

# DEVELOPING THE TECHNOLOGY FOR CREATING, RECORDING, AND UTILIZING VIDEO LECTURES FOR DUAL EDUCATION

**D.O. Rakhimova**

Karshi State Technical University, Associate Professor of the Department of Business and  
Management

<https://doi.org/10.5281/zenodo.15659528>

**Abstract.** *The article highlights the role of telecommunications technologies in the higher education process and the prospects for organizing distance education as a result of the development of the global Internet system. The essence of an information-based society and information-based education systems is discussed, emphasizing the importance of distance education and remote teaching in a digital society. It is noted that during the COVID-19 pandemic, all branches of the education system worldwide transitioned to remote teaching. The necessity of implementing distance education as a distinct form of education in Uzbekistan is also substantiated.*

**Keywords:** *information and communication, telecommunications, traditional education, the Internet, modern teaching, distance education.*

## INTRODUCTION

In modern life, a new era of development in human civilization has begun—the era of the information society. This period is characterized by the rapid advancement of information and telecommunications, the widespread adoption of information technologies, the globalization of societal development processes, the formation of an international communication environment, and the evolution of education, communication, production, and the infosphere. The organizational and technological foundation of the information society is the global information network—the Internet [1].

The rapid development of telecommunications is creating innovative and convenient opportunities in various spheres of society, including politics, economics, education, culture, public services, and security. The new conditions of societal development demand the training of modern specialists using advanced teaching technologies that meet the requirements of an information-driven society [2].

The growth of the global Internet system has opened new prospects for evolutionary improvement in the world education system. Today, traditional teaching methods are being supplemented with new approaches based on the Internet, digital-computer networks, and telecommunications. Internet-based distance teaching and education not only perform a range of new functions but also require the practical application of key principles such as distributed collaboration, integration, and access to the international Internet network [3].

## RESEARCH METHODS

During the research process, the following methods were utilized: analysis of scientific and educational-methodological literature, pedagogical observation, comparative analysis, generalization, pedagogical experimental testing, and foresight methods.

(If you need a more formal academic version, it could also be phrased as: "The study employed an analysis of scholarly and instructional literature, pedagogical observation, comparative analysis, generalization, experimental pedagogical testing, and foresight methodologies.")

### **RESEARCH RESULTS AND DISCUSSION**

The filming procedure in 4K video studio technology requires the professor-lecturer to:

- Be thoroughly prepared on the subject matter,
- Demonstrate high speech culture with proper intonation and adherence to rhetorical rules,
- Ensure clear and flawless pronunciation.

Key requirements for the presentation:

- The essence of the subject should be explained primarily through diagrams and graphics.
- The professor must wear white or black attire during filming.
- Presentation materials must be of high quality and aesthetically designed.
- Text in the presentation should use white font on a black background.
- Content should avoid excessive density—text must be concise and not overcrowded.
- A "4x3" aspect ratio version of the presentation must also be prepared.
- To better illustrate the selected topic, diagrams, graphics, and the lecturer's verbal explanations should be utilized.

(Alternative formal phrasing: "The study findings emphasize that 4K video production necessitates meticulous preparation by instructors, adherence to professional presentation standards, and optimized visual aids to enhance pedagogical effectiveness.")

#### ***Requirements for Recording Video Lectures:***

1. The lecturer must wear white or black attire.
2. Presentation materials must be prepared with high quality and aesthetic design.
3. Text in the presentation must be in white font on a black background.
4. The presentation content should not be overly dense or text-heavy.
5. A "4x3" aspect ratio version of the presentation must also be available.
6. To better highlight the selected topic, diagrams, graphics, and the lecturer's verbal explanations should be used.

Research Results and Discussion Information can be presented in two different formats. First, using specialized OBS software where presentation materials are displayed on a secondary screen, allowing the lecturer to deliver video lectures to the audience while referencing the secondary screen through 4K video studio technology. The second method involves the lecturer transmitting their presentation materials via a special tablet, synchronizing them through OBS software before delivering them to the audience.

The video and audio lectures recorded using 4K video studio technology following the above procedure ensure that learners acquire sufficient knowledge in the subject matter. Video Conferencing Features Similar to audio conferences, video conferences serve specific purposes but differ through the use of video equipment. Their implementation doesn't necessarily require computer participation. During video conferences, remotely located participants can see themselves and other participants on television screens while simultaneously receiving audio

transmissions. Video conferencing reduces transportation and travel expenses. There are three common configurations for video conferencing:

1. One-way video and audio communication (signals sent in one direction, e.g., from project manager to executor)
2. One-way video with two-way audio communication (allowing participants receiving video to exchange audio information with the sender)
3. Two-way video and audio communication (a more complex setup where all participants engage in bidirectional audiovisual exchange)

**Video Conference Definition** A video conference refers to face-to-face meetings between people in two or more locations using conference equipment and networks. Based on participant locations, they can be categorized as point-to-point or multipoint conferences.

In daily life, people typically don't require special security, quality, or scale for video chats, using applications like WeChat or Skype. However, government agencies, enterprises, and institutions demand stable networks, reliable quality, formal environments, and professional equipment for business video conferencing, often requiring dedicated systems. Since these systems frequently utilize television displays, they're sometimes called video teleconferencing systems.

**4K Studio Technology Applications** Video and audio lectures recorded with 4K studio technology can be utilized in various conferences. During video conferences, we can implement live streaming through 4K studio technology, enabling lecturers to participate with their content. To date, numerous academic and practical conferences have integrated with platforms like Zoom using 4K studio technology, allowing professors to share high-quality content. These conferences have facilitated live streams not only domestically but also internationally, delivering premium content to audiences. Currently, over thirty scientific and practical conferences have successfully transmitted high-quality content using this technology.

**Platform Integration** The integration process continues with conference platforms like Microsoft Teams and Google Meet. Live presentations conducted on these platforms significantly improve learners' knowledge acquisition in specific fields. Simultaneously, content transmitted through 4K studio technology can be live-streamed to platforms like YouTube and Facebook, expanding its reach and accessibility.

This translation maintains all technical details while improving readability and professional tone. I've organized the content into clear sections with appropriate headings and maintained consistent terminology throughout. The translation accurately conveys all key points about 4K studio technology applications and video conferencing systems while making the content accessible to English-speaking readers.

### **Conclusion**

The study examined the technological processes of using telecommunication educational projects for organizing independent learning in dual education. The technology of recording video lessons in a 4K video studio for distance education was analyzed, and the research results were evaluated.

Key aspects investigated include:

- The structure and operational principles of the 4K video studio
- Technical parameters of the studio equipment
- Classification and working principles of digital devices in the 4K studio
- The procedure for recording video lessons using the 4K video studio

The findings provide valuable insights into optimizing distance education through advanced 4K video production technologies.

(Alternative academic version: "In conclusion, this research systematically analyzed... [maintains all technical details while using more formal academic phrasing]")

### **REFERENCES**

1. Abdukadirov, Abdukaxxor Abduvakilevich. Masofali ukitish nazariyasi va amaliyoti. monografiya / A. A. Abdukadirov, A. X. Pardayev; red. M. Sodikova. - T. : Uzbekiston respublikasi fanlar Akademiyasi " FAN " nashriyoti, 2009. - 145 s
2. Rakhimov, O., Ehsev, S., Latipov, S., Rakhimov, J. (2022). Positive and Negative Aspects of Digitalization of Higher Education in Uzbekistan. *AIP Conference Proceedings*, 2432, art. no. 030067. doi: 10.1063/5.0089690
3. Raximov O. D. Requirements and technology for creating e-learning resources //Sovremennoye obrazovane (Uzbekistan). – 2016. – T. 202. – S. 45-50.
4. Parpiyev A., Maraximov A., Hamdamov R., Begimkulov U., Bekmuradov M., Tayloqov N. Elektron universitet. Masofaviy ta’lim texnologiyalari O‘zME davlat ilmiy nashriyoti. -T.: 2008, 196 b.
5. Raximov O. D. et al. Modern educational technologies //Tashkent," Sciyence and Technology" Publishing House. – 2013.
6. Raximov O. D. i dr. Zamonaviy ta’lim texnologiyalari //T.:“Fan va texnologiya nashriyoti. – 2013.
7. «Podgotovka i provedeniye uchebnix kursov v zaочно-distansionnoy forme obucheniya» Metodicheskiye rekomendatsii prepodavatelyam. Izd-vo SPbGTU, 2000 Pod redaksiyey professora I.A. sIKINA
8. Rakhimov O. D. et al. Unused opportunities: distance education in Uzbekistan //Scientific journal. – 2021. – №. 3. – S. 58.
9. Rakhimov O. D., Chorshanbiyev Z. E. Prospects for the application of digital technologies in training the " labor protection" course //European Journal of Life Safety and Stability (2660-9630). – 2021. – T. 2. – S. 34-40.
10. «Internet obucheniye: texnologii pedagogicheskogo dizayna» Moiseyeva M.V., Polat YE.S., Buxarkina M.Y., Nejurina M.I., Moskva, 2004.