ISSN 1512-1232

УДК 004.91

TECHNOLOGY OF CREATING INTERACTIVE ELECTRONIC POSTERS USING ADOBE ANIMATE TOOLS

Maryna Mamuta[1], Olga Rybalko[2]

[1]National Technical University of Ukraine "Igor Sikorsky Polytechnic Institute", Kyiv, Ukraine

[2]Pryluky Humanities and Pedagogical College I. Franco, Pryluky, Ukraine

Abstract

The article explores the role of visualization as an effective tool for simplifying complex information and improving its perception through visual representations. Special attention is paid to interactive posters that combine multimedia elements: images, video, animation and hyperlinks. These elements improve the presentation of educational material, making it more accessible and engaging.

One of the key tools for creating such educational resources is Adobe Animate. The study explores the capabilities of this platform, including a case study of the development of an interactive poster on the topic of unmanned vehicles. This case study demonstrates such features as: interactive buttons, dynamic change of content visibility, appearance or disappearance of information under the control of the teacher.

To realize such features, the study presents a code snippet that ensures the operation of all elements, making the resource interactive and functional.

The article emphasizes that Adobe Animate is a universal platform for creating educational materials that increase student engagement and improve learning. Thanks to its capabilities, this platform becomes a valuable tool for both teachers and students, helping to make the learning process more effective and moder

Keywords: *визуализация обучения, интерактивный плакат, интерактивность, Adobe Animate, Java Script, HTML5 Canvas.*

1.Introduction

Visualization of educational material is a process that transforms complex ideas and information into a visual form that makes them easier to perceive and understand. It involves the use of various graphic and multimedia elements to make content more understandable and accessible. In the process of learning, we encounter pictures, diagrams, and illustrations that help make complex information easier to understand. For example, charts and graphs visualize data by turning it into clear and understandable images. Maps help to present spatial and geographical facts, while animations and videos make explanations more lively and interactive [1].

Visualisation of educational material plays a key role in the educational process, providing deeper perception, understanding and remembering of information. This is due to the fact that visual content is more easily perceived and processed by the human brain compared to textual data [2].

The most effective tool for creating visual content is interactive posters. They include multimedia elements (images, video, audio, hyperlinks and animation). Interactive posters,

ISSN 1512-1232

presentations and other multimedia tools make learning more interesting. Hyperlinks, tests and buttons give the opportunity to actively interact with the material, to study it in a convenient form, and animations and transitions make the content dynamic and exciting. All this contributes to better knowledge assimilation and supports active participation of students in the learning process [3; 4].

The authors [5] investigated the creation of interactive posters using Adobe Flash. In this programme with the help of Action Script 2.0 language it is possible to create multilevel interactive posters. In the study [6], the authors described how to create a multilevel interactive poster in Adobe Flash using the Action Script programming language. The main file was saved in .exe format. And all the other files were in *swf format. With the help of main file all other file can be opened.

The study [7] proved the advantages of such an interactive poster over single level posters. This electronic educational resource contains all the formulas in mathematics. It is substantiated that this resource is convenient to use for pupils, students, teachers and lecturers.

But recently antivirus programmes are very suspicious of exe-files. In addition, Adobe Flash has ceased to exist. In its place, Adobe released Adobe Animate.

In 2015, Adobe Flash gave way to Adobe Animate, which supports modern technologies: HTML5 Canvas, AIR for Desktop, Android, iOS, etc. This environment allows you to create animations and interactive resources for the Internet.

2. The results of the research.

To create an interactive poster in Adobe Animate, it is recommended to select the HTML5 Canvas format and save the result in *html format, which ensures accessibility both online and offline. Poster materials, such as images of the car and sensors, can be created in Photoshop or directly in the vector editor of Adobe Animate. This article provides an example of creating an interactive poster on the topic of what components a driverless car has and how it works (Fig. 1).

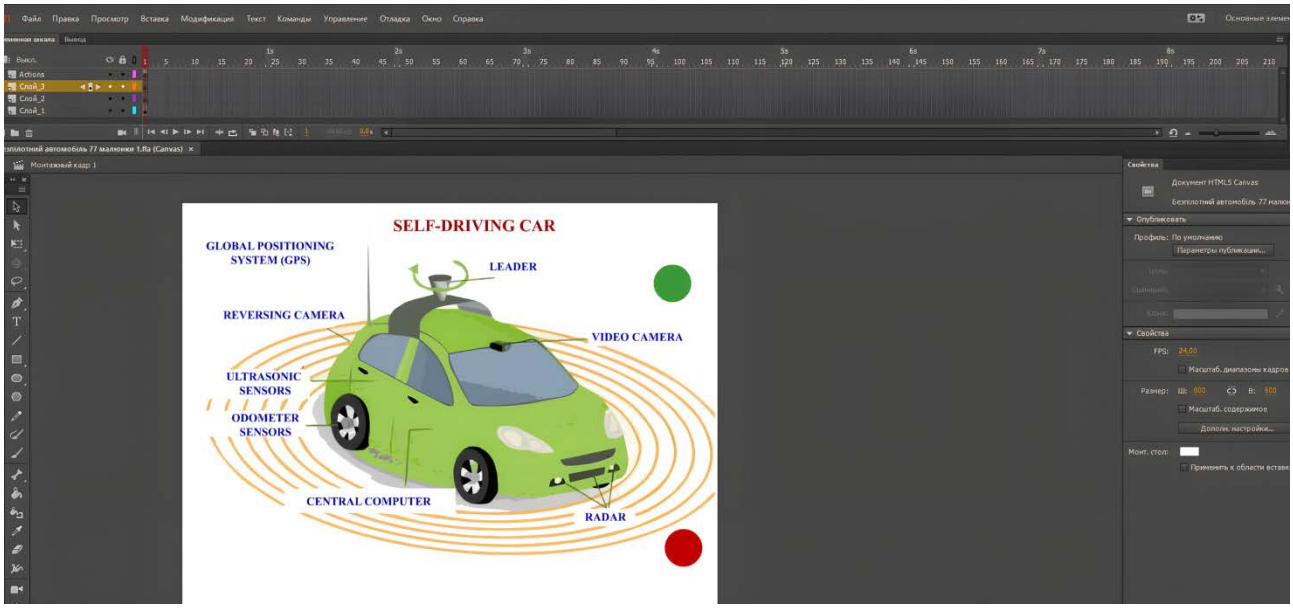

Fig.1. Placing static poster elements in Adobe Animate.

Currently, this is a regular poster that can be printed or used during a presentation. To make this poster interactive, you need to close all the component names and create buttons. This is necessary so that the text information can be closed and opened. Therefore, we create drawings in

ISSN 1512-1232

Adobe Animate. In particular, we draw circles in green and red colors, and rectangles in light brown. (Fig. 2).

Initially, the user sees only a regular electronic poster. Using the red button, you can close all entries at once. The green button allows you to open all entries at once (Fig. 2).

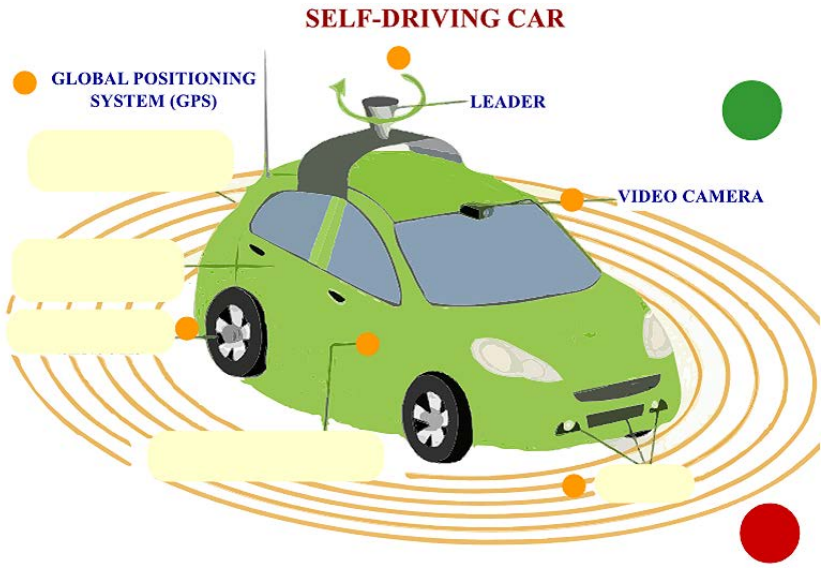

Fig. 2. Demonstrating the interactivity of the poster using red and green buttons.

In order for the buttons to work, you need to insert the following code into the Actions field:

```
var root = this;
 {
 this.s1.visible=false;
  this.s2.visible=false;
  this.s3.visible=false;
  this.s4.visible=false;
  this.s5.visible=false;
  this.s6.visible=false;
  this.s7.visible=false;
  this.s8.visible=false;
  this.Lidar.visible=false;
  this.Radar.visible=false;
  this.Video.visible=false;
  this.Comp.visible=false;
  this.GPS.visible=false;
   this.Odom.visible=false;
      }
 this.s1.addEventListener("click", hideThes1);
function hideThes1()  {
 root.s1.visible=false;
 }
this.s2.addEventListener("click", hideThes2);
function hideThes2()  {
  root.s2.visible=false;
 }
 this.s3.addEventListener("click", hideThes3);
function hideThes3()  {
```

ISSN 1512-1232

```
  root.s3.visible=false;
 }
this.s4.addEventListener("click", hideThes4);
function hideThes4()  {
  root.s4.visible=false;
 }
 this.s5.addEventListener("click", hideThes5);
function hideThes5()  {
  root.s5.visible=false;
 }
 this.s6.addEventListener("click", hideThes6);
function hideThes6()  {
  root.s6.visible=false;
 }
this.s7.addEventListener("click", hideThes7);
function hideThes7()  {
  root.s7.visible=false;
 }
 this.s8.addEventListener("click", hideThes8);
function hideThes8()  {
  root.s8.visible=false;
 }
 this.Lidar.addEventListener("click", hideTheLidar);
function hideTheLidar()  {
  root.Lidar.visible=false;
 }
 this.Radar.addEventListener("click", hideTheRadar);
function hideTheRadar()  {
  root.Radar.visible=false;
 }
 this.Video.addEventListener("click", hideTheVideo);
function hideTheVideo()  {
  root.Video.visible=false;
 }
 this.Comp.addEventListener("click", hideTheComp);
function hideTheComp()  {
  root.Comp.visible=false;
 }
 this.GPS.addEventListener("click", hideTheGPS);
function hideTheGPS()  {
  root.GPS.visible=false;
 }
 this.Odom.addEventListener("click", hideTheOdom);
function hideTheOdom()  {
  root.Odom.visible=false;
 }
 this.myButton1.addEventListener("click", show);
function show () {
  root.s1.visible=true;
  root.s2.visible=true;
  root.s3.visible=true;
  root.s4.visible=true;
```

ISSN 1512-1232

```
  root.s5.visible=true;
  root.s6.visible=true;
  root.s7.visible=true;
  root.s8.visible=true
}
this.myButton2.addEventListener("click", Hide);
function Hide () {
  root.s1.visible=false;
  root.s2.visible=false;
  root.s3.visible=false;
  root.s4.visible=false;
  root.s5.visible=false;
  root.s6.visible=false;
  root.s7.visible=false;
  root.s8.visible=false
}
this.myButton11.addEventListener("click", show1);
function show1 () {
  root.Lidar.visible=true;
  }
this.myButton12.addEventListener("click", show2);
function show2 () {
  root.Video.visible=true;
  }
this.myButton13.addEventListener("click", show3);
function show3 () {
  root.Radar.visible=true;
  }
this.myButton14.addEventListener("click", show4);
function show4 () {
  root.Comp.visible=true;
  }
  this.myButton15.addEventListener("click", show5);
function show5 () {
  root.GPS.visible=true;
  }
  this.myButton16.addEventListener("click", show6);
function show6 () {
  root.Odom.visible=true;
  }
```

We turned the red and green circles into buttons. We named these buttons: myButton 1 and myButton 2. The rectangles that close the records are MovieClips. There are 8 of them in total. Name: s1, s2, …, s8. In addition, there are six more orange buttons, which are named: myButton11, myButton12, myButton13, myButton14, myButton15, myButton16. With their help, the MovieClips become visible: .Lidar. Radar, Video, Comp, .GPS, Odom. When we run this program, all MovieClips are invisible. This action is performed by the following code fragment:

`this.s1.visible=false;` and so on.

Code: `this.s1.addEventListener("click", hideThes1);`

```
function hideThes1() {
```

ISSN 1512-1232

`root.s1.visible=false;` means that when you click on the image with the left mouse button, this image disappears.

Let's look at another interactivity effect that allows you to put a lot of information on an interactive poster. Pay attention to the small orange circles. These are buttons that display relevant information when you click on them (Fig. 3). When you click on the image of the rounded green rectangles with labels on them, these rectangles with labels disappear (become invisible).

So, using the orange buttons, the user can open all the information that is available on the poster. This way, you can present a significant amount of information, and the choice of educational material for the presentation is left to the teacher.

With Adobe Animate, you can create interactive posters that work both with and without Internet access. To publish online, you just need to configure the publishing options and click File → Publish Options → Publish. In this case, all poster objects will function only when the Internet is available.

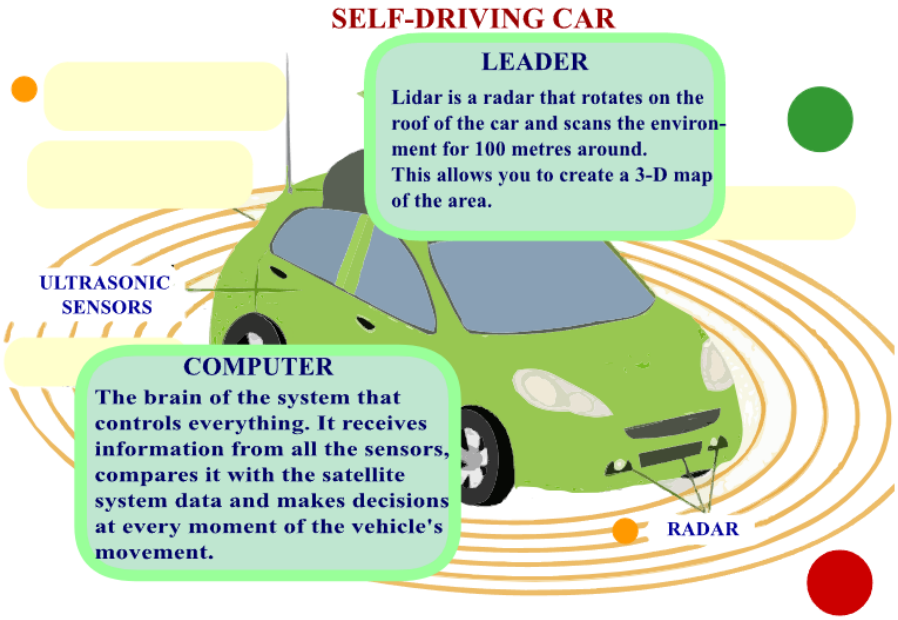

Fig 3. Demonstration the appearance of the desired information using orange-colored buttons.

To work offline, open the saved file in a browser, right-click on an empty space, select "Save As..." from the context menu, and save a local copy.

It is important to use vector images, as raster images may not display correctly. If you need to work with raster images, you need to vectorize them using the "Edit" → Raster Image → Vectorize menu. However, the image quality may be reduced, so you will need to modify it, for example, fill in areas with ambiguous colors after vectorization.

In general, Adobe Animate is a powerful vector editor, so it is advisable to create all illustrations directly in this environment.

Thus, we have confirmed that Adobe Animate can be effectively used to create interactive electronic posters that are convenient for use in the educational process.

3. Conclusion

The study demonstrates the significant role of visualizing educational materials in improving students' perception and understanding of educational material.

ISSN 1512-1232

The transition from Adobe Flash to Adobe Animate marked a significant progress, providing teachers with modern tools and formats, such as HTML5 Canvas, to create accessible and versatile educational resources. A practical example of creating an interactive poster about driverless cars demonstrates the potential of Adobe Animate to develop engaging educational materials that work both online and offline.

The study confirms the advantages of using vector images and highlights such interactive features of Adobe Animate as buttons (Button) and a fragment of a video clip (MovieClip) to present a large amount of information in an organized and user-friendly way. This approach ensures that teachers can adapt educational materials to achieve their goals, while promoting active participation and deeper understanding of educational material by students.

Adobe Animate has been proven to be a powerful and effective platform for developing interactive educational resources designed to improve knowledge.

References

[1] Koval, T. & Besklinska, O. (2020). The use of visualization tools for the creation of electronic educational resources in the process of teaching mathematical disciplines in higher education institutions. Information Technology and Learning Tools, 77 (3), 145-161. DOI: 10.33407/itlt.v77i3.3411

[2] Bezuhlyi, D. & Yurchenko, A. & Udovychenko, O.. (2018). Review of tools of computer visualization to support educational material. Science and Education a New Dimension. VI(153), 11-14. DOI: 10.31174/SEND-PP2018-153VI63-02.

[3] Rybalko,O. (2016). Designing of electronic interactive table in math for elmentary school by means of Adobe Flash. Information Technologyand Learning Tools, 53 (3), 8-48. DOI:10.33407/itlt.v53i3.1373

[4] Derkachova, Olga & Ushnevych, Solomia. (2022). Use of Interactive Digital Posters as an Innovative Learning Technology in Ukrainian Higher Education (on the example of the course "Children's Literature and Methods of Teaching Literary Reading"). Journal of Vasyl Stefanyk Precarpathian National University. 9. DOI: 10.15330/jpnu.9.1.101-111

[5] Yurchenko A.O., Logvin A.V., Lashtun O.V., Bezverkha K.M., Semenikhina O.V. (2017) On the visualization of educational material by means of flash-technologies (on the example of studying trigonometric functions), Physical and mathematical education. 2017. Iss. 1 (11), 128-132. https://fmo-journal.org/index.php/fmo/Archive-2013-2020.

[6] Maryna Mamuta, Olga Rybalko (2019). Technology of creation of interactive electronics posters for the study of mathematics formulas. GESJ: Computer Science and Telecommunications No.2(57), 16-21. https://gesj.internet-academy.org.ge/ru/list_artic_ru.php?b_sec=comp&issue=2019-12

[7] Lytvynova S.G., Mamuta M.S., Melnyk O.M., Rybalko O.O. (2021) Interactive poster as a type of electronic educational resource / Problems of a Modern Textbook. K. Iss. 26, 130–143. DOI:10.32405/2411-1309-2021-26-130-142.

Article received: 2024-12-29