



Access to knowledge and education in the digital technologies era

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Abstract:

The digital era is a new stage in the development of mankind, associated with the construction of a global information society based on data and knowledge. Nowadays, we can say with full confidence that humanity has entered a qualitatively new phase of its development related to the development of a global information digital society, the concept of which has become a common platform for interaction between all subjects of the modern economy in order to solve the problem of introducing a new production cycle, based on concepts such as information, data, knowledge and communication. At the same time, the global digital society is a society of continuous learning. In fact, the new cultural and historical context of human development in regard to the upcoming and actually developing, before our very eyes, fourth industrial revolution involves the transformation of production, economy and social sphere based on the widespread use of digital and hybrid technologies, focused on the use and processing of large amounts of data for decision-making and generation of new knowledge.

The report examines the crisis experienced by the education system during the development of the digital economy. The main premise of this crisis is related to the following paradox: although the basis of the modern economy is the accumulation, processing and dissemination of knowledge, a fragmented perception of knowledge as such is developing in

society. The purpose of the study is to highlight the most important characteristics of the educational crisis, as well as to determine its specifics in relation to the Bulgarian context.

Keywords: Digital economy, authority of knowledge, commercialization of higher education, hybrid technologies.

Defining accessible knowledge in the digital age

In the digital era, the democratization of information is a key factor in society's progress and equality. True democratization, however, requires for information to not only be widely available, but also accessible in every sense of the word. This means creating knowledge that everyone can access, understand and use, regardless of their economic situation, physical ability, literacy level or geographic location. That's what makes knowledge really accessible.

Accessible knowledge must be free of charge, ensuring that there are no financial barriers, preventing individuals from accessing essential information. By providing content for free, we open the doors to education for everyone, regardless of their economic status. This approach is fundamental to creating a fair learning environment, in which everyone has the opportunity to learn, grow and thrive. Free access to knowledge is a commitment to universal access that reinforces the principle that information is a right, not a privilege.



Simplicity and clarity: accessible knowledge should be clear and apprehensible regardless of the educational background of the audience. This means presenting the information in a clear, jargon-free manner that is immediately understandable. By simplifying complex concepts and avoiding technical language, we ensure that the content is not only accessible, but applicable to everyone. This approach facilitates effective learning and implementation, enabling people to use information in their daily lives and make informed decisions. Ensuring simplicity and clarity in educational materials is crucial to truly democratize knowledge and empower communities worldwide.

Inclusive: accessible knowledge is inclusive, designed to be understood by all, regardless of literacy or disability. This includes providing content in an audio format, making it accessible through hearing for those who cannot read or write, and for communities that have traditionally relied on oral communication. This approach

ensures that everyone, regardless of their educational background or sensory abilities, can access and benefit from the information provided.

Localized and culturally relevant: accessible knowledge is not only provided in users' native language, but is also deeply integrated with their cultural context. This involves more than translation — it requires adapting the content to align with local customs, beliefs, and everyday realities. By ensuring that information resonates with the audience's cultural background, including the nuances of tradition, religious beliefs, social practices and historical perspectives, we improve understanding, engagement and relevance. This dual approach of localization and cultural significance ensures that educational materials are not only accessible, but also meaningful and respected within the community. This encourages deeper engagement and ensures that the provided information becomes a transformative tool for empowerment.

Technologically relevant: in today's digital landscape, accessible knowledge must effectively use the technology available in the infrastructure of each community. This means implementing both online and offline solutions tailored to local conditions, such as downloadable content for areas with intermittent internet or solar-powered devices in regions where reliable electricity is lacking. By adopting technologically appropriate strategies, we ensure that our educational resources are not only accessible, but also practical and sustainable, overcoming traditional barriers through innovative delivery methods. This approach greatly expands the reach and impact of our content, making basic knowledge accessible in the most remote or technologically limited environments.

These characteristics ensure that knowledge is not just a static commodity, but a dynamic resource that adapts to the needs and realities of its users. By meeting these criteria, accessible knowledge becomes a powerful tool for empowerment and change.

Accessible knowledge is not only a benefit, but also a necessity for the equitable development and empowerment of global communities. Its importance can be assessed through several influential dimensions:

Empowerment through informed decision-making: access to information gives people the knowledge they need to make informed decisions affecting their health, education and economic well-being. This empowerment promotes autonomy and self-sufficiency, allowing people to actively shape their future.

Promoting equality and inclusion: by providing equal access to information, especially for underrepresented and marginalized groups, accessible knowledge acts as a leveling force in society. It ensures that everyone, regardless of their economic status, location or literacy level, has the opportunity to learn, grow and contribute to their community.

Facilitating sustainable development: accessible knowledge supports the achievement of the Sustainable Development Goals by disseminating critical information on topics such as health, environmental protection and gender equality. Educated communities are better equipped to face challenges and implement sustainable practices that have long-term benefits.

Improving community health and well-being: knowledge on Health, Nutrition and hygiene directly translates into better health outcomes. When communities understand disease prevention and health promotion, they can reduce disease spreading, improve quality of life, and reduce healthcare costs.

Promoting economic opportunity and innovation: education is a catalyst for economic growth. Access to business knowledge, agricultural education and skills development allows individuals and communities to pursue new opportunities, innovate and stimulate economic development.

Building sustainable communities: informed communities are sustainable communities. Knowledge of disaster preparedness, Environmental Protection and community organizing helps populations adapt to challenges and recover from disasters more effectively.

By addressing these critical areas, accessible knowledge not only transforms individual life, but also catalyzes broad societal progress. Its impact extends far beyond the immediate beneficiaries, reaching out to bring about positive change for entire regions and generations.



2. Modern approaches and practices for e-learning in Bulgaria

Modern approaches to the realization of e-learning are connected and directly depend on innovative information and communication technologies. The European Commission's Digital Education Action Plan " focuses specifically on the potential of newly created digital technologies to achieve high-quality education and training." (https://www.ipa.government.bg/sites/default/files/analitichen_doklad_digitalni_formi_na_uchene.pdf). A personalized approach is brought out, which makes possible the implementation of effective standards of educational practices in the classroom by:

- * smart guides;
- * chatbot;
- * learning through open data;
- * learning through computer animation;

- * online networking training;
- * virtual laboratories;
- * electronic educational games;
- * drone-based training;
- * multisensory learning;
- * learning through social media;
- * learning through robots;
- * inverted classroom;
- * electronic distance learning platforms.



Useful online tools for education and training are:

1. Digital learning management tools:

- Moodle - free open source software designed to help teachers create effective online courses;

- Google Classroom - help students and teachers organize tasks, strengthen cooperation and promote better communication;
- Docebo - a service offering a training management system focused on professional development;
- Blackboard Enclose solutions, resources and tools to help deliver quality online learning;
- Edmodo is a tool for teachers to send messages, share learning materials and make learning accessible to students everywhere;
- Skooler is a system exclusively and fully integrated with apostomatic 365;
- Ekstep, offering a collection of learning resources for literacy and numeracy and the ability to create new;
- Cell-Ed is created to meet the needs of adult learners;
- LabXchange is an online community for learning, sharing and collaboration;
- Quizlet - a mobile and web-based learning application that allows learning and teaching through tools and games.

Communication tools:

- Zoom - A tool that allows video communications, video and audio conferences, chats and webinars;
- Skype - Free tool for making videos and conversations with each other as well as group;
- Microsoft Teams - A platform that combines workplace chat, video meetings and file storage;
- Google Hangouts Meet - Enable text, voice or video chats, to each other or in a group;
- Dingtalk - audio and videoconferencing system.

Mass Open Online Courses:

- Canvas offers free online courses and classes aimed at professional development of teachers;
- Alison is a standalone course developed by subject specialists, with interactive and enriched training;
- Coursera gives access to more than 2,000 courses and specializations developed by the world's best universities;
- EdX 2,000 provides online courses from 140 leading institutions around the world, offering a chance to acquire new skills;
- Future Learn enclose online courses aimed at further study, building professional skills and connecting with experts;
- Funzi provides training and educational programs through a mobile training service;
- Empower supports collaboration and sharing of experience between European universities and providers for the latest developments in online, open and flexible education.

The forms of Organization of training in a modern digital environment are a fundamental core for conducting correct and consistent information and

communication technologies: traditional forms of training; virtual lectures; consultations; seminars. When conducting a lesson on new knowledge, the opportunity for adequate and appropriate illustration of the teaching material should be provided. The teacher should be technically prepared to depict complex phenomena and processes and to explain their essence to the students. In electronic consultations, there are various platforms for online communications, such as applications, e-mail, etc. for providing the opportunity for the student to ask questions, send homework, interact with the teacher. Online seminars are characterized by science, evidence, novelty, independence, and they can be postponed in time or held in real time.

In Bulgaria, there are numerous options for conducting classes through online platforms. One of them is a Google Classroom, which is a shared space for teachers, students and parents. There is an opportunity to exchange ideas, files, important messages. Also, the Internet search engine also offers an Google forms where anyone can make and share a survey, questionnaire or test.

3. The future of education in the digital age

Digital technologies drive innovation in every aspect of life, including education. Technologies are not a magic bullet. Just as they offer great benefits, they also create challenges that educators should explore and address to help shape the future of education for the benefit of all.

Covid-19 pushed us to accelerate the digital transformation of education around the world. We witnessed incredible resilience from students and teachers as they adapted to the new normal.

More than 100 million students, teachers and education staff across the world have been affected, and digital technologies have been used on a huge and unprecedented scale. There is a paradigm shift in the way students learn, requiring a more independent but disciplined approach. Students, university students and teachers not only have to contend with new technologies, but also with a different educational framework.

There are many positives to this change, and innovation is the key to success. As we look forward to the future, education and training will continue to evolve, moving from a pure face-to-face tutoring, to a mixed combination of physical classroom and online. This will affect many aspects of teaching and learning, including, perhaps, how learners are assessed.

One thing is certain; learners will need more autonomy to stay focused on learning, which will require support and healthy, safe and reliable learning spaces. As educators, we need to create these spaces, offer the necessary support and ensure that learning content is delivered accordingly, to fit this new way of learning.

Educators, local authorities and governments are looking to the future and how they can build further on the foundations that have been already established in 2020. Many organizations, such as Microsoft, Zoom, and Google, have offered vital support to schools and universities to enable distance learning.

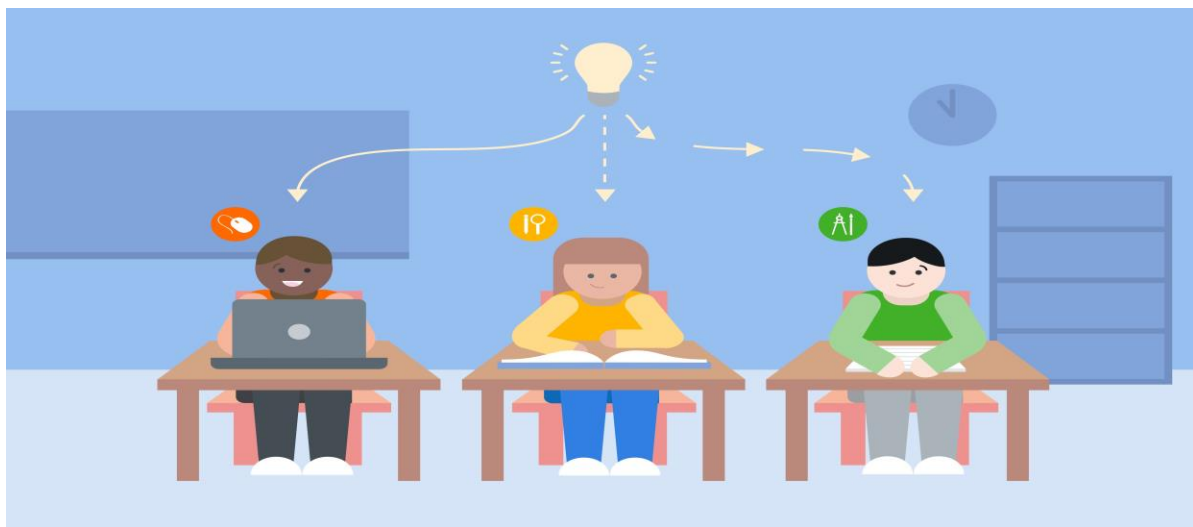
To ensure that everyone can thrive in the digital age, proper education and training is vital. This will include the use of digital technologies to teach digital skills and provide

digital literacy for the future. Innovation is imperative to ensure that this happens and for people to be able to tackle the challenges they will face.

In the digital era, the educational landscape is in the process of transformative change. With the rapid development of technology, educators and policymakers are grappling with the question of what is the future of education.

1. Personalized training

One of the most promising aspects of the future of education is the rise of personalized learning. With the help of technology, teachers can tailor instructions to meet each student's unique needs and interests. Adaptive learning platforms, intelligent learning systems, and data analysis allow educators to gather information about student progress and provide targeted interventions. This personalized approach encourages greater engagement, motivation and academic success.



2. Mixed learning environment

Combining traditional classroom learning with online learning is another significant trend in the future of Education. Blended learning environments combine the best of both worlds using face-to-face interactions and digital tools. Students can access resources, collaborate with peers, and engage in self-study through online platforms. This approach encourages the flexibility, individualization and development of basic digital skills.



3. Virtual and augmented reality

Virtual and augmented reality technologies have huge potential to transform the learning experience. Virtual reality can transport students to immersive environments, allowing them to explore historical landmarks, participate in simulated science experiments, or interact with complex concepts. Augmented reality covers digital information in the real world, improving the practical learning experience. These technologies make learning more engaging, interactive and experimental.



4. Cooperation and global connections

In the digital age, education transcends geographic boundaries. The technology enables students to connect and collaborate with peers around the world, fostering cultural understanding and global citizenship. Virtual classrooms, online discussion forums and collaborative projects remove barriers and facilitate intercultural exchange. This interconnectedness prepares students for a globalized workforce and cultivates empathy and appreciation for different perspectives.

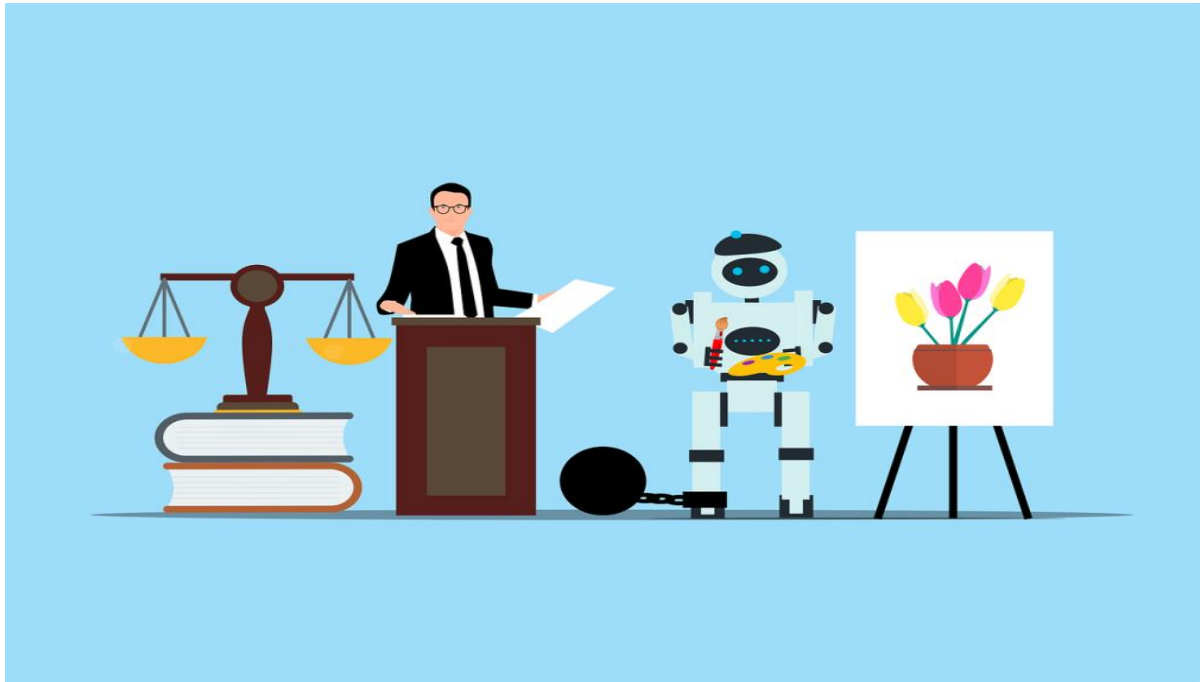


5. Lifelong learning and skills development

As the nature of work evolves, the future of Education highlights the importance of lifelong learning and skills development. Technology equips people with the tools to improve and retrain throughout their lives. Online learning platforms, micro-credentials and Mass Open Online Courses provide accessible opportunities to acquire new knowledge and competencies. This change enables people to adapt to the rapidly changing labour market and promotes a culture of continuous learning.

7. Ethical and responsible use of technology

As technology becomes increasingly embedded in education, ethical considerations must come to the fore. Teachers should address issues related to privacy, data security and digital citizenship. Training students and students in the responsible use of technology, critical thinking and media literacy skills is becoming imperative. By promoting ethical and responsible digital practices, education in the digital age can enable people to navigate the complexities of the online world.



The future of education in the digital age is promising. Personalized learning, blended learning, virtual reality, collaboration, lifelong learning, data-based decision-making, and the use of ethical technologies shape the educational landscape. By embracing these trends, we can foster a generation of learners who are adaptable, creative and equipped with the skills needed to thrive in an ever-changing world. The future of education is bright and with the right approach we can unlock the full potential of technology to transform teaching and learning for the better.

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References

Angelov, Grudi. Information environment and services-a prerequisite for group work in management structures. Proceedings of the national scientific conference with international participation, the Society of knowledge and humanism of the XX Empire, Sofia, University of library studies and information technologies, academic publishing house "about letters – about letters", 2023, P. 429-437.

Angelov, Grudi. Challenges to higher schools conducting training in the direction of "national security". "Academic partnerships in the field of national security: Discussion Round Table"; Shumen: University Publishing House "Bishop Konstantin Preslavski", 2022, P. 6-10.
Hemphill, H. H., Mccaw, D. S., & Hemphill, I. S. transforming school organizations into dynamic organisms. 32nd annual, 71.

Kalolo, J. F. (2019). Digital revolution and its impact on education systems in developing countries. Education and Information Technologies, 24, 345-358.

Lazarova, S. (2012). Training in a digital environment. V. Veliko Tarnovo: UI " SV. St. Cyril and Methodius"

Lazarova, S. Lazarov, L. (2010). Audiovisual and information technologies in training. V. Veliko Tarnovo: UI " SV. St. Cyril and Methodius"

Digital Education Action Plan (2021-2027)). [online]
https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_bg

Salvo, Ana Moreno. Today, technology-driven transformation has become an urgent priority. (2023) <https://impulseducacio.org/en/quality-education-in-the-digital-age/>

Sokolov, Ivan. Basic steps for successful realization of Public-Private Partnership, "Hermes"2013, Plovdiv.

Sokolov, Ivan. Public-private partnership in theoretical and practical context: a scientific monograph. IK "Hermes" 2019, Plovdiv.