ACCESSIBILITY

The accessibility in VLE can be viewed through many different contexts. The first of them refers to the technical and technological aspects of ensuring accessibility on digital platforms, but also creating content that will be suitable for the virtual environment. The next aspect includes information and communication assumptions of unlimited access to educational materials within higher education institutions, which is at the heart of the concept of open science and open data. Accessibility in VLE includes the sociological aspect through ensuring diversity, equity and inclusion. These factors are an indicator of the state of development of democratic systems within individual countries, as well as indicators of development of HEI. Furthermore, these indicators are also necessary for the inclusion of vulnerable and underrepresented groups in society (e.g., women, migrants, refugees, the elderly).

Designing educational materials for VLE is a demanding multidisciplinary process based on innovation and creativity of authors (creators) of the content, and it is also necessary to take the perspective of the other stakeholders – consumers of content and their desires, needs and expectations. We must therefore not to forget the pedagogical aspect, which aims to strengthen the digital competencies of teachers in a virtual environment that is significantly different from traditional ways of learning and teaching. The change in the educational paradigm in many countries has been driven by the Covid-19 pandemic, which has fundamentally changed the way we live and educate.

What is the accessibility in an online environment?

Accessibility in the online environment primarily requires knowledge of the characteristics of online media. Furthermore, creating content for online media is one of the following challenges as they significantly differ from traditional media such as books, printed materials or television. Different forms of communication are used, which differ depending on the size of the text, additional materials such as video or audio. A key indicator of success is interactivity and reach in the target group.

Resources

► The Dimensions of Accessibility to Online Information Systems: Implications for MIS Implementation (Culnan, 2015)
► Digital accessibility: Challenges and opportunities (Kulkarni, 2019)

What is accessible learning?

Accessibility in learning and education encompasses concepts such as open science, open resources as well as open access to sources of information. "Open Science is the practice of science in such a way that others can collaborate and contribute, where research data, lab notes and other research processes are freely available, under terms that enable reuse, redistribution and reproduction of the research and its underlying data and methods" (Foster, 2021).

"Open Access (OA) is free, uninterrupted, and uninterrupted network access digital scientific information which allows read, store, distribute, search, retrieval, indexing and / or other lawful use. Free in this context means permanently free of any restrictions and conditions for access and use" (Croatian Academy of Sciences and Arts, 2021.) Ensuring open access is based on strategic documents that are incorporated into national legislation, all with the aim of providing equal access to scientific information for all. We should also mention the readiness of educational institutions to be involved in this complex process by creating digital academic repositories. As examples of good practice in Croatia, we are mentioning the following OA infrastructure: CROSBI, HRČAK and Open Science data base in Finland.

Resources

► Guidelines for accessible information (European Agency for Special Needs and Inclusive Education, 2023)
► Assessing the accessibility of the online learning (Badge, Cann, Dawson & Scott, 2008)
► Creating Accessible Learning Environments (Thurber & Bandy, 2018).
► The EU's open science policy (European Commission, 2019)
► Guidelines for open educational resources (OER) in higher education (UNESCO, 2011)

Best practices

- ► [HRČAK – Portal of Croatian scientific and professional journals](#) (HRČAK, 2021)
- ► [Croatian Scientific Bibliography CROSBI](#) (Hrvatska znanstvena bibliografija, 2023)
- ► [Open Science data base Finland](#) (Secretariat for the National Open Science and Research Coordination Federation of Finnish Learned Societies, 2023)

Accessibility in e-learning

Accessibility in the online environment is important for the successful implementation of e-learning, not just of students with special needs but of every learner. It is important to ensure equal opportunities for all considering the technical and pedagogical aspects as well as aspects related to the content.

Examples of **technical** accessibility in e-learning

- ► online learning environments and materials can be used e.g. with different tools such as screen readers.
- ► The text and background should have an adequate contrast and the used fonts are large enough.
- ► Audio files / videos include transcripts

Examples of **pedagogical** accessibility in e-learning

- ► the learning content is available in different formats to support learners who benefit from auditive vs. visual learning materials
- ► students are able to choose whether they e.g. produce the final exam in a form of a video, text or audio format

Examples of **content-wise accessible e-learning**

- ► the learning content (e.g. text) is divided into logic units
- ► the used language (images etc) is clear
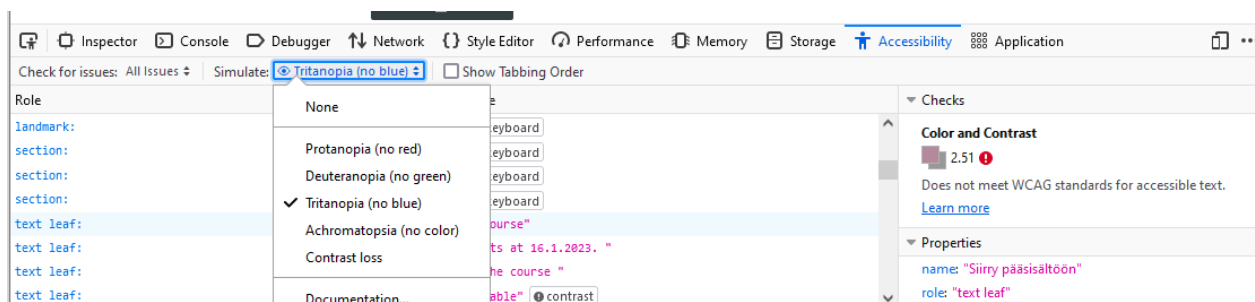
An example of a technical accessibility check. Many browsers allow users to issues related to accessibility of a website and e.g. simulate types of color blindness. E.g. in Firefox this tool is available at 'More tools' > 'Web developer tools' > 'Accessibility'.

Resources

- ► Accessibility Checklist for Online Course Development (Menedez, 2023)
- ► North Carolina Community College System VLE – Online Course Accesibility Checklist (NCCS Virtual Learning Community, 2014)
- ► Accessibility for online courses (University of Michigan, 2023)

Best practices (videos)

- ► eLearning accessibility: Busting the top 10 myths (The training, Learning and Development Community, 2022)
- ► Google Classroom accessibility empowers inclusive learning (Google, 2020)
- ► Reimagine: Supporting inclusive & accessible learning (Microsoft Education, 2022)

How can e-learning improve accessibility of education?

Ensuring diversity, equity and inclusion

Ensuring diversity, equality and inclusive education has become an imperative for many countries around the world. These are the concepts on the basis of which the democratic structure of individual countries and the development of their educational system, the degree of human freedoms, but also the existing cultural patterns are assessed. A comparative overview of the European approach to this issue, as well as the American and global ones, helps to understand the differences we strive to overcome, all with one and the same goal – ensuring a fair and accessible education for all.

Resources
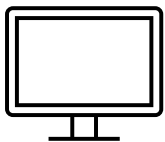
- ► Assessing Accessibility: How Accessible are Online Courses for Students with Disabilities? (Massengale & Vasques III, 2016)
- ► Equity and Inclusion in Higher Education Strategies for Teaching (Kumar & Refaei, 2021)

Best practice

- ► NERCHE Self-Assessment Rubric for the Institutionalization of Diversity, Equity, and Inclusion in Higher Education (New England Resource Center for Higher Education, 2016)

Accessibility for vulnerable groups in society

Inclusion in the higher education system implies also the inclusion of vulnerable and marginalised groups in society. Those are people with certain cognitive or physical disabilities that may diminish their competitiveness in a demanding labour market, but not their desire to achieve equal opportunities. The creators of educational content must be aware of this and try to adapt it to the age, but also to the difficulties of certain social groups.

Vulnerable groups include refugees and migrants who, due to their poor socio-economic status, have a necessity for lifelong learning with the aim of faster and more successful integration into cultures and societies that are quite different from their own.

Resources

- ► ICTs in Education for people with disabilities (UNESCO, 2011)
- ► Assessing Accessibility: Are Online Courses Better Than Face-to-Face Instruction At Providing Access to Course Content for Students with Disabilities? (Massengale & Vasquez, 2016)
- ► Free Digital Learning for Inclusion of Migrants and Refugees in Europe (Castaño-Muñoz, Colucci & Smidt, 2018)

Best practices

- ► Inclusive distance learning for students with disabilities at the University of Padua (Nota, 2020)
- ► Social inclusion of refugees into higher education: policies and practices of universities in Norway (Abamosa 2021)
- ► Promoting Effective Integration of Migrants and Refugees in Education, Experineces for Spain, Serbia and Belgium (Bunar, 2019)
- ► What is Digital Accessibility? (Deque Systems, 2019)
- ► Making Your E-Learning Courses Accessible for Those With Disabilities (E-Learning Uncovered, 2017)

How to create accessible virtual learning materials?

Designing educational materials for e-learning requires a multidisciplinary approach and cooperation of experts from different fields – informatics, communication sciences, pedagogy, speech therapy, psychology, sociology, economics, etc. Namely, knowledge transfer through modern mass media and forms of communication (video, blog, vlog , podcast) requires special skills: from storytelling, editing and editing to approaching the content of abstract courses in a simple and understandable way. Taking the perspectives of students and the audience in general can be a useful path, but the need for continuous research of the user experience should certainly not be overlooked.

Universal Design for Learning (UDL) principles form a good basis for creation of accessible learning materials. This way the teacher does not necessarily need the information on students' special needs in

case the learning contents and environments have been planned as accessible from the get-go. Please refer to the section on "Learning Design" related to this topic in more detail.
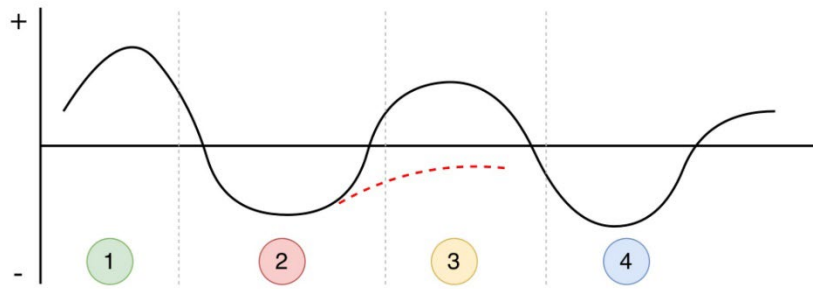

Photo 1: Cultural adaptation U curve by Sverre Lysgaard. Source: Wikimedia.

Attaching descriptive captions to photos makes them more accessible.

The Zoom video conference tool enables live captioning as well as the possibility to save the transcript for later use.

Zoom video conference tool displaying live captioning while the presenter is talking.

Resources

- ► A Tutorial for Making Online Learning Accessible to Students with Disabilities (Burgstahler, 2020)
- ► Nordic Rebels: A Blended Approach to Fix Higher Education (Lehtonen, Chew, Schilli & Varadarajan, 2019)
- ► Digital Competence – Providing Tools to Create an Inclusive eLearning Course (University of Tasmania, 2022)
- ► How To Achieve Accessibility In eLearning: 4 Principles (Bleich, 2023)