LEAD-ME COST ACTION CA19142 Delivery 7

# Higher Education Accessibility: Report on best practices and recommendations

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# ABSTRACT

Since the late 1990s universities and institutions of higher education have maintained an online presence in the form of a website. Many early versions of these websites did not offer what is now considered an equitable online experience to all users. However, in recent years much more attention is being paid to the accessibility of websites. In order to comply with European legislation passed in 2019, public sector organizations and private companies and organizations are required to check the accessibility of their websites, mobile apps, and media content. This article aims to offer insight into the accessibility of university and college websites by reporting on the actual performance of individual websites. The researchers used Google Lighthouse (an open-source online tool) to measure the quality of individual web pages checking for: performance, accessibility, best practices, search engine optimisation and overall performance. Preliminary findings suggest that there is a significant difference in the overall accessibility scores between universities and colleges in Northern European and Southern European regions. This dataset will enable stakeholders to identify how an institution is performing when compared with similar organizations and potentially serve as a catalyst for changes and improvements to individual performance scores. In addition to the accessibility of websites this research also identified the accessibility and inclusiveness services at the universities which replied to our online survey.

# Introduction

Accessibility is the practice of making web content available to as many people as possible, including those with disabilities. An institutional website that is truly accessible helps to create a culture of accessibility throughout the institution. In today's digital age, websites have become an essential tool for universities and colleges to communicate with students, faculty, staff, and the wider community (Bennett et al., 2017; Saichaie & Morphew, 2014). Creating a culture of accessibility at higher education starts with websites that are designed and developed with the needs of all users in mind. When an institution sets out to offer a website that prioritises a high level of accessibility it is possible to achieve an exemplary accessibility score. A 2008 study which found that although accessibility is a prominent issue for the majority of university websites, and across the World Wide Web (www), the researchers found one institution which satisfied all World Wide Web Consortium (W3C) guidelines earning a perfect Triple A (Harper & DeWaters, 2008). It is important to understand why website accessibility is critical for higher education institutions. Universities and colleges have a responsibility to provide equal access to education and opportunities for all students, including those with disabilities (Goode, 2007; Lourens & Swartz, 2020). Attending a university or institution of higher education can also assist people with disabilities in overcoming challenges, attaining increased independence, and improving their overall quality of life (Firat, 2021; Järkestig Berggren et al., 2016). Website accessibility ensures that students with disabilities can access the same information, resources, and services as their non-disabled peers. Such accessibility measures also ensures that faculty and staff with disabilities can fully participate in academic and administrative activities. Moreover, website accessibility is essential for compliance with disability discrimination laws, such as the European Web Accessibility Directive (2019). In order to create a culture of accessibility at higher education, institutions should start by ensuring that their websites are accessible to all users. This research aims to offer insight into the accessibility of university and college websites by reporting on the actual performance of individual websites. This dataset will allow stakeholders to identify how their institution is performing when compared with similar organizations and potentially be a catalyst for/facilitate changes and improvements to individual performance scores.

## Web Accessibility Directive

The European Web Accessibility Act was published in 2019. The Act emphasizes the importance of accessibility for website content, ensuring that users with disabilities are able to use their assistive technologies. The Directive, which mandates compliance with the accessibility requirements outlined in Section I of Annex I, also plays a critical role in

promoting equal access to online resources and services. This Directive has been transposed into law at a national level across the 27 member states of the EU. All public sector bodies, including universities and schools, must ensure that their websites and mobile applications are accessible to individuals with disabilities. EU member states must have a named organisation which is responsible for monitoring compliance with these regulations, and websites must adhere to the POUR principles of perceivability, operability, understandability, and robustness as detailed in the Web Content Accessibility Guidelines 2.1. This effort will ensure a positive online experience for all users, particularly students with disabilities who will benefit from increased participation in class.

## Best Practice

Websites owned by Higher Education institutions must be as accessible as possible and must have an accessibility statement outlining  a paragraph or so of text that providing information regarding the level of accessibility that the website has achieved (is targeting). Accessibility statements serve several purposes. An accessibility statement conveys to the general public that an institution values accessibility and the diversity of needs that is found in the general population and also furnish information about the accessibility of the institution's content (Providenti, 2005; Vollenwyder et al., 2023; Yesilada et al., 2015). As previously stated, in a growing number of countries, providing an accessibility statement may be mandatory, particularly for public bodies in countries that have implemented the EU Web Accessibility Directive (Marcus-Quinn, 2022). Accessibility statements vary greatly in terms of content.

## Actual Practice

Over the last 20 years there has been an improvement in websites in general (Beaird et al., 2020; Bleier et al., 2019).The guidelines provided by the World Wide Web Consortium (W3C) commonly known as Web Content Accessibility Guidelines (WCAG) have certainly helped organisations to improve accessibility as the guidelines provide a checklist for necessary accessibility considerations.  However, the challenge remains for educational institutions to carry out web accessibility projects to comply with WCAG and other web accessibility standards and current laws of educational inclusion (Kuppusamy & Balaji, 2023). There have been many studies carried out which have looked at the how accessibility can be built into the design process of websites for educational institutions and many of these studies conclude that by adopting automatic evaluation tools for website construction accessibility

scores could be greatly improved (Campoverde-Molina et al., 2020; Macakoğlu et al., 2022). A case study of college websites published in 2022, which analysed 44 college websites, using two automatic accessibility evaluation tools (TAW and aXe) found a number of common issues across all websites. These included: colour contrast, alternative texts, link visibility, list elements, lang attributes, form labels, captions, and marquee elements (Ismail & Kuppusamy, 2022). The average institution in this 2022 study needed to address these relatively basic issues before the accessibility of the website could be improved and the online experience enhanced for everyone.

## Who is responsible for compliance?

Each country has a body or organisation tasked with ensuring compliance. How this task is managed depends on the preferences of each member state. Monitoring, reporting and enforcement can be the responsibility of one agency or many agencies. For example, in Ireland there is one agency responsible for monitoring, another for reporting and a third is responsible for enforcement. In Germany compliance is handled at both a federal and at a state level with the involvement of multiple agencies. There is information on member states available at https://digital-strategy.ec.europa.eu/en/policies/web-accessibility-monitoring and the table below provides an overview of the organisations responsible for monitoring for each EU member state. However, there are gaps in the data.

Table 1 Organisations responsible for monitoring compliance in EU member states

| State | Organisation Responsible for Monitoring Compliance |
|---|---|
| Austria | Austrian Research Promotion Agency https://www.ffg.at |
| Belgium | Federal Public Service Policy and Support, Directorate-General Digital Transformation https://dt.bosa.be/language_selection |
| Bulgaria | State e-Government Agency (SEGA) https://e-gov.bg/wps/portal/agency/home |
| Croatia | Not easily found online. There may be localised information available. Details not available on https://digital-strategy.ec.europa.eu/en/policies/web-accessibility-monitoring |

| | |
|---|---|
| Cyprus | Monitoring Committee (no url)<br>Enforcement: Department of Information Technology Services, Deputy Ministry of Research, Innovation and Digital Policy<br>https://dits.dmrid.gov.cy/dmrid/dits/dits.nsf/home/home?openform |
| Czech Republic | Ministry of the Interior<br>https://www.mvcr.cz/clanek/pristupnost-internetovych-stranek-a-mobilnich-aplikaci.aspx |
| Denmark | Agency for Digitisation https://digst.dk |
| Estonia | Consumer Protection and Technical Regulatory Authority)<br>https://ttja.ee |
| Finland | Regional State Administrative Agency for Southern Finland)<br>https://www.saavutettavuusvaatimukset.fi/yhteystiedot/ |
| France | Directorate General for Social Cohesion<br>https://sante.gouv.fr/ministere/organisation/organisation-des-directions-et-services/article/organisation-de-la-direction-generale-de-la-cohesion-sociale-dgcs |
| Germany | Federal Monitoring Body for Accessibility of Information Technology)<br>https://www.bfit-bund.de/DE/Home/home_node.html |
| Greece | Ministry of Digital Governance, General Secretariat of Digital Governance and Simplification of Procedures, Directorate of Digital Strategy, Department of eAccessibility and Social Affairs<br>https://mhdisef.mindigital.gr |
| Hungary | Governmental Agency for IT Development<br>https://kifu.gov.hu/en/main-page/ |
| Ireland | *Údarás Náisiúnta Míchumais* (The National Disability Authority, NDA) |
| Italy | Agency for Digital Italy<br>https://www.agid.gov.it |
| Latvia | Ministry of Environmental Protection and Regional Development<br>https://www.varam.gov.lv/lv |

| | |
|---|---|
| Lithuania | Information Society Development Committee<br>https://ivpk.lrv.lt |
| Luxembourg | Information and Press Service<br>https://sip.gouvernement.lu/fr.html |
| Malta | Malta Communications Authority<br>https://www.mca.org.mt |
| Netherlands | Minister of the Interior and Kingdom Relations<br>https://www.rijksoverheid.nl/ministeries/ministerie-van-binnenlandse-zaken-en-koninkrijksrelaties |
| Poland | Minister responsible for informatisation: currently the Minister of Digital Affairs<br>https://www.gov.pl/web/cyfryzacja |
| Portugal | Administrative Modernization Agency, Public Agency<br>https://www.ama.gov.pt |
| Romania | Romanian Agency for Digital Agenda<br>https://www.aadr.ro |
| Slovakia | Office of the Deputy Prime Minister of the Slovak Republic for Investments and Informatization: Government and Public Sector IT Division, Architecture and eGovernment Department) https://www.mirri.gov.sk |
| Slovenia | Information Security Administration of the Republic of Slovenia)<br>https://www.gov.si/drzavni-organi/vladne-sluzbe/urad-vlade-za-informacijsko-varnost/o-uradu/ |
| Spain | Ministry of Territorial Policy and Civil Service) https://mpt.gob.es/index.html |
| Sweden | Agency for Digital Government https://www.digg.se |

# General Aims

The first goal of this project was to check the accessibility of the universities' main web pages and list the main technical accessibility issues on those web pages. For the automated evaluation of universities' main web pages, we used Google Lighthouse v100.0.0.3 an open-source, automated tool for improving the quality of web pages. We calculated the Lighthouse Accessibility score which is based on a weighted average of all accessibility audits. Weighting is based on user impact assessments based on WCAG 2.0 level A&AA rules.

The second goal was to collect the information of what support is offered by the universities to students with disabilities. We aimed at broadening the information revealed on the websites, and that is why we used it as a help in constructing questions and their possible answer scales for the second study. The results of this desk analysis is presented together with the complete answers collected from the universities' offices offering support for people with disabilities.

To reflect on these two goals, the project consisted of two studies. The first study (desk research) was focused on the evaluation of accessibility of universities' main web pages. The second study (online survey) focused on gathering information from the universities' offices responsible for accessibility services. We selected up-to seven top-ranked universities in each of 36 European countries (based on the Times Global Higher Education Report 2023 http://www.timeshighereducation.com) resulting in total of 160 European Universities.

# STUDY 1: Desk research

## Method

This desk-based research study, conducted during January-March 20213, has drawn on information publicly available on university and college websites. There were 160 Universities included in the study. This included 6 top-ranked universities (based on the Times Global Higher Education Report http://www.timeshighereducation.com) in each of 27 European countries. A total of six independent coders (student volunteers) used Google Lighthouse for the evaluation of the accessibility score for each website in the study. Google Lighthouse is an open-source, automated tool for improving the quality of web pages. This tool audits for performance, accessibility, and more. The Lighthouse Accessibility score is calculated based on a weighted average of all accessibility audits. Weighting is based on user impact assessments (based on WCAG 2.0 level A&AA rules).

## Results

The results of the first study (Accessibility test of the Universities' main websites) are described using quantitative descriptive statistics. While the results of the study 2 of the study are mainly qualitative due to the low response rate in the online survey (see Method section).

### Accesibility test of the Universities' main websites

All European countries included in the analysis were divided into four geographical groups (Eastern, Western, Northern and Southern) based on the division proposed by Royal Berglee (2012). Figure 1 presents the map with the division colour coded and labelled.


Figure 1. The map with traditional division of countries into four categories (Source: https://open.lib.umn.edu/worldgeography/chapter/2-3-regions-of-western-europe/).

On average the accessibility score was relatively high with averaged score equals 87.65 (*SD* = 7.46). The differences in overall accessibility score between four European regions were tested with one-way ANOVA test. The ANOVA test revealed statistically significant result of region factor ($F(4,159) = 10.73$, $p < 0.001$, $\eta^2 = 0.213$). The following pairwise comparisons with Tukey's HSD adjustment for multiple comparisons showed that the Northern countries has significantly ($p < 0.05$) higher accessibility scores of their universities' webpages ($M = 95.89$, $SE = 1.85$) than Eastern ($M = 83.3$, $SE = 1.31$) and Southern countries ($M = 84.1$, $SE = 1.67$). Also, British Isles universities' webpages were significantly ($p < 0.05$) higher ($M = 95.1$, $SE = 2.77$) on accessibility score than Eastern and Southern countries universities. The differences between Northern, Western and British universities' webpages were not

significant ($p > 0.05$). Interestingly, Western countiries universities' webpages accessibility scores were not significantly different in comparison to Eastern and Sothern countries universities' webpages.

To sum up, these findings suggest that the Eastern and Southern regions have significantly lower scores than the Northern countries and British Isles countries. Figure 2 present the average accessibility score in different European regions while Figure 3 presents more detailed color-coded comparison of universities' main webpages accessibility scores by the European countries considered in the study. Again, the northern European countries including Sweden, Norway, Finland are outperforming many other countries. The UK also has a better result when compared with neighbouring Ireland.

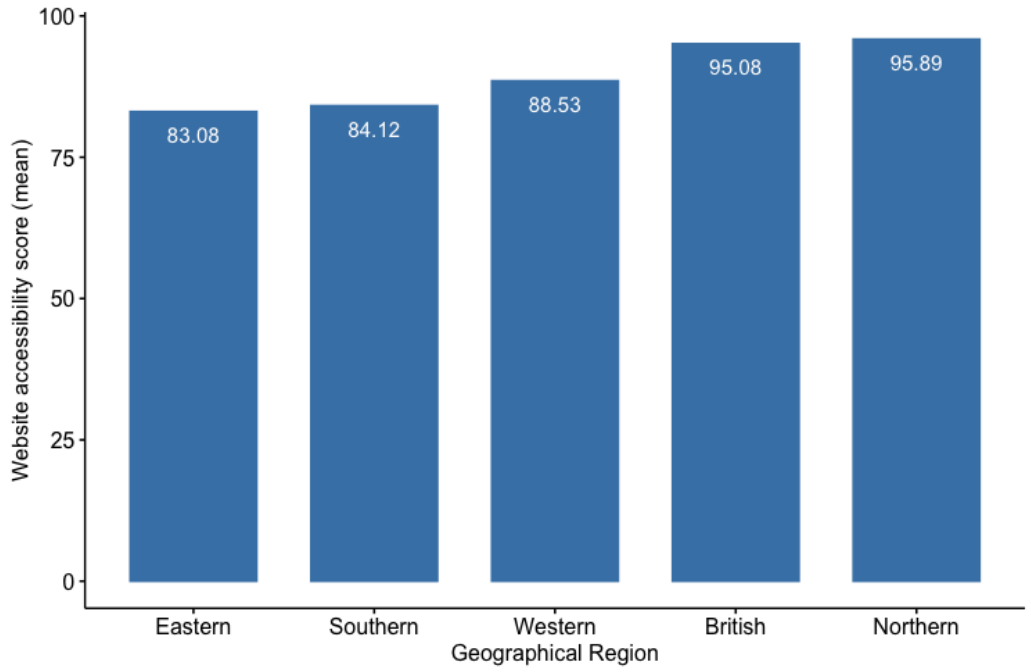


Figure 2. Comparison of general accessibility score between European regions.

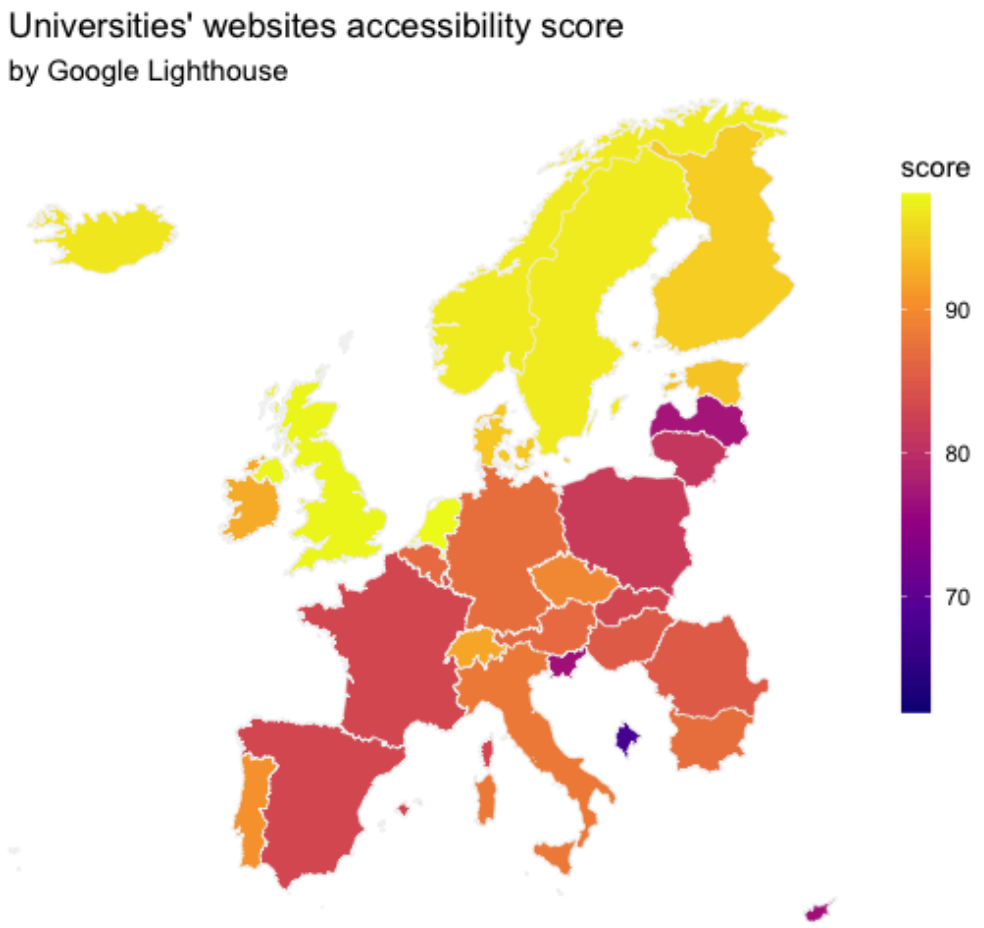


Figure 3. Color-coded overall accessibility scores for main universities'' webpages across European countries.

## Accessibility issues on universities web-pages

Several accessibility issues were identified by Google Lighthouse test on the selected European Universities' webpages. Figure 4 represent the average frequency of each issue across all test webpages.

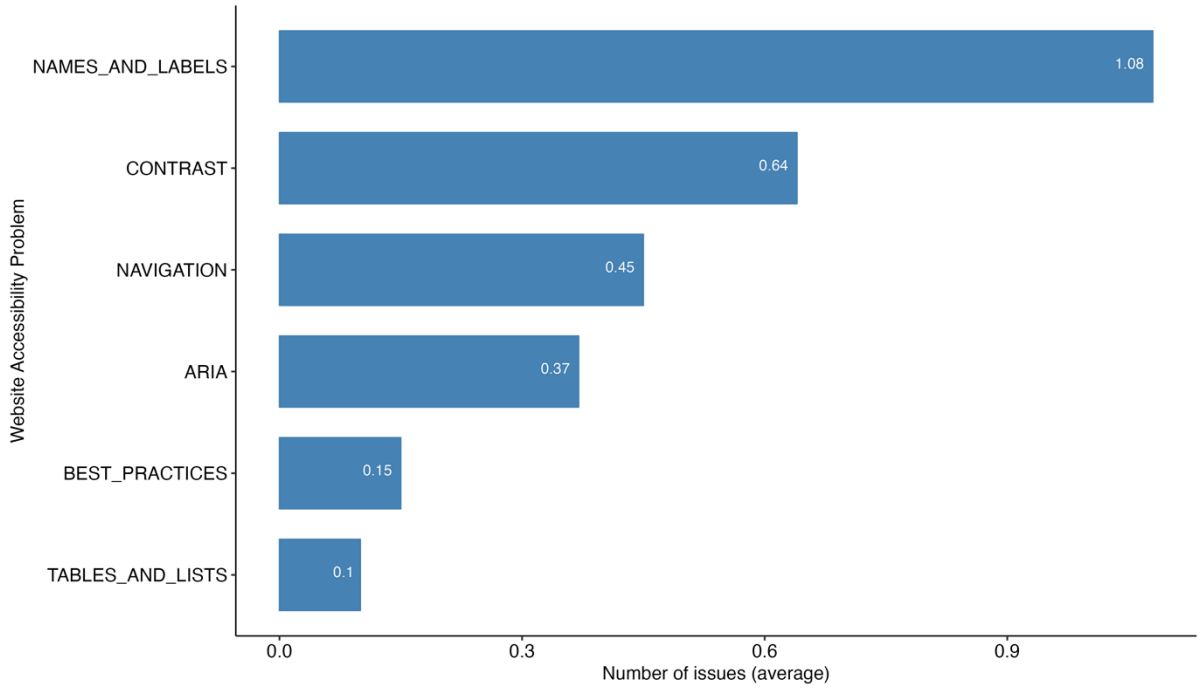


Figure 4. The average number of different accessibility issues on European universities'' main webpages.

The most common issue across all of the websites included in this study was associated with names and labels. On average there was 1.08 issue with names and labels on universities' webpages. Issues with names and labels are related to the following more detailed problems checked by the Google Lighthouse tool: "Image elements do not have [alt] attributes...27", "Buttons do not have an accessible name", "Links do not have a discernible name", "Form elements do not have associated labels", "<frame> or <iframe> elements do not have a title", "Heading elements are not in a sequentially-descending order", or "<object> elements do not have alternate text".

The one-way ANOVA test revealed a statistically significant differences in the naming and labeling problems between European regions ($F(4,25) = 3.41$, $p = 0.023$, $\eta^2 = 0.353$). *Post hoc* tests with HSD Tukey correction for multiple comparisons showed that the less frequent naming and labeling problems were in British Isles countries ($M = 0.33$, $SE = 0.43$) and Northern countries ($M = 0.42$, $SE = 0.27$). While Eastern countries' universities' webpages had naming and labeling issues were significantly more frequent ($M = 1.51$, $SE = 0.19$).

The second in term of frequency of appearance was the issue related to the contrast ($M$ = 0.64). The issue is mainly related to background and foreground colors [not having] a sufficient contrast ratio. Similar one-way ANOVA test on contrast issues across different

regions of Europe revealed only marginally significant main effect ($F(4,25) = 2.57$, $p = 0.063$, $\eta^2 = 0.291$). Eastern countries' universities' webpages ($M = 0.824$, $SE = 0.09$) had marginally ($p = 0.09$) more frequent contrast issues than Northern countries ($M = 0.429$, $SE = 0.12$).

An issue that featured to a much lesser extent rekated to tables and lists. Only 0.1 issue with tables and lists was present in average on universities' web pages. This group of issues consists of the following detailed problems like the following: "Lists do not contain only <li> elements and script supporting elements (<script> and <template>).", "List items (<li>) are not contained within <ul> or <ol> parent elements.", "<dl>'s do not contain only properly-ordered <dt> and <dd> groups, <script>, <template> or  elements.", "\nDefinition list items are not wrapped in <dl> elements".

Similar to contrast issues, comparison with ANOVA test between European regions revealed only marginally significant main effect ($F(4,25) = 2.24$, $p = 0.094$, $\eta^2 = 0.264$).

## Accessibility and Inclusive Services visibility at Universities' websites

In addition to the accessibility of websites, in the first study, we identified the accessibility and inclusiveness services at the universities included in the study. This information coupled with the accessibility score of the institutional website provides an indication of the reality of how much support is provided by an institution to those needing to avail of support services. There is a large body of literature which discusses support services that students with disabilities engage with at college and university (Couzens et al., 2015; O'Shaughnessy, 2021; Plotner & Marshall, 2014; Seale et al., 2015; Wadlington et al., 2017). The research highlights several essential factors that can help promote inclusive education, such as the importance of faculty members' positive attitudes towards students with disabilities, the need for reasonable adjustments to be made in teaching methodologies, evaluation systems, and resources to ensure that students with disabilities can learn effectively, and the use of technology to enhance access to learning (Lopez-Gavira et al., 2021).

Many of the colleges and universities that were included in this research had an easily identifiable office or dedicated department on accessibility or inclusiveness listed on the institution's website. The office or service has a visible presence at the high level of website and the information is easy to locate. Many other institutions could have similar offices and supports available to students but this information is present at a high level on the website or is not as visible. There is a significant difference between European regions in the percentage of assistive / inclusiveness offices at the universities. In general, western region

countries have a significantly higher percentage of such offices than eastern region countries. Once the presence of an accessibility or inclusiveness office was identified the researchers looked at the kind of support that these offices are providing. It is important to note here that what is listed here under the three main categories (exam support, note-taking support and teaching support) are taken from the information provided on each of the individual university websites. As with any other qualitative aspect of research it is only when we have the opportunity to follow up with the people and offices involved that we will really be able to interrogate the information that we have here and really lay bare what services are available and what the supports really look like.

When compared between different European regions 100% of tested webpages of British Isles universities had listed accessibility offices with easy contact to them. Not significantly less 94% of tested webpages for Western and 70% Northern Universities had accessibility offices listed. Eastern and Southern countries' universities made the information about their accessibility offices visible in, accordingly, 63% and 57.6%.

It is our intention to use the information that we have here; these listed supports, to inform the next stage of this research which looks at accessibility supports in much more detail. Using a questionnaire allowed us to actually find out from the people who are responsible for accessibility and inclusion at the universities about what is available for disabled students at their institutions.

The support offered to students with disabilities was also extracted from the universities webpages. With the support of ChatGPT v3, we conducted a qualitative thematic analysis to reveal the following support categories. The common themes of the support provided by tested universities were related to learning support, examination support, coaching and counseling, individual mentoring, legal and financial support. The extensive support of students with disabilities is not only restricted to direct learning process but also to career planning and support outside the university e.g. in finding accessible accommodation or even financial support. The full list of support categories and their examples can be found below:

1) Learning and note-taking support: Teaching adjustments, Teaching aids, Aid from appointed teachers, E-reading room, Hand-outs and lecture notes in alternative formats, Assistive technology for note-taking, Talking books, Adapted course literature, Adapting faculties
2) Examination support: Exam adjustments (font size enlarged during exams, extended time during exams), Examination assistive technology.

3) Coaching and counselling: Psychological counselling, Career counselling, Social counselling, Mental health advice & mentoring
4) Individual mentoring: Study individual mentors, Extra tuition with supervisor, Personalized study program, Advice on organizing studies, Individual teaching of selected subjects in cooperation with faculty coordinators and departments, Individual support plan, Assistance in applying for aid
5) Legal & Financial support: Legal representation, Mediation for study-related problems, Mediation with teaching staff, Financial aid, External grants, Remission of tuition fees, External internships, Work offers, Longer loan period, Free registration

Universities are offering also a long list of assistive technologies for facilitating learning and navigation through the venues for students with disabilities: Electronic reading magnifier with speech output, Text readers, Scanning pen, Ergonomic mouse and keyboard, Listening system, Induction loops and FM system and transmitter with portable hearing loop, Resource rooms, Blind friendly maps of the university, Travel assistance & Adapted transport support, Ramps, lifts and wheel-chairs friendly facilities.

Other resources available for students with disabilities listed on the tested universities' webpags were as follows: Battery of diagnostic test of specific learning difficulties, Child care, Personal assistants and interpreters, Orientation and mobility training, Advice on personal assistance outside of school, Harassment helpdesk, Help with accommodation, Non-medical help, Copying and scanning services, High-quality library scanner, Free provision of reference, Specialized electronic resources.

The categories of support found on the universities' webpages were also used for the definition of questions and answering categories and scales in the online survey for the second study in this project.

# Study 2: Online Survey

## Method

The online survey, including 28 questions (see appendix 1) was distributed via e-mails between 14/04/ and 1/06/2023 to 124 Universities' accessibility/diversity offices which email addresses were collected in study 1. All email addresses were publicly available on the websites. They were used for distributing the online survey. There were two remainders to participate in the survey, yet the response rate was relatively low, 21 respondents started the survey, but only seven provided answers to all questions in the survey. In total, universities from the following 17 countries took part in the survey: Austria, Belgium, Croatia, Cyprus, Czech Republic (2), Denmark, Estonia, Finland, Ireland, Lithuania, Netherlands, Norway, Poland, Romania, Spain (2), Slovenia, United Kingdom (2). The full responses were provided by Copenhagen Business School (DE), University of Limerick (UK/Ireland), University of Edinburgh (UK), Vilnius Gediminas Technical University (LI), Tallinn University (ES), SWPS University (PL), University of Ljubljana (SL). Except for two universities (Poland and Spain), all are public higher education institutions.

## Results

### The Accessibility Policy Implementation

Most of the Universities (7 out of 13 answers provided) admitted to have implemented inclusion policy in-line with European Accessibility Act. Three (3) participants admited that their Universities do not have such a policy. Also there were three (3) "I don't know" answers.

Participants answered the question "What type of physical access is available for students at your university?". The answers showed that the Universities are physically accessible through installation of wheelchairs friendly facilities e.g., ramps, lifts (7), and blind-friendly maps of the university (3). One university offers also guide dogs. And only one of 8 Universities does not provide any physical access tool to their students.

## The Accessibility/Diveristy Offices Organization

The accessibility offices which took part in the study, were established between 1980 (e.g., University of Edinburgh) and 2022 (e.g., Univeristy of Ljubjana). The accessibility offices are differently named, e.g., Student Support and Activity Centre; Disability and Learning Support Service; Diversity, Inclusivity and Equality Office; Disability Affairs Office; Office of Students with disabilities; or the Unit for the Attention of People with Disabilities. Typically, less than 5 people are working permanently with an accessibility office, only in one University (UK) there were more than 15 people engaged on regular basis in activities related to making university more accessible for people with disabilities. Their work is supported by most often less than 5 part-time staff members.

Less than half of the offices have a separate annual budget at their disposal (4 out of 10 responses provided). The overall annual budget for running the accessibility service at the office is less than 50,000 EUR (5 out of 7 responses provided), only in two cases it was higher than this amount. The funding comes from the institution, and in two cases from specific government funds or external corporate external funds. The budget allows to support teachers to create additional materials when necessary (4 out of 10 cases). Some of the offices have an external support such as (European Social Funds or National Agencies) to purchase some equipment.

In conclusion, the survey suggests that while many universities have implemented inclusion policies and established accessibility offices, the level of resources and support varies widely among these institutions. Most offices operate with limited budgets and staff. This variation is probably resulting from the demand of the students, e.g. number of recognized students with disabilities. Additional external support, including funding and equipment procurement, is often necessary to supplement their efforts.

## Students Supported by the Accessibility/Diversity Offices

Respondents claimed that the approximate percent of students with a disability that are registered at the universities varied between less than 0.5% of all students (4 universities), through 1-2% (2 universities), 2-5% (2 universities), up to more than 5% (2). Table 1 summarizes how frequently different disabilities are represented.

The study participants identified various types of disabilities among university students. Commonly represented disabilities included ADHD, Dyslexia, mental health conditions, and physical disabilities. However, students with Autism Spectrum Disorder (ASD), blindness or vision impairments, Deaf and Hard of Hearing (DHH), as well as those with other significant

ongoing illnesses were less frequently represented. Occasionally, students with neurological conditions like Brain Injury and Epilepsy accessed accessibility services. Disabilities such as Developmental Coordination Disorder (DCD), Dyspraxia, Dyscalculia, Significant Numeracy Difficulties, and Speech and Language Communication Disorders were relatively rare among beneficiaries of these services.

**Table 1 How frequently different disabilities are represented among students using your support services? In the cells there is number of institutions choosing each answer.**

| Disability | Frequency | | | | | |
|---|---|---|---|---|---|---|
| | never | very rarely | rarely | occasionally | frequently | very frequently |
| ADD/ADHD | 0 | 0 | 0 | 3 | 2 | 2 |
| Autistic Spectrum Disorder (incl. Asperger's Syndrom) | 1 | 3 | 0 | 3 | 1 | 1 |
| Blind / Vision Impairment | 0 | 3 | 3 | 3 | 0 | 0 |
| Deaf / Hard of Hearing | 0 | 2 | 3 | 3 | 1 | 0 |
| Developmental Co-ordination Disorder (DCD), Dyspraxia | 3 | 1 | 1 | 2 | 0 | 0 |
| Dyslexia/ Significant Literacy Difficulties | 1 | 1 | 0 | 0 | 2 | 3 |
| Dyscalculia/ Significant Numeracy Difficulties | 2 | 2 | 1 | 1 | 1 | 0 |
| Mental Health Conditions | 0 | 0 | 1 | 1 | 4 | 3 |
| Neurological Condition (including Brain Injury and Epilepsy) | 0 | 0 | 3 | 3 | 1 | 0 |
| Physical Disability | 0 | 2 | 0 | 2 | 4 | 0 |
| Significant Ongoing Illness | 1 | 2 | 1 | 1 | 0 | 1 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Speech and Language Communication Disorder | 2 | 2 | 1 | 2 | 0 | 0 |

## The Accessibility/Diversity Offices Information Policy

The Accessibility/Diversity Offices employ various methods and occasions to inform students about their services and support. They inform students mostly prior to registration (8) and during studies (7), but also at orientation days (4), at registration (5), and after registration (5). To inform students about the services, webpages are used most frequently (9), then face-to-face communication with students (8), meetings during open days and events (6), emails to all students (5), and leaflets (4). The multi-faceted approach to the information policy ensures that students have access to information about the available support services at different stages of their academic journey, promoting inclusivity and accessibility within the university environment.

## Services provided by Accessibility/Diversity Offices

The accessibility Accessibility/Diversity Offices strive to provide comprehensive support to students with disabilities, addressing a wide range of needs to ensure inclusivity and equal opportunities within the academic environment. They provide diverse support in several types of accessibility services starting from general coaching and counseling, legal and financial support, living assistance, individual custom-taylored study plans, learning support, to support during examination.

The provided coaching and counseling services include: psychological counseling (7), career counseling (6), mental health advice & mentoring (5), Autism mentoring (1), and social counseling (4). In most of the institutions there is a separate office providing these supports (6 out of 8 responses). Individual support plan is often created (5), and mentoring support is provided (3). When needed personal interpreters (3), personal assistants (3) or tutors (1) assist students with special needs. The office staff provide also some advice on personal assistance outside of school e.g., help with barrier-free accommodation (3).

Regarding legal and financial support, while legal representation is rare (1), mediation for study-related problems (4) or mediation with teaching staff (4) are more commonly offered. The students can benefit from a financial aid (4), external grants (4), remission of tuition fees (3), external internships (3), work offers (3), free registration (2), longer loan period (2), subsidising housing costs (1).

The support during exams includes: extended time during exams (8), font size enlarged during exams (6), screen reader (6) or reading pen (1), a human assistant (reader 5, or scriber 1), separate and individual exam room (4), additional computer (3), or comfort breaks (1). One participant mentioned that his/her office provide also individual organization of study resulted in extended deadlines.

The note-taking support includes: assistive technology for note-taking (6) e.g., speech recognition software (4), note taking solution (4), documents digitalization (5), photocopies and lecture notes in alternative formats (5), adapted course literature e.g., talking books (6), and human assistant for notes taking in lectures and other classes (4), or digital recorders and other hardware equipment (1).

Other assistance include copying and scanning services (5), harassment helpdesk (3), orientation and mobility around the campus training (5), diagnostic tests of specific learning difficulties (2), child care (1), free provision of reference (1).

## Assistive technologies available for students

The offices offer a wide variety of assistive technologies available for students such as most popular, computers with adapted programs (7), ergonomic mouse and keyboard (7), text readers (6), and electronic reading magnifier with speech output (5). Students may count on assistive technology for note-taking (3), listening systems (4), induction loops and hearing loops (4) FM system that transmits audio signals to the student by radio waves (3), and scanning pen (1). Some of the offices are equipped with a range of other specialist assistive software and hardware (1).

Some accessibility offices (4) offer an equipment loaning system for the students. For example, they loan laptops, mouses and keyboards, recorders, electronic magnifiers. Their staff is also open for suggestion and tries to organize whatever students need in order to minimise/manage the impact of their disability, learning difference, health or neurodiverse condition on their studies (1). One of the offices reported to have a partnership with external organization which lend the University a wide array of equipment.

## Support for teaching faculty

The offices provide also some support to teaching faculty (6 out of 8 responses) by counselling them how to ensure an inclusive (academic) environment, teacher training/ seminars/ workshops about specific special needs, recommendations how to communicate

and preparing study materials for student support. They also consult teachers when they face some kind of struggles dealing with students. So, teachers can receive training, general advice and guidance on how to support students with disabilities, learning differences, health and neurodiverse conditions.

## Accessibility/Diversity Offices Needs

At the end of the survey, we asked the office representatives to specify up to 5 most important biggest needs of their office. The offices seem to be understaffed since as the most important is need for more human resources including (4 out of 6) and specialist mentoring and support for students with metal health problems and neurodiverse conditions. Financial support emerged as the 2nd most important need (4) which would allow for e.g., buying equipment.

The third need was related to effective liaison with colleagues across university to ensure the implementation of adjustments, and producing greater understanding of the needs of disabled students especially amongst the academic community. This would lead to change in academic staff attitude to be more open to alternatives to traditional means of teaching and learning. Next, the office representatives expressed the needs of spreading information on availability of student support and to involve other students as e.g., note-takers, mentors. The office staff called also for guidelines from accessibility experts and government. Finally, adjustments of university buildings were mentioned, suggesting a more barrier-free places in the university, better personal emergency evacuation plan and more resources to help students to develop their skills e.g., FM system.

# 1. Conclusion & Guidelines

Higher education institutions have a responsibility to provide equal access to education and opportunities for all students, faculty, and staff. By conducting an accessibility audit, using accessibility guidelines, providing alternative formats, training staff on accessibility, and creating an accessibility policy, institutions can ensure that their websites are accessible to all users. Website accessibility is not only a legal requirement but also an essential part of providing a high-quality education and experience for all members of the higher education community.

Creating a culture of accessibility within institutions of higher education starts with websites as this is often the first interaction that prospective students or employees will have with an institution. There are many ways for institutions to rapidly improve their overall performance score and the score for accessibility. Institutions should conduct an Accessibility Audit on their website. This type of audit is a comprehensive review of a website's accessibility features, including its design, structure, and content and can help identify barriers to accessibility and suggest strategies for improving accessibility. Institutions can also use automated accessibility testing tools to help identify and fix accessibility issues.

Also, we believe that the second study, the online survey creates a picture on current situation of accessibility offices at academia. Although our sample was relatively small, we described how the offices function, what type of assistance they provide, what kind of challenges they are faced with. This report can also be treated as an inspiration for accessibility educators and other accessibility or diversity office to create more welcoming accessible universities in a near future. The number of institutions included in this research is limited.  Looking at every single university or higher institution was outside of the remit and the resources available.

There are also several guidelines available to help ensure that websites are accessible to all users. The Web Content Accessibility Guidelines (WCAG) are the most widely used set of guidelines. WCAG outlines specific accessibility requirements for websites, including the use of descriptive text for images, providing captions for videos, and ensuring that content can be navigated using a keyboard. Institutions need to consider providing alternative formats of website content for users with disabilities. For example, providing text descriptions of images for users with visual impairments or providing transcripts of videos for users with hearing impairments. Staff should be trained on how to create and maintain accessible

websites. This can include training on web design principles, accessibility guidelines, and the use of assistive technologies. Institutions should have an accessibility policy in place that outlines their commitment to website accessibility and provides guidance on how to achieve accessibility goals.

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**Appendix 1 Invitation & Survey**

Invitation sent to Universities' offices: "Dear Sir/Madam, We are members of the EU-funded COST Action on Accessibility with regard to online media. You can find out more about the COST Action at https://lead-me-cost.eu We are conducting research into the current accessibility support services that are available to students and staff working in higher education in Europe. If you work in the field of accessibility, you have the chance to influence the further development of services by participating in this research. Your responses will help policymakers grasp the sector's specific needs and challenges. This survey is invaluable in helping us understand more about accessibility needs. Your responses are confidential, but your feedback is crucial in helping us understand how to support you and the Higher Education community."