ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-515-x, Impact Factor: 9.23
American Academic publishers, volume 6, issue 03,2026

Journal: https://www.academicpublishers.org/journals/index.php/ijai

ISSUES OF PREPARING VIDEO LESSONS IN GEOGRAPHY FOR SECONDARY SCHOOLS USING ARTIFICIAL INTELLIGENCE

Jahongir Payazovich Musayev
National University of Uzbekistan named after Mirzo Ulugbek
Doctor of Pedagogical Sciences (DSc), Professor
Department of Physical Geography
Email: jahongirmusaev27@gmail.com
Phone: +998 97 007 22 34
Asliddin Rafiqjon ugli Arabboev
2nd-year Master's Student
Faculty of Geography and Geoinformation Systems
Email: Arabboevasliddin690@gmail.com
Phone: +998 88 482 88 44

Abstract

In the current era, artificial intelligence (AI) technologies are penetrating all spheres of life. In particular, they are contributing significantly to the development of modern pedagogical technologies in geography education. To increase educational productivity, it is essential to support and foster students' interest in the subject. This article investigates the methodological and technical aspects of creating video lessons using artificial intelligence (AI). It analyzes the role of AI tools in enhancing lesson effectiveness, the opportunities for reducing teacher workload, and the factors that increase student engagement in the subject.

Keywords

Veo 3.1, Sora Video, Kling AI, Kling Effects, Kling Motion, Pictory AI, Invideo AI, Lumen5, educational efficiency.

INTRODUCTION

Today, teaching geography through digital tools has become a significant trend. According to the Resolution of the President of the Republic of Uzbekistan, No. PP-358, dated October 14, 2024, **"On the approval of the Strategy for the development of artificial intelligence technologies until 2030"** [1], the wide-scale integration of AI technologies into the education sector is considered a priority. By creating engaging video lessons using AI programs, both teachers and students can enhance the overall effectiveness of the educational process. AI technologies impact the learning process in the following ways:

1. **Visualization:** Natural phenomena are vividly visualized before the student's eyes, aiding comprehension.
2. **Interactivity:** It makes the lesson more engaging. The primary goal of education is to spark and maintain students' interest in the subject.
3. **Adaptability:** It allows the educational process to be tailored to the individual needs and learning pace of each student.

LITERATURE REVIEW AND METHODOLOGY

"Pinnacle Studio" is a specialized software for video production. It is well known that many video resources related to geography are available online. However, not all segments of these existing videos align perfectly with specific lesson objectives. By utilizing the capabilities

ORIGINAL ARTICLE
INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE
ISSN: 2692-515-x, Impact Factor: 9.23
American Academic publishers, volume 6, issue 03,2026
Journal: https://www.academicpublishers.org/journals/index.php/ijai

of this software, teachers can extract the most relevant portions of a video and overlay them with their own narrated audio via a microphone to present customized content to students. [2]

Table 1

A Table of AI Tools for Geography Education

Technology Name	Functions and Applications in Geography	Key Features	Link
Veo 3.1	Cinematographic visualization of complex geographical processes (e.g., volcanoes, earthquakes).	4K quality video generation	leonardo.ai/veo-3
Sora Video	Creating long-duration (up to 1 minute) realistic nature scenes based on text descriptions.	High logical consistency	openai.com/sora
Kling AI	Controlling the movement of terrain and objects (e.g., river flow or cloud dynamics).	Kling Motion and Effects	klingai.com
Pictory AI	Automatically converting geographical articles or textbook passages into short videos.	Text-to-Video conversion	pictory.ai
Invideo AI	Generating topic scripts, selecting relevant footage, and providing AI voiceovers.	Fully automated lesson creation	invideo.io
Lumen5	Transforming geographical news and facts into social-media-style educational videos.	Slide-format videos	lumen5.com

Source: The information in this table was prepared based on data from the https://gemini.google.com/app website.

In the preparation of video lessons using AI technologies, **Veo 3.1** and **Kling AI** offer advanced, state-of-the-art generation capabilities. These technologies possess the unique feature of bringing reality to life by simulating real-world scenarios within a short timeframe (1-3 minutes).

RESULTS

Traditionally, software such as **Camtasia, OBS Studio, Canva, Capcut,** and **Inshoot** is utilized for preparing geography video lessons. In contrast, modern approaches allow for the creation of numerous video lessons and various forms of video content through artificial intelligence. Examples of such modern programs include **Synthesia, Pictory AI, Lumen5, HeyGen (Movio), Runway ML, LTX Studio, AI Studio/Revid AI,** and **Veo 3.1**. The sequence for preparing video lessons on the **Lumen5.com** website is as follows:

Step 1: Content Input. Upon logging into the program, three methods are offered for inputting the text that will serve as the foundation of the video:

- **Via URL:** *If the topic is located on a specific website (e.g., geografiya.uz), you simply enter the site's address.*

ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-515-x, Impact Factor: 9.23

American Academic publishers, volume 6, issue 03,2026

Journal: https://www.academicpublishers.org/journals/index.php/ijai

- **Copy-Paste:** *You can directly paste a lesson outline or summary from a textbook into the content block. (For example, Natural Zones of South America from 7th-grade geography).* [3]
- **Via AI (Script Composer):** *You enter the name of the topic, and the Lumen5 AI algorithm automatically generates and structures the text for you.*

Step 2: Selecting the Video Format. Depending on your educational objectives, you can select the appropriate video dimensions:

- **16:9 (Landscape):** *For displaying lessons via computers and projectors in the classroom.*
- **9:16 (Vertical):** *For sending to students via Telegram or other social media platforms.*

Step 3: Determining Design and Style. The program provides dozens of ready-to-use templates. *For geography, it is recommended to select templates in the **"Nature," "Documentary,"** or **"Educational"** styles. These templates ensure a combination of colors and fonts that make the text easy to read on the screen.*

Step 4: Storyboarding (Editing Scenes). Lumen5 divides the text into logical segments and creates a separate scene (slide) for each part:

- **Visual Replacement:** *Based on keywords in the text (e.g., "Mountains," "Ocean"), the AI automatically selects and places a matching video or image from the library. If you are not satisfied with the selection, you can upload your own preferred geographical images through the "Media" section.*
- **Text Editing:** *You can shorten the sentences displayed on the screen or highlight important terms using **bold** formatting to distinguish them.*

Step 5: Music and Voiceover

- **Background Music:** *Selecting music that matches the mood of the topic (e.g., calm or dynamic).*
- **Voiceover:** *Lumen5 provides the option to have the text read by an artificial (AI) voice or allows the teacher to record and upload their own voiceover.*

Step 6: Final Review and Export (Publishing). *You review the video using the "Preview" button. Once everything is finalized, click the "Publish" button. After the video is generated, it can be downloaded in **MP4 format** or shared directly with students via a link.* [4]

Figure 1. ***This video lesson was created by the author using the lumen5.com website.***

ORIGINAL ARTICLE
INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE
ISSN: 2692-515-x, Impact Factor: 9.23
American Academic publishers, volume 6, issue 03,2026
Journal: https://www.academicpublishers.org/journals/index.php/ijai

DISCUSSION

Pictory AI is one of the advanced generative artificial intelligence platforms that enables the automatic transformation of geography-related texts and articles into short, engaging videos. To access and utilize this platform, the following steps must be performed:

1. **Access and Authentication:** Enter the website and log in using an email address and a secure password.
2. **User Questionnaire:** Upon entering the platform, a preliminary questionnaire appears on the workspace to define the user's objectives.
3. **Workspace Setup:** After completing the questionnaire, select the **"Skip team creation"** button to proceed directly to the individual workspace.
4. **Content Input:** Enter the video title, the descriptive text (script), and select the desired video format.
5. **Format Conversion and Export:** Before downloading the finalized video, the platform provides the option to convert the project into various other formats as needed.

Figure 2. *This video lesson was created by the author using the pictory.ai platform.*

International research indicates that organizing the educational process in geography through the extensive use of multimedia tools increases student learning outcomes by 3–4%. However, there are several limitations to preparing geography video lessons using artificial intelligence technologies. Specifically, these include the following:

1. **Inaccuracies in certain data:** Potential errors in the information provided by AI.
2. **Subscription models:** Higher quality features are typically reserved for paid versions.
3. **Connectivity dependence:** The process is closely linked to high-speed internet access.
4. **The need for scientific depth:** A requirement to input more detailed scientific data for better results.
5. **Human oversight:** The necessity for teachers to identify and correct certain scientific inaccuracies during the video production process.
6. **Time constraints:** Limitations regarding the duration or processing time of the videos.

ISSN: 2692-515-x, Impact Factor: 9.23
American Academic publishers, volume 6, issue 03,2026
Journal: https://www.academicpublishers.org/journals/index.php/ijai

7. **Legal and ethical issues:** Concerns surrounding copyright and the ethical use of AI. The integration of AI technologies into geography lessons facilitates the development of core competencies in students. It significantly boosts learners' motivation and enhances the overall effectiveness of the educational process. Furthermore, these technologies provide students with the opportunity to develop mental agility, draw scientifically grounded conclusions, and conduct in-depth data analysis.

CONCLUSION

The creation and utilization of AI-driven video lessons in geography education are steadily increasing. By mastering the core principles of these technologies, we can broaden students' interest in the subject through high-quality video generation. These modern tools distinguish themselves from previous video production technologies through their multi-functionality. In a literal sense, it is appropriate to describe these technologies as a "teacher's assistant" in today's digital era. In summary, by refining the use of AI technologies in the modern educational environment, we foster the development of **21st-century skills** in learners. In light of this, the following recommendations are put forward:

Recommendations

1. **Accelerate the integration** of modern AI technologies into the geography teaching process to enhance educational delivery.
2. **Implement the development** of high-quality video resources for learners through advanced AI technologies.
3. **Pilot the educational methodologies** of foreign countries within general secondary schools to assess their effectiveness based on practical experience.

REFERENCES

1. Decree of the President of the Republic of Uzbekistan No. PP-358. (2024, October 14). *On the approval of the Strategy for the development of artificial intelligence technologies until 2030* [Sun'iy intellekt texnologiyalarini 2030-yilga qadar rivojlantirish strategiyasini tasdiqlash to'g'risida]. Retrieved from https://www.lex.uz/docs/-7158604#-7158826 (In Uzbek).
2. Geografiya.uz. (n.d.). *The role of information and communication technologies in geography education* [Geografiya ta'limida axborot-kommunikatsiya texnologiyalarining o'rni]. Retrieved from https://geografiya.uz/pedagogik-texnologiya/9529-geografiya-talimida-axborot-kommunikatsiya-texnologiyalarining-orni.html (In Uzbek).
3. Mirakmalov, M. T., Sharipov, Sh. M., Avezov, M. M., & Hojiyeva, M. T. (2022). *Geography: Textbook for the 7th grade* [Geografiya: 7-sinf uchun darslik]. Tashkent: Republic Education Center. (In Uzbek).
4. Gemini AI. (2024). *Interactive AI platform for educational content generation*. Retrieved from https://gemini.google.com/app