

A SAMPLE MULTIMEDIA TEXTBOOK AS A TOOL FOR STUDYING THE LITERARY PLOTS

UM EXEMPLO DE LIVRO DIDÁTICO MULTIMÍDIA COMO FERRAMENTA PARA O ESTUDO DAS TRAMAS LITERÁRIAS

UN EJEMPLO DE LIBRO DE TEXTO MULTIMEDIA COMO HERRAMIENTA DE ESTUDIO DE LAS TRAMAS LITERARIAS

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ABSTRACT: This article presents an experimental model (prototype) of an electronic textbook for studying a narrative plot, based on the six-year-long wintering of the Pomors in the Arctic in the 18th century. The article describes the main stages of making a multimedia textbook. The article provides guidelines for selecting sources, dividing the material into sections, developing the textbook structure, implementing it in an electronic form, and making the best use of multimedia capabilities. A multimedia textbook can offer clarity of presentation, quick feedback and the flexibility to adjust it regularly as new information becomes available. The article describes the sections of the multimedia textbook, gives examples of tasks, explains the practical relevance of studying the ‘Arctic Robinsonade’ plot and proves the effectiveness of using a multimedia educational resource for distance learning on literature. The product developed may be used at schools and universities for mass study and testing, and self-study.

KEYWORDS: E-textbook. Digitalization. Digital humanities. Arctic Robinsonade. Regional literature.

RESUMO: *Este artigo apresenta um modelo experimental (protótipo) de um manual eletrônico para o estudo de uma trama narrativa, baseado no inverno de seis anos dos Pomores do Ártico no século XVIII. O artigo descreve as principais etapas da elaboração de um livro didático multimídia. O artigo fornece diretrizes para selecionar fontes, dividir o material em seções, desenvolver a estrutura do livro didático, implementá-lo de forma eletrônica e fazer o melhor uso das capacidades multimídia. Um livro-texto multimídia pode oferecer clareza de apresentação, feedback rápido e a flexibilidade para ajustá-lo regularmente à medida que novas informações se tornam disponíveis. O artigo descreve as seções do manual multimídia, dá exemplos de tarefas, explica a relevância prática do estudo da trama 'Arctic Robinsonade' e prova a eficácia do uso de um recurso educativo multimídia para o ensino à distância sobre literatura. O produto desenvolvido pode ser usado em escolas e universidades para estudo e teste em massa, e autoestudo.*

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PALAVRAS-CHAVE: *E-textbook. Digitalização. Humanidades digitais. Robinsonade Ártica. Literatura regional.*

RESUMEN: *Este artículo presenta un modelo experimental (prototipo) de un manual electrónico para el estudio de una trama narrativa, basado en el invierno de seis años de los Pomores Árticos en el siglo 18. El artículo proporciona pautas para seleccionar fuentes, dividir el material en secciones, desarrollar la estructura del libro de texto, implementarlo electrónicamente y hacer el mejor uso de las capacidades multimedia. Un libro de texto multimedia puede proporcionar claridad de presentación, retroalimentación rápida y la flexibilidad de ajustarlo regularmente a medida que se dispone de nueva información. El artículo describe las secciones del manual multimedia, da ejemplos de tareas, explica la relevancia práctica del estudio de la parcela 'Arctic Robinsonade' y demuestra la efectividad del uso de un recurso educativo multimedia para el aprendizaje a distancia sobre literatura. El producto desarrollado se puede utilizar en escuelas y universidades para el estudio y las pruebas masivas, y el autoestudio.*

PALABRAS CLAVE: *Libro de texto electrónico. Digitalización. Humanidades digitales. Robinsonade del Ártico. Literatura regional.*

Introduction

Bringing digital methods into the humanities has never been more relevant for the contemporary academic community (SASSIN, 2020). The studies, undertaken at the juncture of computer methods and the humanities, are among the first to take a leading role. This study is aligned with the Digital Humanities (DH) framework. The DH framework is an amalgamation of “methodologies and practices from the humanities, social studies and computational sciences to explore the application and interpretation of new digital, information and communication technologies in the humanities and education” (MOZHAYEVA, 2015).

Creating multimedia textbooks is one of the topical directions of modern pedagogy and methods of teaching humanities (SASSIN, 2019).

Quite a number of research works have been devoted to introducing digital resources and multimedia textbooks into the educational process and to the impact of new educational technologies on students. For example, Lyu and Wang (2018) studied the impact of computer network technology on student training. Researchers from Pakistan dealing with the study of the role and efficiency of information technologies in the learning process argue that multimedia is a “constructivist studying atmosphere where the learners can fix a problem through active participation, cooperation, and self-exploration” (QURAT-UL-AIN *et al.*, 2019). At the same time, the interactive nature of multimedia provides opportunities to enhance

the traditional form of classroom experience. Multimedia, according to Susikaran (2013), is the fusion of two types of media: computer hardware and some kind of software, i.e., the integrated utilization of two or more digital spaces. The academics draw attention to the nuances of the multimedia application in the teaching of English (SUSIKARAN, 2013) and training in speaking skills (LISNAWATI, 2021). In addition, experts are interested in the potential of multimedia in teaching not only young students, but also seniors who now have a critical need to master IT competencies (ANIKEYEVA *et al.*, 2019).

Techniques for the creation of a multimedia textbook in literature

Here is a working definition of the basic concept for our study: a multimedia textbook is “a textbook that uses multimedia technologies, i.e., technologies for transmitting color, sound, graphics, etc., in any combination” (YURINA; GRADALEVA, 2016). While clarifying the definition of a multimedia textbook, it is important to note that its interactivity and accessibility for students, presence of hypertext information, links, video, audio and various photos, and instant feedback facilities are the prerequisites for creating an electronic textbook with multimedia content.

As of today, the methodology for the development of multimedia textbooks has not been sufficiently described. Therefore, we follow the recommendations presented in the publications of Turkevich (2022), Aleksandrova and Aleksandrov (2018), Ostanina and Ostanin (2017), Yurina and Gradaleva (2016), Kolysheva (2014).

The article by Yurina and Gradaleva (2016) describes the steps involved in creating a multimedia textbook: 1) selecting sources; 2) contracting with authors for the right to rework; 3) developing a table of contents and a list of concepts (index); 4) converting texts into modules and creating a *Help* section; 5) implementing the hypertext functionality; 6) developing computer support; 7) selecting material for translation into multimedia; 8) scripting the voice-over; 9) recording and processing of the voice-over; 10) preparing material for visualization; 11) visualizing the material. The methodology suggested was partly used when preparing a chapter for our multimedia textbook.

The process of creating the multimedia textbook included the following steps: 1) defining the objectives and tasks of the development; 2) selecting the development tools; 3) designing the structure of the multimedia textbook; 4) elaborating the content based on the sections of the textbook; 5) producing the training videos; 6) recording the voice-over for the

training videos; 7) creating the user interface for the textbook; 8) experiential use of the textbook; 9) evaluating the efficiency of the textbook in the teaching process.

The purpose of the development presented is to create an experimental prototype for a multimedia textbook for the Native Literature developmental curriculum. The objectives are as follows: 1) preparing the content in accordance with the Native Literature developmental curriculum; 2) shooting an original video; 3) cross-cutting and dubbing the video; 4) creating a shell (user interface) for the multimedia textbook.

The preparatory phase involved compiling the text of the multimedia textbook, selecting some images and background material, designing the interface of the textbook and scripting the video. The same stage included elaborating all possible options for presenting the teaching content (images, sound, and video).

The main phase comprised the actual creation of the chapter of the multimedia textbook. The content was assumed to take precedence over the form of presentation. The form of presentation was to be as rigorous as possible. A page should not contain any unnecessary information (either graphic or textual) that might distract the eye of a reader. The background should be monochromatic; a light background would be preferable, with the text written in a dark color, such as black or navy blue.

The Perfect Video editor (smartphone app) was used to record the video. Some basic non-professional equipment (smartphone, lavalier microphone, ordinary tripod) was used to record the video footage. Also, the Perfect Video editor (Version 8.4.0) was utilized to process the footage. This software is a powerful and versatile mini-application for Apple devices. It has an intuitive interface. Video clips that need editing are added to the Perfect Video project (PV file) directly from a mobile device. Perfect Video supports 4K video digitization, thus enabling the editing of high-quality video footage that meets the requirements for multimedia content. Once the footage had been edited, animated subtitles were applied using the same mini app: title added, appropriate frame transitions made, and text and images inserted. The next step is creating the user interface for the multimedia textbook with various available tools. For drafting the textbook chapter, Tilda Publishing, a website and web design platform, was chosen as the available service. One can start designing a website from scratch, using zero-blocks, or from ready-made templates and blocks, which can be grouped together like a Lego™ constructor. For our purposes, zero-blocks and their corresponding options of content functionality were suitable. Suggested blocks include, for example, the following design elements: menu, text blocks, images, videos, forms and buttons, transition steps, team, testimonials, Google and Yandex maps, etc. Once the page (in our case, the textbook) is added and published, the ready-

made blocks automatically adjust to different devices (computer, smartphone, or tablet), thus not limiting the use of the textbook to a computerized or ordinary classroom. It is also helpful in switching over to distance learning, if necessary.

The final step in creating the multimedia textbook was to populate the user interface with videos, images and text. The files were brought into the user interface through the object insertion menu.

Therefore, it is clear that the technology for producing a multimedia textbook is quite labor-intensive, because the textbook should not be a mere software product but rather a fully-fledged pedagogical tool targeting its implementation in the teaching and learning process.

Features of a multimedia product

We developed the prototype of a multimedia textbook chapter to study the literary works which elaborate on the ‘Arctic Robinsonade’ topic. The Arctic Robinsonade is based on an actual event from the 18th century — a six-year-long wintering of sea-hunters on one of the Spitsbergen islands. The following works were included in the ‘Arctic Robinsonade’ circle: A book by Peter Louis Le Roy, *The Adventures of Four Russian Sailors Brought to Spitsbergen Island by a Storm* (1760), which is the original source of the plot in question. This book by the French tutor of Count Shuvalov’s children is an artistically arranged interrogation-like interview of sea-hunters who survived. Also, the said circle includes Z.S. Davydov’s novella *Beruny* (Takers) (1933), K. S. Badigin’s novella *The Way to Grumant* (1953), and S.B. Radzievskaya’s novella *Island of Courage* (1981). The presented chapter includes material for studying Konstantin Badigin’s novella *The Way to Grumant*.

The author referred to the genre of his work as a ‘Pomor True Story’; it was first published in 1953, and a year later a feature film, *The Chill Sea*, was produced based on the book (directed by Yury Egorov). Konstantin Badigin acted as screenwriter for the film. Therefore, K. Badigin’s novella seems quite significant from the point of view of studying the traits of the author’s unique portrayal of the Pomor craft, the Pomor character, and the Pomor spirit. While studying the novella *The Way to Grumant* students delve into the peculiar world of the Pomors of the 18th century. The same contributes to the formation of ideas about the North Russian worldview of those times.

While studying the works of the ‘Arctic Robinsonade’, in particular K.S. Badigin’s novella *The Way to Grumant*, students ponder such issues as the problem of human responsibility for their actions, the relationship between man and nature, man and government

institutions, the conflict between the capital city and the provinces. Furthermore, the variety of world cultural experiences is revealed through comprehension of original culture of the Pomor Land. In achieving this, the role of books is invaluable; this is the point of importance of works under the ‘Arctic Robinsonade’ topic: they convey to the reader the experience of previous generations, their view of the world and the human being with the help of an interesting plot, vivid characters, and a non-trivial display of historical events (KUTEYNIKOVA; ENUKOVA, 2008).

The multimedia textbook can be used to pursue the above objectives.

A prototype chapter of the multimedia textbook for studying the ‘Arctic Robinsonade’ is publicly available on the Internet. The said chapter — K. S. Badigin’s novella *The Way to Grumant* — includes eight sections: About the Author; Theoretical Findings; Video Lecture; Test; Let’s Read; Exploring the Text; Play & Practice; Glossary.

The first section of the chapter introduces the biography of the writer, K.S. Badigin. The section contains a brief information about the most important events in the writer’s life. There are also photographs of K.S. Badigin and a link to a more detailed biography, which can be found on the portal of the “Russian North” Digital Regional Library.

The next section, ‘Theoretical Findings’, provides students with an introduction to the main issues of the novella: the events the story is based on; what happened to the Pomors in the long-standing year of 1743; detailed explanation of the Mezens ‘Robinsons’ phenomenon; characterization of the novella localization and the Arctic chronotope in the literature.

The slides display screenshots from the ‘Theoretical Findings’ section. This section is followed by an original video lecture, after which students are asked to solve a quiz. To begin solving the test, students need to click on the relevant button on the textbook web page. This quiz may be used as part of homework. Test completion data is automatically emailed to the teacher to reduce the time needed to review the students’ homework.

The section ‘Let’s Read’ includes a hyperlink to the text of the novella. By clicking the appropriate button in the main menu, students go to Litmir.ru website, where the full text of the novella is available.

The next section, ‘Exploring the Text’, facilitates an in-depth study of some aspects of the story. The section contains a fragment of text and a QR-code to the book page for quickly navigating to the fragment, when browsing from a smartphone. After reading the excerpt, students are encouraged to work through a 16-step algorithm.

A teacher organizes working with this section directly in a classroom.

The ‘Play & Practice’ section contains a range of intellectual, exploratory and creative activities. This section aims to reinforce what students have learned, in an interactive format.

After completing all mandatory activities, students should enter their e-mail addresses in a special field; they will then receive the results of the ‘Play & Practice’ workshop to these e-mail addresses. The results are presented as prizes, and the winners and awardees of the game are determined.

The final section of the textbook chapter is ‘Glossary’, which provides basic literary terms used in the theoretical material of the textbook.

Thus, the multimedia textbook can be successfully used for organizing lessons and extracurricular activities for school students studying Russian literature. Furthermore, the textbook is available for free on the Internet via the link <http://arcticway.tilda.ws/> or QR-code, so students and teachers can access it anytime.

The theoretical material is systematized in such a way that students can gradually immerse in the topic of the course — the ‘Arctic Robinsonade’. The set of tasks in the textbook ensures a gradual and systematic introduction to the material and makes the learning process funnier and more interesting. The use of the textbook helps inspire students’ interest in literature.

Thus, the multimedia textbook increased the students’ knowledge of the ‘Arctic Robinsonade’ plot.

Instructions for using the multimedia textbook

To use the multimedia textbook on ‘Arctic Robinsonade’ plot, follow the link <http://arcticway.tilda.ws/>.

The home page displays a menu of textbook chapters, aimed at exploring one of the works of the ‘Arctic Robinsonade’ — the novella *The Way to Grumant* by K.S. Badigin. It also opens with a welcome speech and an address to the users.

The textbook menu is a grouped set of links with section names, facilitating navigation to other pages in the textbook or other relevant sources, e.g., the ‘Let’s Read’ button links to an online library website with the full text of the novella under study. A fixed menu always remains at the top of the screen when viewing the textbook pages, making it easier to work with the textbook and allowing access to the desired section anytime, without the necessity to return to the home page. Thus, it is possible to work with the textbook in the page-by-page and section-by-section modes.

It is recommended to begin with the ‘About the Author’ section, which familiarizes the reader with the basic facts about the life, creative and professional background of K.S. Badigin. The section includes photographs of the writer, and the link to the appropriate page on the “Russian North” Digital Regional Library website.

After getting acquainted with the writer’s details, students should study the ‘Theoretical Findings’ section. After reading this section, which also includes photos of real sea-hunters of the early 20th century, the user can watch the educational video, and then take a test by clicking the button at the bottom of the section or in the main menu.

In the next section, ‘Exploring the Text’, students first read the suggested text fragment and then switch to the chronotopic analysis algorithm using the ‘Start Exploring the Text’ button. Here the user has to answer the questions, referring directly to the fragment from the novella. Finally, having worked through all the tasks designed to develop the skills of profound philological analysis, the users can draw their own conclusions about the specific relationship between the literary world and the protagonists “living” in it. This section is followed by the interactive part of the textbook, which is implemented through the ‘Play & Practice’ section. To begin the game, students need to click the ‘Play’ button at the bottom of this section after the textbook authors have addressed the user. The ‘Play & Practice’ section contains three different tasks: exploratory, intellectual and creative. The answers are automatically sent to the textbook authors’ e-mail addresses. A winner and awardees are determined at the end of the collective participation. The terminology glossary that the user can refer anytime is at the end of the textbook; it is also accessible via the fixed main menu.

Analysis of the experiential use of the multimedia textbook chapter

The main task of the experiential use was to test the effectiveness of the multimedia textbook as a teaching aid in the process of learning the Mezen ‘Robinsons’ plot. The effectiveness of the textbook was determined by analyzing the data obtained through descriptive statistics and calculating the Wilcoxon T-test.

Experiential use was conducted in three phases:

- (1) Introductory survey;
- (2) Work with the multimedia textbook in class;
- (3) Final survey.

The session was conducted as a lecture. The textbook was displayed on the screen via projector with the possibility to scan the QR-code for quick access to the textbook website.

Thus, the students could see the interface of the textbook and photo/video materials from the projector screen, and their personal smartphones. Before and after the use of the multimedia textbook — i.e., during the first and third phases of the experimental use — the students were given tests (an introductory test before the session and a control test after the session). The test aimed to determine the level of knowledge acquired by the students and evaluate the effectiveness of the multimedia textbook as a teaching tool.

The first test, conducted in December 2021 and involved 20 first-year Russian university students. The same students took the second test in April 2022, after being introduced to the multimedia textbook we had developed to assess their learning progress. The number of testees in both groups was sufficient. The testees had the same specialty (Philological Education), which indicates the representativeness of the sample. The tests assumed a maximum 20-point score; questions dealt with the developing reading competences and professional philological knowledge. The types of answers used in the test were choosing one correct option and free-form answer. Two points were awarded for each correct response: one for an incomplete response and zero for an incorrect one.

The list of questions for assessing knowledge of the plot of the adventures of the new ‘Robinsons’ in the Arctic was formed on the basis of the breakdown we had justified: knowledge, reading experience, value-scale and meaning-scale content of professional philological education, emotional and volitional regulation, students’ level of readiness to study the plot of the Arctic ‘Robinsons’ with the help of multimedia textbook.

In our study, the pedagogical task can be formulated as follows:

A group of 20 students studied the ‘Arctic Robinsonade’ plot using a new multimedia textbook. The question was formulated as follows: is there any difference in the scores on the test results before and after the study with the new multimedia textbook?

Thus, the answer to the above question will reflect an analysis of the differences between the test scores before and after the training with the new e-textbook. Although we had two dependent samples, $n = 20$, the scale was ordinal (points), and an analysis of differences between samples was required; thus, it is appropriate to apply the Wilcoxon T-test, with an acceptable error level $\alpha = 0.05$.

Microsoft Excel does not contain functions for calculating the T-test. However, calculating the T-test with estimates of significance, effect size and confidence intervals is possible using specialist software: SPSS, R. In addition, specialized add-ons to Microsoft Excel, such as Real Statistics, can be used.

The results of testing the group of adolescents are presented in Table 1.

Table 1 – Testing data of the group of students before and after studying the Mezen ‘Robinsons’ plot with the help of the new e-textbook

Sl. No.	Before (points)	After (points)
1	12	12
2	10	16
3	14	12
4	12	14
5	8	14
6	12	8
7	10	12
8	18	20
9	6	10
10	14	16
11	8	10
12	20	20
13	18	20
14	14	16
15	16	14
16	18	20
17	8	12
18	10	12
19	14	18
20	10	12

Source: Prepared by the authors

Calculations are done manually. Significance estimation includes getting a p magnitude and comparing it to an acceptable level α . The p magnitude is the probability of obtaining exactly the data as obtained (we have collected the test results), provided that there are, in fact, no differences in the samples under study. The p magnitude can only take values between 0 and 1. The smaller p is, the more significant the results are; α is the acceptable error rate of the first kind (finding something where there is nothing).

$$T(+) = 185.1; T(-) = 33.5, T = 33.5$$

For our sample ($n = 20$) we can calculate an asymptotic (approximate) value of p magnitude via a normal distribution using the formula:

$$z = \frac{(T - \frac{n(n+1)}{4})}{\sqrt{\frac{n(n+1)(2n+1)}{24}}} = \frac{(33.5 - \frac{20(20+1)}{4})}{\sqrt{\frac{20(20+1)(20+1)}{24}}} = \frac{-71.5}{26.786} = -2.7$$

From z -value it is possible to calculate the p -value using Microsoft Excel function NORM.S.DIST; z -value may be negative, so we have to discard the sign (by function ABS):

$$p = 2*(1-NORM.S.DIST(abs(z);1)) = 0.0076$$

The effect size is estimated using the method corresponding to the p -value, and it should be applied if there is a z -value.

We use r_{effect} as a measure of the effect size, which is calculated using the formula:

$$r_{\text{effect}} = \frac{|z|}{\sqrt{(n_1+n_2)}} = \frac{|-2.66928588|}{\sqrt{(21+21)}} = 0.412 \quad (0.3 \leq r = 0.412 < 0.5 - \text{medium effect.})$$

The effect size is estimated using the following system of criteria (J. Cohen): $r < 0.1$ — no effect; $0.1 \leq r < 0.3$ — weak effect; $0.3 \leq r < 0.5$ — medium effect; $0.5 \leq r$ — strong effect.

Conclusion: $T = 33.5$, $p = 0.003 < \alpha = 0.05$, $r = 0.472$ ($0.3 \leq r = 0.472 < 0.5$ — medium effect), low p -value ($p < \alpha$) and *medium effect*. This suggests that our hypothesis was confirmed: there are grounds to claim a change in test results after undergoing training with the new e-textbook.

Discussion and conclusion

The objective of this research formulated as determining the effectiveness of implementing a multimedia textbook in the study of works of the ‘Arctic Robinsonade’ circle was achieved by conducting a pedagogical experiment and developing a prototype of a multimedia textbook available online.

At the beginning of the research, a lesson on ‘Chronotope of the Arctic in the novella *The Way to Grumant* by Konstantin Badigin’ was conducted with second-year students of a Russian university. The lesson was organized as a traditional lecture followed by frontal questioning, conversation, working with the text according to the algorithm. Afterward, the students were tested to determine the level of mastering the learning material and the degree of comprehension of the text. The test results showed that the students’ perception of new information about the plot of the ‘Arctic Robinsonade’ and their skills of philological analysis of a literary text were at an average level. Furthermore, the maximum score (18 and 20 out of possible 20 points) was achieved by 20% of the respondents, the minimum score (6 and 8 out of possible 20 points) also was shown by 20%, and the majority of the respondents scored average (10 to 14 out of possible 20 points).

After designing the prototype of the multimedia textbook, a non-traditional session with digital learning elements was conducted with the same group of students. Second-year students were also tested after the training. Post-testing showed that the maximum score (18 and 20 out of a possible 20 points) was achieved by 25% of the students, while the minimum score (8 out of possible 20 points) was recorded for one student only (2%). The average score was demonstrated by the majority of testees (70%), but its upper limit has now increased from 14 to 16 points. Thus, the level of mastering the material and acquiring text analysis skills increased.

Testing is a fairly popular method for monitoring the quality of knowledge acquired by students in higher education institutions. Test results are a means of determining the student's performance and an indicator of the effectiveness of the didactic system used, including teaching and learning methodology and the implementation of modern computer technology (POPOV, 2013). In our case, testing was an indicator of the effectiveness of implementing the multimedia textbook for studying the 'Arctic Robinsonade' plot. The questions included in the test tasks were formulated so that students could demonstrate the acquisition of new information, and enhance their knowledge of the material in literature they had already learned during the first year of their university studies. For instance, several questions aimed to update knowledge of the terminology of basic literary science. Students should choose the correct wording for the definition of 'Robinsonade' and clarify the definition of 'plot'. In this regard, both tests demonstrate that students made practically no mistakes or inaccuracies (three testees exhibited deficiencies in single questions).

In addition, the test assignments covered questions about the structure of the 'Arctic Robinsonade' plot, the character system, the content of the novella *The Way to Grumant*, the specifics of the unique author's depiction of the Arctic Chronotope and the Russian North, and the artistic interpretation of a historical event. Such complex questions did not cause any particular difficulties for students, after they had worked with the multimedia textbook, unlike the results of the test following the traditional lecture on the 'Arctic Robinsonade'. For example, the task to find the exact wording of the historical event that was the basis for the Arctic Robinsonade story was done correctly by 4 of 20 students before the textbook was introduced; after the relevant training, 19 of 20 students solved the problem successfully. We may distinguish the tasks concerning the writer's name and the characters' names in the novella. It was noticed that the students made mistakes in the writer's patronymic or could not remember the names of the main characters of the novella, directly called 'Robinsons', or confused those with the names of the secondary characters who took part in equipping the ship for the Arctic hunting, but did not set sail or winter on Spitsbergen.

Finally, the results of both tests were not only cognitively processed, but also subjected to a more precise analysis using mathematical methods. Interpretation of the cognitive processing of the results demonstrates that the introduction of the new multimedia textbook in the process of learning the 'Arctic Robinsonade' plot has a positive impact on the quality of learning, on the degree of assimilation of new and challenging material. After working with the multimedia textbook, the students demonstrated their knowledge at a higher level as compared to studying the text in the traditional form. Calculating the Wilcoxon T-test corroborated the

conclusions drawn from the substantive analysis of the test results. Thus, by virtue of the study conducted, analysis and interpretation of the data obtained, it can be stated that the application of a multimedia textbook on the 'Arctic Robinsonade' plot makes the learning process more effective.

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