

Digital storytelling in adult education: barriers and ways to overcome them

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Abstract. In the modern digital globalized world, it is becoming more and more important to train educators in practical application of new tools and technologies, such as digital storytelling. The article substantiates the benefits of digital storytelling and its connection to educational standards; and analyzes the factors that hinder its use. According to the survey of teaching staff and methodologists of different professions during retraining courses, only a quarter of respondents use or have used this method, and about 72% of respondents are ready to consider it. A 3-factor model on possible barriers that impede the using of digital storytelling in education was developed on the basis of the empirical data with the help of a factor analysis tool. The first factor was related to the lack of necessary resources, the second one – to resistance to change, the third one – to the lack of time and lack of technical and methodological support from the educational institution. Possible ways to overcome these barriers are identified. The article describes the structure and content of the special course for educators "Digital Storytelling in Adult Education", aimed at providing methodological support to educators on digital storytelling and its use by discussing the positives, risks, techniques, tools and services, providing experience in creating and sharing digital stories. The content of the stages of involvement of pedagogical staff in the educational practice (orientation, acceptance, evaluation, innovation and institutionalization) is substantiated. The article describes the developed methodological support of the special course: the program of the special course, lectures-presentations on the basics of digital storytelling, examples of practical tasks for implementation and discussion. The article analyzes the ways to use the fragments of massive open online courses on digital storytelling in order to implement blended learning of teaching staff.

Keywords: digital storytelling, adult education, barriers, factor analysis, professional development

1. Introduction

Digital storytelling technology is one of the promising areas of information and communication technologies in education. It is consistent with the educational standards of many countries, in particular with the International Society for Technology in Education (ISTE) standards [10] on the formation of students and teachers of creativity and innovation, communication and cooperation, research and information literacy, critical thinking, problem solving, digital citizens characteristics, free operation of technology and content. ISTE standards are the basis for students, teachers, administrators, trainers and educational technologist to rethink education and create innovative educational environments; help educators and educational leaders around

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the world change educational institutions and classrooms for learning in the digital age. Digital storytelling uses modern devices and software, as well as Internet services to tell interesting digital stories. The technology is in line with the standards of the New Ukrainian School, especially in the field of information technology, which is related to communication and cooperation, digital creativity, the use of digital devices, etc. [5]. The popularity and prospects of storytelling technology are also evidenced by numerous mass open online courses offered by well-known global providers [15, 18]. Here are the names of some courses: “Powerful tools for teaching and learning: storytelling”; “Storytelling for change”; “Narrative worlds, new technologies, global audiences”; “Leadership, communication for maximum impact: storytelling”.

The theory of stories is considered in detail by Campbell [4], the essence of digital stories – Hartley and McWilliam [8] and others.

The work of Bissell and Korteweg [2], Di Blas, Paolini and Sabiescu [6], Mulholland and Collins [13], Ranieri and Bruni [19], Rutta et al. [24], Tymchuk [26] are devoted to the use of digital narratives in education.

Features of the use of storytelling technology in adult education have been studied by experts in the following aspects: Caminotti and Gray [3] – the effectiveness of the method; Hausknecht, Vanchu-Orosco and Kaufman [9] – features of assessment in master classes; Paull [16] – expanding opportunities for self-perception and social connections through storytelling in adult learning.

The University of Houston College of Education website offers broad support to educators on the use of digital storytelling in education, which includes links to articles, a wide range of examples, research, projects, and teaching materials. The first version of the site was created by Robin [21, 22] in 2004, the new – in 2018.

An interesting attempt to compare storytelling and serious storytelling is the work of the Lugmayr et al. [12]. They define serious stories as “a story outside of entertainment, where the story develops as a sequence of patterns, strikes with its quality, relates to a serious context and is a thoughtful process” [12, p. 20]. The authors emphasize that if you use storytelling in accordance with Bloom’s learning outcomes or the nine steps of Ganier’s teaching [7], this approach helps to improve learning. Digital storytelling can also be used to support the design of e-learning applications and the development of educational programs [12]. Researchers compare storytelling and serious storytelling by some criteria and features. As can be seen (figure 1), they distinguish 5 criteria of storytelling and 8 criteria of severity, as well as distinguish 4 properties of storytelling and 15 properties of serious storytelling.

So, we see that scientists note the powerful potential of digital storytelling technology in education. At the same time, it is possible to state insufficient involvement of teachers in the use of such technology. A survey of research and teaching staff of higher education institutions in different cities of Ukraine and methodologists of various specialties, conducted during retraining courses at the University of Educational Management (Kyiv, Ukraine) in 2017–2018, showed that only about a quarter of respondents have practiced this method in the past and the present. Thus, there is a contradiction between the vast possibilities of modern computer tools, Internet services for creating digital stories and the lack of their use, especially in adult education.

The purpose of the article: to study the barriers to the use of digital storytelling in education, to reveal the content and structure of a special course in the system of professional development of researchers and methodologists of various specialties in the use of digital storytelling.

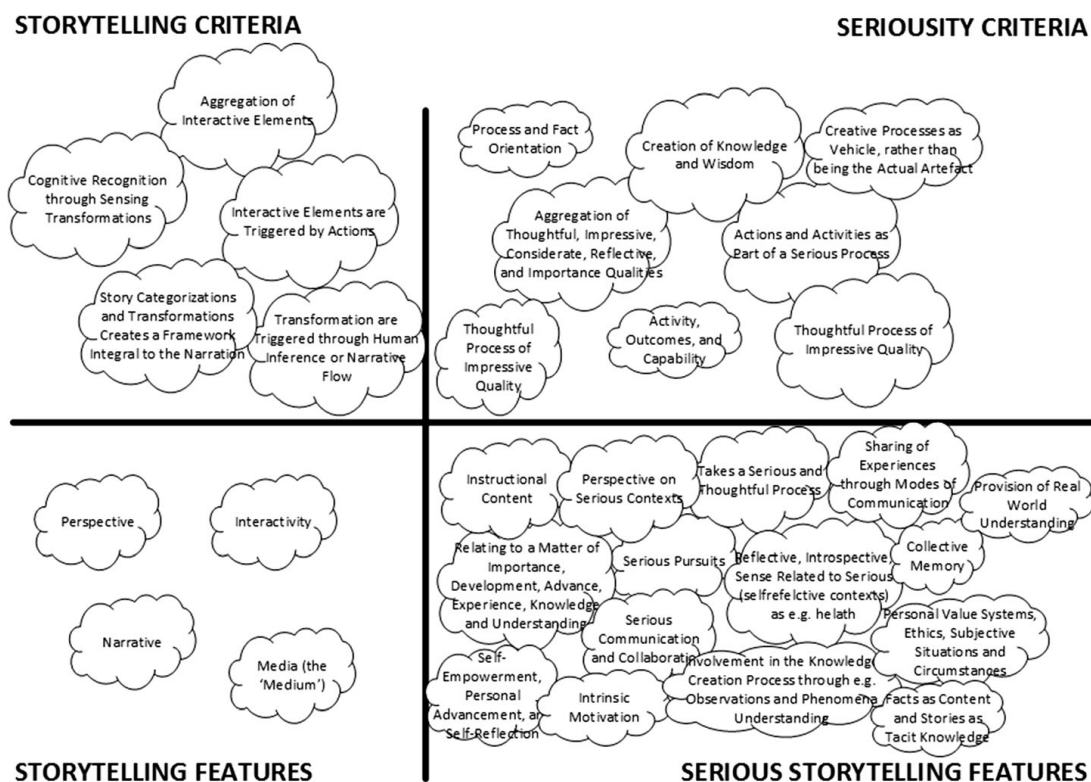


Figure 1: Storytelling and serious storytelling: criteria and properties [12].

2. Research results

Analysis of scientific sources [20] showed that pedagogues in different countries who have used digital storytelling are quite optimistic about this method and believe that it can improve the educational process as follows (figure 2):

- allows educators to build their own understanding or experience in the field of content;
- promotes joint activities and work in groups;
- promotes the organization of discussions in the classroom and the audience;
- helps to form skills of problem solving and critical thinking;
- helps learners to understand complex ideas;
- promotes acquaintance with new content.

It is important to remember that digital storytelling in education is based on the interaction of three components: pedagogy, technology and content.

Computers with multimedia devices and large memory are the hardware basis of storytelling; audio devices: high-quality microphones and sound recorders, devices for creating images and video (digital cameras and scanners). The software includes the ability to create and edit

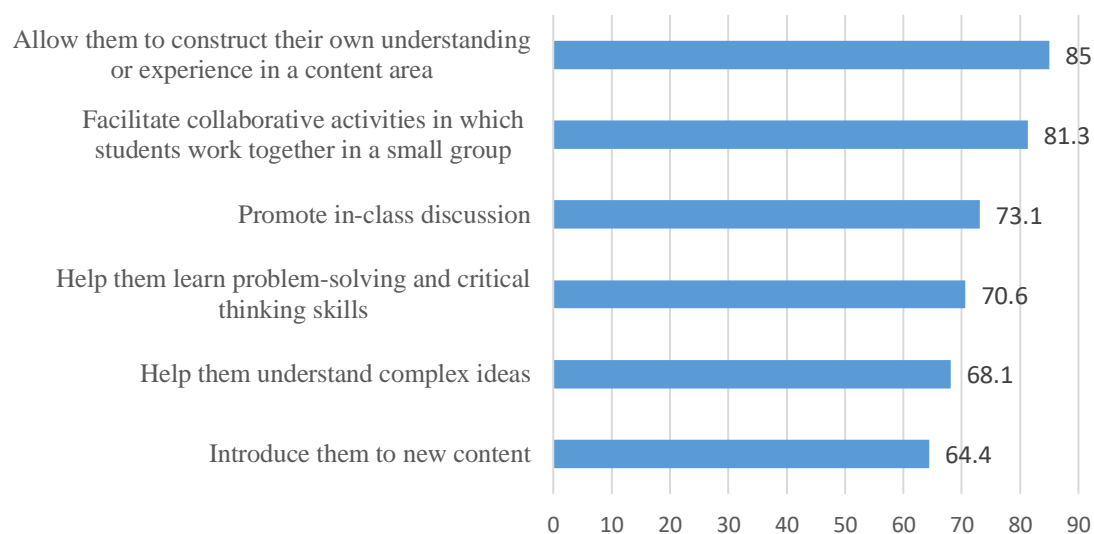


Figure 2: How storytelling can improve the educational process, according to teachers who used it [20].

pictures, sounds, videos. The set of skills of a history author includes: research and writing skills, organizational and presentation skills, problem-solving and assessment skills; and 21st century skills, including cultural, informational, visual and media literacy. Involvement of students and teachers is through personalization and construction by them their own meanings during creating a history.

Therefore, when creating digital stories, teachers should be familiar with modern devices and software, the latest cloud services, have skills in planning and organizing history, attracting students.

A survey of research and teaching staff of higher education institutions of different cities of Ukraine and methodologists of various specialties, conducted during retraining courses at the University of Educational Management in 2017–2018, showed that only about a quarter of respondents (26%) have practiced this method in the past or now; 72.5% have not used so far, but are ready to consider such a possibility. Only about 1.5% of respondents stated that they would not use this method (figure 3).

In search of barriers that prevent educators from integrating digital storytelling into the educational process, we turned to scientific sources [1, 11, 23, 25, 27]. From the French barrier (fr. Barrières) – is an obstacle, a stage. First, barriers to the use of storytelling, in our view, are closely linked to barriers to the use of ICTs in general.

Bingimlas [1] identifies the following common barriers to successful integration of ICT in teaching and learning: lack of computers, quality software, lack of teacher time, technical problems, poor funding, distrust of the method, unprepared teachers, resistance to change, insufficient administrative support, weak computer skills, unsuitability for the curriculum, difficulties with the schedule, insufficient number of trainings, lack of skills to integrate ICT into education.

According to Watson [27], inadequate levels of professional development can also be a barrier

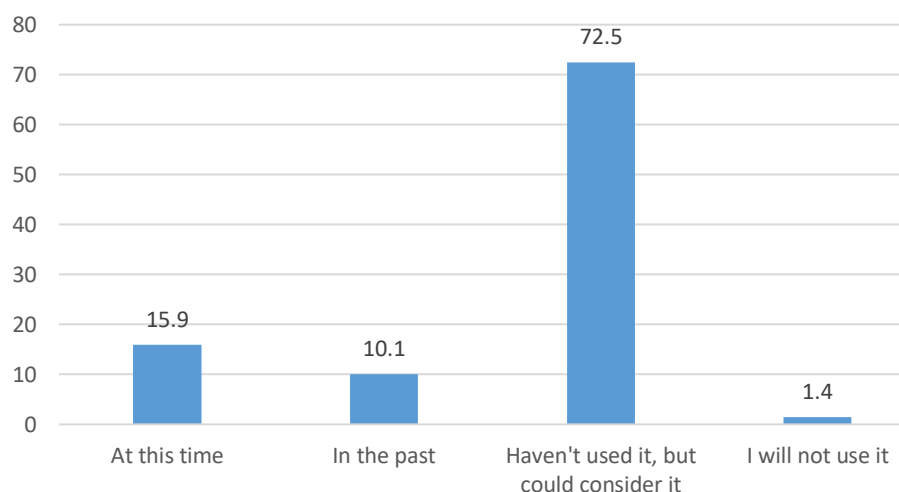


Figure 3: Distribution of respondents' answers to the question: "Do you use the storytelling method?", in % ($n = 69$).

to the use of information technologies in general and digital storytelling in particular. Taylor [25] proposes a strategy for attracting a critical mass of employees to technologically complementary educational practices and identifies 5 necessary stages: orientation, acceptance, evaluation, innovation and institutionalization for professional development programs [25, p. 275-276].

Let's look at these steps in more detail, with a focus on digital storytelling.

At the *orientation* stage, educators consider approaches to integrating storytelling technology into teaching and learning that meet current educational expectations, technology availability, and the requirements of the educational institution's program and the subject they teach.

During the *acceptance* stage, educators adapt current intentions and practices to teaching and learning using digital story technology in a high-tech learning environment.

They then evaluate these practices (*evaluation* stage).

In the next stage, *innovation*, educators redevelop their practice based on their own experience in digital story technology in the high-tech environment of the educational institution and study the reactions of students to them.

At the *institutionalization* stage, educators and managers develop strategies to ensure that new teaching and learning methods are maintained in the medium and long term and thus become "traditional".

The first three stages (orientation, acceptance, evaluation) – we associate with classes in retraining courses in the first stage, which is full-time; the fourth stage (innovation) – with the intercourse period; the fifth stage (institutionalization) – partly with the third stage, which is also full-time, and the defense of graduation theses. We agree with Taylor [25] that each of these stages requires different approaches to professional development and should include time for reflection, special training, discussion, consideration of alternative practices, and conversion of accepted practices.

It is also necessary to take into account the different views on change from different teachers. Rogers [23] identifies 5 types of personalities for acceptance of change. At the forefront of

change are innovators, who make up about 2.5% of the population. These people are eager for change and have a desire for change, often reckless, dangerous and risky. The next group is those who accept innovation early (13.5%), they are more socially acceptable than innovators, and are leaders of public opinion. Factors that contribute to an early innovator include continuing education, extensive communication networks, a high level of literacy, extensive contact with agents of change, influence on media channels, active search for information about innovation and leadership. The third group, the early majority (34%), follows the early supporters. The fourth group is the late majority (34%), which is more skeptical and often adopts specific innovations due to economic or network pressures. The latter group is the backward, or traditionalists (16%), who have traditional views and can actually embrace innovation after it has ceased to be innovation.

We proposed a survey on the factors that constrain the use of digital storytelling, research and teaching staff and methodologists, based on research on the use of games and simulations in education [11]. The questionnaire included 10 statements that were assessed by respondents. Answer options ranged from 1 – agree completely to 5 – strongly disagree.

We used factor analysis to analyze the main factors that hinder the use of digital storytelling. This method allows you to find the most closely related groups of features, which are new complex latent variables called factors.

Kaiser-Meyer-Olkin (KMO) test and the Bartlett’s sphericity test (table 1) show that factor analysis is suitable for these data. Thus, the value of KMO statistics is equal to 0.557, which exceeds 0.5; the approximate value of statistics χ^2 with 45 degrees of freedom is 170.378 and is significant at $p < 0.001$.

Table 1
Kaiser-Meyer-Olkin test and Bartlett’ sphericity test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.557	
Bartlett’s Test of Sphericity	Approx. Chi-Square	170.378
	df	45
	Sig.	0.000

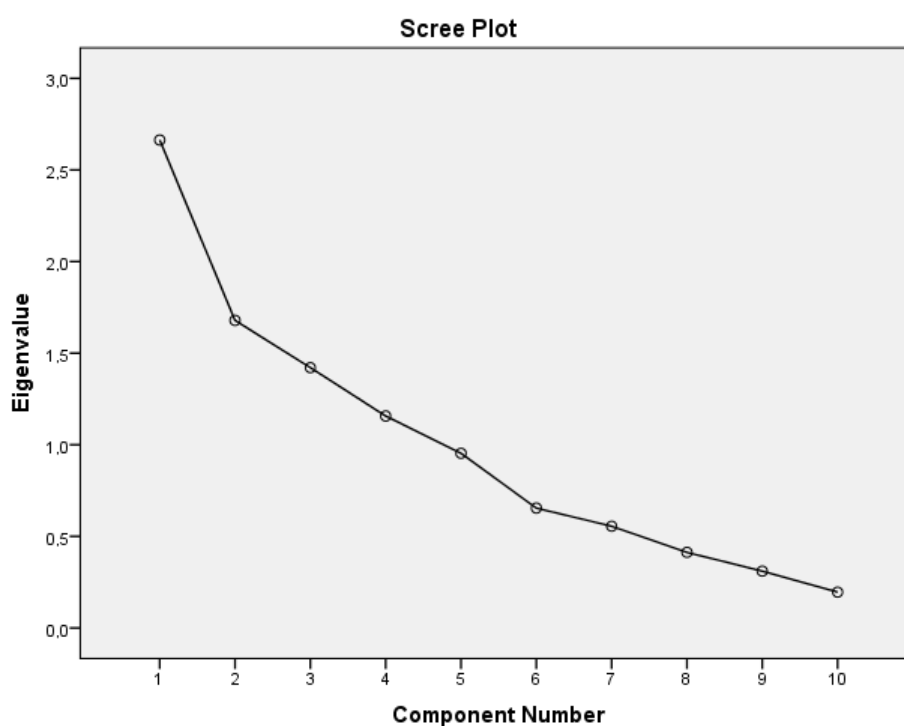
We used the principal components method and the varimax rotation method. The calculations were performed using SPSS 20. The result of the factor analysis is the factor matrix, or factor load matrix, shown in table 2. Each factor is represented by a column of the table, and each variable – a row. The intersection of a column and a row shows the factor loads of this variable on a certain factor.

Having obtained the factor matrix, we have to decide which factors should be left for further interpretation. As a rule, the factors that explain at least 5% of data variability and absolute values of variance of which are not less than one (eigenvalues) are left. In figure 4 shows the “scree” diagram, which shows that the optimal criteria for this criterion will be 3, 4, or 5 factor models. In table 3 we see 4 eigenvalues that exceed 1, ie according to this criterion we have to leave 4 factors. These 4 factors explain 68.8% of the variability of the data, but we focused on the 3-factor model, which explains about 58% of the variance of the data, but has the potential for meaningful interpretation.

Table 2

Rotated matrix of factor loads.

Variables	Components		
	1	2	3
I do not have suitable methods and products	0.751		
Resources are limited to use new methods	0.750		
There are no suitable tools for my subject	0.714		
These methods are not suitable for my subject		0.709	
Students (listeners) will not respond well to these methods		0.702	
I am satisfied with the methods I use		0.686	
Teaching innovations have a low priority in the educational institution			0.827
I feel that using these methods is risky			0.675
Support, technical or administrative, is limited			0.634
I have limited time to develop myself as a teacher			0.335

**Figure 4:** The scree plot diagram.

Let's try to give an interpretation of the factors.

As we can see (table 2), the *first factor* with high factor loads includes the following variables: "I do not have suitable methods and products", "Resources are limited to use new methods", "There are no suitable means for my subject". That is, the first factor can be attributed to the lack of funds and resources.

Table 3
Percentage of variance due to factors

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.680	26.800	26.800	2.063	20.631	20.631
2	1.751	17.507	44.307	1.910	19.097	39.728
3	1.342	13.425	57.732	1.800	18.003	57.732
4	1.108	11.078	68.810			
5	0.984	9.841	78.651			
6	0.648	6.477	85.129			
7	0.593	5.929	91.057			
8	0.401	4.013	95.070			
9	0.308	3.076	98.146			
10	0.185	1.854	100.000			

The *second factor* is directly related to the following variables: “These methods are not suitable for my subject”, “Students will not respond well to these methods”, “I am satisfied with the methods I use”. Thus, the second factor is interpreted as unwillingness to change methods, resistance to change.

The *third factor* is burdened by the variables: “Teaching innovation has a low priority in the educational institution”, “I feel that the use of these methods is associated with risk”, “Support, technical or administrative, limited”, “I have limited time to develop myself as teacher”. We interpret the third factor as the lack of support from the educational institution (technical, training, etc.) and lack of time.

The percentage of data variability explained by each of the three factors is presented in figure 5. As we can see, the first factor explains 20.6% of data variability, the second one – 19.1%, the third one – 18.0%.

However, the analysis of the frequency distribution (table 4) for barriers allows us to draw the following conclusions:

1. 40.6% of respondents agreed with the statement “I have limited time to develop myself as a teacher”, and 36.2% – no.
2. 14.4% of respondents agreed to the statement that “The use of these methods is associated with risk” to some extent, 71% disagreed in full or in part.
3. 26.1% of respondents believe that they do not have suitable methods and products, 43.4% – have.
4. 50.7% of respondents are satisfied with the methods they use, compared to 26.1% of those who are dissatisfied with these methods.
5. 37.6% believe that resources are limited; 39.1% disagree with this.
6. 20.2% agree that there are no suitable means, almost twice the percentage of respondents, namely 52.1%, disagree.
7. 17.6% of respondents believe that these methods are not suitable for their subject, 61.8% – do not agree with it.

8. Only 10.3% agree that students will not respond well to these methods, while 73.6% disagree.
9. 17.3% believe that innovations in teaching have a low priority, 69.5% – do not agree with this.
10. 42.6% of respondents believe that support is limited, compared to 32.8%.

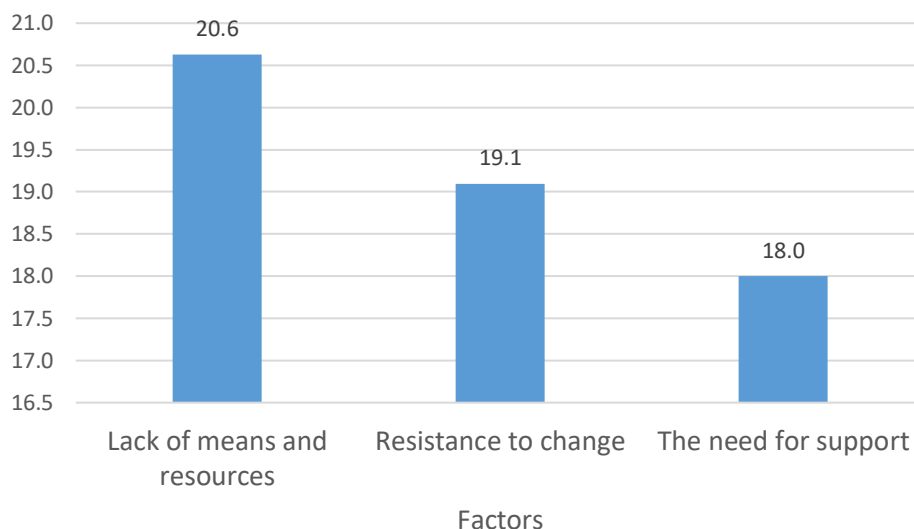


Figure 5: Percentage of data variability, which is explained by each of the three factors.

Table 4

Frequency distribution of respondents’ responses about barriers to use digital storytelling (in %).

Answer options	Question number in the questionnaire, % of respondents									
	1	2	3	4	5	6	7	8	9	10
agree completely	14.5	4.3	2.9	17.4	7.2	4.3	4.4	2.9	7.2	25.0
rather agree	26.1	10.1	23.2	33.3	30.4	15.9	13.2	7.4	10.1	17.6
neutral position	23.2	14.6	30.6	23.2	23.2	27.5	20.6	16.2	13.0	25.0
rather disagree	34.8	33.3	24.6	20.3	21.7	24.6	32.4	41.2	39.1	16.2
completely disagree	1.4	37.7	18.8	5.8	17.4	27.5	29.4	32.4	30.4	16.2

It is interesting to trace the relationship between these figures and the percentage of innovators, early supporters, etc. in the classification of the diffusion of innovation by Rogers [23]. On some issues we have close figures: for example, that “the use of these methods is associated with risk”, agreed to some extent 14.4% of respondents, 20.2% believe that there are no suitable tools, 17.3 % – say that innovations in teaching have a low priority, 10% – that students will not respond well to the use of these methods. On average, this is about 14% of respondents, which is not very different from the last group of “traditionalists”, which according to Rogers was 16%. At the same time, 50.7% of respondents are satisfied with the methods they use, and this is the

“late majority” plus “traditionalists”, of which, according to Rogers – 50%. At the same time, it is understandable that this method is used by innovators, early supporters and part of the early majority.

In addition, in interviews with researchers, it was found that the lack of creative skills can be a barrier to the use of digital storytelling. Based on the analysis of survey data and the results of interviews with research and teaching staff, works by Bingimlas [1], Lean et al. [11], Rogers [23], Taylor [25], Watson [27], we propose ways to overcome barriers to the integration of digital storytelling in the educational process (table 5).

Table 5

Possible ways to include educational institutions and teachers in the integration of digital storytelling in the educational process.

Barriers	For educational institutions	For teachers
Lack of access	Provision of resources, software and hardware, Internet access in the audience	Access to resources at home
Resistance to change	Trainings on new pedagogical approaches	Access from mobile devices
Lack of time	Meetings with “agents of change”	Openness to new ways of teaching
Lack of training	Providing additional time, reducing classes, distance learning, blended learning, reducing the workload of the teacher	Self-education
Lack of technical support	Trainings on working with new devices, modern technologies and cloud services and new pedagogical approaches	TED as a motivational resource
Insufficient development of creative abilities and skills	Training “Digital storytelling in adult education”	Skills of self-organization, time management

We have introduced an author’s special course “Digital storytelling in adult education” for the system of professional development of teachers, which aims to: consider and discuss the possibilities of digital storytelling as a new direction of educational resources, identify its components and most popular tools for educators. based on storytelling, as well as provide students with personal experience of designing their own stories with the help of modern digital services.

The following issues are studied and discussed at the special course:

1. Determining the properties of storytelling.
2. Co-creation of a teacher and a students of the New Ukrainian School on the basis of storytelling.
3. Massive open online storytelling courses.
4. Storytelling techniques.
5. Types of stories.
6. The relationship of pedagogy, technology and content.
7. Stages of creating digital stories.
8. History planning: scripts, storyboard.

9. Digital tools for creating stories: for planning and organizing digital stories; to search for media files for digital stories; resources for direct creation; platforms where they can be published; platforms for collaboration and commenting on digital stories.
10. Tools for creating stories by younger students.

Students are offered tools to study and analyze that are appropriate for the target audience with which they work. For primary school methodologists, these are tools for creating digital stories for younger students:

- Little Bird Tales (<https://littlebirdtales.com/>)
- My StoryMaker (<https://www.carnegielibrary.org/kids/storymaker/embed.cfm>)
- StoryBird (<https://storybird.com/>)
- StoryJumper (<https://www.storyjumper.com/>)
- Voki (<https://www.voki.com/>)

For example, the free tool My StoryMaker (figure 6) allows you to create a simple story in the form of a children's book by selecting the main character, his goal and the objects he wants to find, get, and so on.



Figure 6: The tool for creating a children's book My StoryMaker.

With StoryBird service, you can design stories with a variety of styles, in particular in the style of cartoonist Herluf Bidstrup (figure 7).

Here are some examples of tasks.

Task 1. Recall the nine steps of learning by Gagné [7]:

- 1) gain attention of the students (perception);
- 2) inform students of the objectives (expectations);
- 3) stimulate recall of prior learning (recovery);
- 4) present the content (selective perception);
- 5) provide learning guidance (semantic coding);



Figure 7: Frame of a video invitation to the author's special course on data analysis methods developed using the StoryBird service.

- 6) elicit performance/practice (answer);
- 7) provide feedback (reinforcement);
- 8) assess performance (correction);
- 9) enhance retention and transfer to other contexts (generalizations).

Assess how well your digital history is consistent with these steps.

- Task 2. Choose one of the 36 dramatic situations proposed by Polti [17], close to your topic. For example: 1) Brave attempt: Brave, Object of attempt, Opponent. A daredevil sets out to achieve something that seems difficult or impossible. 2) Abduction: Kidnapper, Kidnapped, Security Guard / Obstacle. A kidnapper kidnaps someone / something, but is hindered by a Guardian or Obstacle. 3) Mystery: Questionnaire, Seeker, Problem. The questioner puts the Seeker in front of a problem that he must solve. Write a script of your own story for the chosen situation.
- Task 3. Search for books by tag digital storytelling on Amazon and identify related groups of vertices in a column based on search results. Did you get unexpected results?
- Task 4. Get acquainted with the service StoryboardThat. Design and realize your own comic book story with this tool: about yourself, your project, your educational institution, how you studied in advanced training courses, etc.

During the special course it is advisable to use blended learning, combining full-time learning with fragments of mass open online courses (table ??) [14, 15]. Yes, we use fragments of the MOOC platform Coursera "Powerful Tools for Teaching and Learning: Digital Storytelling".

This course is designed specifically for teachers, it is designed for 5 weeks, which present the following topics: 1) the choice of topic and purpose; 2) writing an effective script and creating a storyboard; 3) audio recording; 4) the use of technology to build stories; 5) viewing, publishing and disseminating stories. The computer tools covered in the course are StoryBoardThat for creating static comic stories and WeVideo for dynamic ones.

Table 6

Massive open online courses dedicated to storytelling

Name	University	Platform
Transmedia Storytelling: Narrative worlds, emerging technologies, and global audiences	University of New South Wales	Coursera
Data Tells a Story: Reading Data in the Social Sciences and Humanities	Loughborough University	FutureLearn
Leadership Communication for Maximum Impact: Storytelling	Northwestern University	Coursera
Powerful Tools for Teaching and Learning: Digital Storytelling	University of Houston	Coursera
Creating Dashboards and Storytelling with Tableau	University of California, Davis	Coursera
Storytelling in Branding and Content Marketing	IE Business School	Coursera
Digital Storytelling: Filmmaking for the Web	University of Birmingham	FutureLearn
Storytelling for Change	Acumen Academy	Novoed
Storytelling and influencing: Communicate with impact	Macquarie University	Coursera
Influencing: Storytelling, Change Management and Governance	Macquarie University	Coursera
The Art of Storytelling	Alfaisal University KLD	Coursera
The Art of Data Storytelling	Alfaisal University KLD	Coursera
Data Storytelling	University of California, Irvine	Coursera
Storytelling With Data	Coursera Project Network	Coursera
Javascript animation for websites, storytelling, data visualization and games	Coursera Project Network	Coursera
Storytelling with Kumu	Coursera Project Network	Coursera
Consulting Presentations and Storytelling	Emory University	Coursera

Among the obstacles to the use of fragments of such MOOCs in adult education are: 1) insufficient level of English to work with English-language resources; 2) continuous commercialization of such projects as Coursera, etc; 3) the need to pay for modern computer equipment, which is provided free of charge only for a short time or with very limited capabilities. To overcome such obstacles, it is possible to: 1) when working with English-language courses, include subtitles, slow down the pace of the video; 2) join the course in the audit mode, which is provided free of charge; 3) look for the appropriate free software and submit proposals to the administration of educational institutions to subscribe to the necessary resources. In addition, it will be valuable to receive an initial orientation in working with MOOC during the face-to-face stages of retraining courses accompanied by an experienced teacher.

3. Conclusions and future work

The digitalization of all spheres of society requires constant updating of the training of scientific and pedagogical workers for the use of modern pedagogical technologies. Digital storytelling technology has a strong pedagogical potential and diversifies the educational process, promotes teamwork and discussion, attracts students to actively participate in learning, takes into account their personal experience, promotes digital collaboration of teachers and students in classes or other activities, shaping the qualities of digital citizens, creativity, critical thinking.

Based on empirical data from a survey of research and teaching staff and methodologists of educational institutions of Ukraine by means of factor analysis, a model of barriers to the integration of digital storytelling in adult education was built. The model includes three factors: the first is interpreted as a lack of suitable means and resources, the second – as resistance to change, the third – directly related to lack of time and lack of support from the educational institution. Modeling allows us to suggest areas of support and support for teachers in this matter.

It has been found that phases of orientation, acceptance, evaluation, innovation and institutionalization are needed to engage research and teaching staff in the use of digital storytelling. The first and third phases are related to the face-to-face phase of refresher courses, when educators consider approaches to the integration of digital storytelling technology, techniques, their availability and relevance to programs and subjects, assess strengths and weaknesses. We associate the admission phase with the inter-course period, when researchers develop these practices in their educational institution and study how students respond to them. The phase of institutionalization, in our opinion, related to the development of strategies to ensure the support of new methods of teaching and learning in the future, can be partially represented in the final, third, full-time period of advanced training and defense of graduation theses.

Proposed ways to overcome barriers to the use of digital storytelling: provision of resources, related software and hardware, Internet access in the audience; trainings for scientific and pedagogical workers on work with new devices, modern technologies and cloud services and new pedagogical approaches, trainings on creativity development; provision of long-term technical support by the educational institution, lifelong learning and self-education. A special course “Digital storytelling in adult education” has been developed, which has been introduced in the process of professional development of scientific and pedagogical workers and methodologists of various specialties. The special course uses fragments of mass open online courses in the phases of orientation, acceptance and evaluation of the use of digital storytelling.

Areas of further research we associate with the analysis of the possibilities of using augmented reality as a tool of digital storytelling in adult education.

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