Kontseptsiiia vprovadzhennia mediaosvity v Ukraini (nova redaktsiia)* (Concept of Implementation of Media Education in Ukraine (new edition)). https://ms.detector.media/mediaprosvita/mediaosvita/kontseptsiya_vprovadzhennya_mediaosviti_v_ukraini_nova_redaktsiya (2016). Accessed 17 Aug 2018
 22. Krutiy, K.L.: *Mediadydaktychni osoblyvosti vykorystannia multfilmiv yak zasobu navchannia movy i rozvytku zviaznoho movlennia doshkilnykiv* (Media-didactical peculiarities of animated cartoons usage for language learning and for development of

- speech ability of preschool children). *Naukovi zapysky Ternopil'skoho natsionalnoho pedahohichnoho universytetu imeni Volodymyra Hnatiuka, Serii: Pedahohika* 3, 85–90 (2013)
23. Kubey, R. (ed.): *Media Literacy in the Information Age*. Transaction Publishers, New Brunswick & London (1997)
 24. Lekcje :: Edukacja medialna. <https://edukacjamedialna.edu.pl/lekcje> (2018). Accessed 21 Dec 2018
 25. Leontev, A.N.: *Problemy razvitiia psikhiki (Problems of the development of the psyche)*. Mysl, Moscow (1965)
 26. Lepa, A.: *Pedagogika mass mediów*. Archidiecezjalne Wydawnictwo Łódzkie, Łódź (1998)
 27. Lewowicki, T., Siemieniecki, B. (eds.): *Nowe media w edukacji*. Wydawnictwo Adam Marszałek, Toruń (2012)
 28. Liubchenko, I.: Rozvytok lohichnoho myslennia u starshykh doshkilnykiv yak zaporuka uspishnoho navchannia i vykhovannia (Development of logical thinking of senior preschoolers as a precondition of successful learning and upbringing). In: *Zbirnyk naukovykh prats, part 3*, pp. 209–214. https://library.udpu.edu.ua/library_files/zbirnyk_nayk_praz/2014/3/27.pdf (2014)
 29. Liublinskaia, A.A.: *Uchiteliu o psikhologii mladshogo shkolnika (Teacher on the psychology of a younger student)*. Prosveshchenie, Moscow (1977)
 30. Lyzanchuk, V.V.: *Radiozhurnalistyka: zasady funktsionuvannia (Radio journalism: function basics)*. PAIS, Lviv (2000)
 31. Manucharian, D.: *Yak navchyty mediahramotnosti doshkilniat (How to teach media-literacy preschoolers)*. MediaSapiens. http://ms.detector.media/mediaprosvita/mediaosvita/yak_navchiti_mediahramotnosti_doshkilnyat (2016). Accessed 17 Aug 2018
 32. Masterman, L., Mariet, F.: *Media Education in 1990s' Europe*. Council of Europe Press, Strasbourg (1994)
 33. Ministry of Education and Science of Ukraine: *Pro provedennia vseukrainskoho eksperymentu za temoiu "Standartyzatsiia naskriznoi sotsialno-psykholohichnoi modeli masovoho vprovadzhennia mediaosvity u vitchyznianu pedahohichnu praktyku" na bazi navchalnykh zakladiv Ukrainy (On conducting an all-Ukrainian experiment on the topic "Standardization of cross-cutting social and psychological model of mass introduction of media education in Ukrainian pedagogical practice" on the basis of educational institutions of Ukraine)*. <http://mediaosvita.org.ua/book/nakaz-mon-pro-provedennya-vseukrayinskogo-eksperymentu> (2017). Accessed 21 Mar 2018
 34. Myshchysyn, I., Trokhaniak, N.: *Mediaosvita yak zasib formuvannia mediakultury suchasnoi molodi (Media education as a means of youth media culture formation)*. *Visnyk Lviv Univ.* 21(1), 161–166 (2006)
 35. Nevmerzhytska, O.: *Vykhovannia tvorchoi osobystosti doshkilnyka zasobamy mediaosvity (Creative education of preschool children's personalities by means of media education)*. *Aktualni pytannia humanitarnykh nauk* 16, 365–370 (2016)
 36. Nosachenko, I.M.: *Mediaosvita yak napriam navchalno-vykhovnoho protsessu v shkoli (Media education as a component of educational process)*. *Naukovi zapysky Ternopil'skoho natsionalnoho pedahohichnoho universytetu imeni Volodymyra Hnatiuka, Serii: Pedahohika* 3, 102–108 (2013)
 37. Olynyuk, H.M.: *Vykorystannia mediatekhnolohii v protsesi teatralno-ihrovoi diialnosti z ditmy doshkilnoho viku (The Use of in the Process of Theatrical in Playing Activity with the Children of Preschool Age)*. *Visnyk Luhanskoho natsionalnoho universytetu imeni Tarasa Shevchenka, Pedahohichni nauky* 13(1), 120–128 (2013)

38. Onkovych, H.V.: Mediaosvita yak intelektualno-komunikatyvna merezha (Media education as an intellectually communicative network). *Vyshcha osvita Ukrainy* 3, 130–137 (2008)
39. Orshanskyi, L.V.: Mediaosvita: retrospektyva rozvytku ta suchasni problemy (Media education: a retrospective of development and contemporary problems). *Naukovyi visnyk Kremenetskoï oblasnoi humanitarno-pedahohichnoi akademii imeni Tarasa Shevchenka, Serii: Pedahohika* 5, 177–183 (2015)
40. Piaget, J.: *Intellectual evolution from adolescence to adulthood*. Cambridge University Press, Cambridge (1977)
41. Piette, J., Giroux, L.: The theoretical foundations of media education programs. In: Kubey, R. (ed.) *Media Literacy in the Information Age*, pp. 89–134. Transaction Publishers, New Brunswick & London (1997)
42. Poiasok, T.B.: Intehratsiia media v osvitnii protses: problemy i perspektyvy (Integration of media into educational process: problems and prospects). *Pedahohichni protses: teoriia i praktyka* 1, 69–73 (2014)
43. Polievikova, O.B.: Spetsyfika vprovadzhennia doshkilnoi mediaosvity na Khersonshchyni (The peculiarities of implementing preschool media education in Kherson region). *Naukovi zapysky Ternopilskoho natsionalnoho pedahohichnoho universytetu imeni Volodymyra Hnatiuka, Serii: Pedahohika* 3, 108–113 (2013)
44. Popova, D.A.: Formuvannia zahalnoliudskykh tsinnosti u starshoklasnykiv zasobamy masovoi informatsii v suchasnykh umovakh (Formation of Senior Pupils' Universal Values by Means of Mass Media in Modern Conditions). Dissertation, The Institute of upbringing problems of The Academy of Pedagogical Science Ukraine (2002)
45. Potter, W.J.: *Theory of Media Literacy: A Cognitive Approach*. SAGE Publications, Thousand Oaks (2004). doi:10.4135/9781483328881
46. Semeniako, Yu.: Sotsialno-pedahohichni problemy suchasnosti: mediabezpeka ditei doshkilnoho viku (Socio-pedagogical problems of the modernity: media security of preschool children). *Osvitnii prostir Ukrainy* 8, 137–142 (2016)
47. Shandruk, S.I.: Vykhovannia tsinnisnykh oriantatsii starshoklasnykiv zasobamy masovoi informatsii v suchasnykh umovakh (Upbringing of value orientations of high school students by mass media in modern conditions). *Naukovi zapysky KDPU, Serii: Pedahohichni nauky* 103, 353–358 (2012)
48. Shcherban, P.M.: *Natsionalne vykhovannia v simi: dlia batkiv, uchyteliv, vykhovateliv*. Boryviter, Kyiv (2000)
49. Shumaieva, S.: Mediaosvita: istorychni ta kulturolohichni aspekty rozvytku (Media education: historical and cultural aspects of development). *Ridna shkola* 5, 70–72 (2003)
50. Siemieniecka, D.: Twórczość i media – obszary oddziaływań. In: Siemieniecka, D., Siemińska-Łosko, A. (eds.): *Wybrane aspekty technologii informacyjnej w edukacji*, pp. 197–208. Wydawnictwo Adam Marszałek, Toruń (2007)
51. Signorielli, N., Gerbner, G.: *Violence and Terror in the Mass Media: An Annotated Bibliography*. Greenwood Press, Westport (1988)
52. Sotska, O.P.: Peredumovy realizatsii media-prostoru suchasnoho dovkillia (Prerequisites for the realization of the media space of the modern environment). *Visnyk Luhanskoho natsionalnoho universytetu imeni Tarasa Shevchenka, Pedahohichni nauky* 13(1), 154–164 (2013)
53. Sukhomlinsky, V.A.: *V. Sukhomlinsky on education*. Progress Publishers, Moscow (1977)
54. Tanaś, M.: *Pedagogika@ środki informatyczne i media*. Oficyna Wydawnicza Impuls, Kraków (2004)

55. Temekh, N.D.: Ukrainske telebachennia i problemy formuvannia dukhovnosti molodi (Ukrainian television and the problems of youth spirituality formation). Dissertation, Ivan Franko National University of Lviv (2005)
56. Tereshchuk, H.V., Kuzma, I.I., Yankovych, O.I., Falfushynska, H.I.: The formation of a successful personality of a pupil in Ukrainian primary school during media education implementation. In: CEUR Workshop Proceedings (CEUR-WS.org) (2019, in press)
57. Vachevskiy, M.V., Skotnyi, V.H.: Marketynh v sferakh posluh (Marketing in the spheres of services). Tsentr navchalnoi literatury, Kyiv (2004)
58. Voloshyna, A.K., Voloshyna, K.O.: Formuvannia mediakompetentnosti vykladacha zasobamy audiovizualnykh tekhnolohii (Formation of media competence of the teacher by means of audiovisual technologies). Aktualni problemy slovianskoi filolohii, Serii: Lihvistyka i literaturoznavstvo **23**(1), 510–517 (2010)
59. Yankovych, O.I., Binytska, K.M., Ocheretnyi, V.O., Kuzma, I.I.: Preparation of the future specialists at universities of Ukraine And poland to realization of media education for pre-schoolers. Information Technologies and Learning Tools **67**(5), 264–276 (2018). doi:10.33407/itlt.v67i5.2323
60. Zaitseva, A.: Ahresiia na dytiachomu telebachenni: poshuk rozviazannia problemy (Aggression on children's television: the search for a solution to the problem). Mystetstvoznavstvo Ukrainy **12**, 349–353 (2012)
61. Zaporozhetc, A.V.: O psikhologii detei rannego i doskolnogo vozrasta (On the psychology of young children and preschool children). Moscow (1971)