Good practices in inclusive language education and foreign language teacher training – universal design in education and increasing accessibility, especially for marginalized groups

Edited by:

Dina Tsagari, Joanna Nijakowski, Ewa Guz

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Edited by: Dina Tsagari, Joanna Nijakowska, Ewa Guz

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Working together for a green, competitive and inclusive Europe

The SCALED project benefits from a EUR 117,960 grant from Iceland, Liechtenstein and Norway through the EEA Grants. The aim of the SCALED project is to create an online course preparing teachers for inclusive teaching, universal design for learning, and increasing accessibility in language education, especially with regard to students with Special Educational Needs.

For further information and online course materials of the scaled project, please visit: https://scaled.uw.edu.pl

The following participants were involved and supported the development of the original ©SCALED Report:

Poland
University of Warsaw, Poland

Centre for Foreign Language Teacher Training and European Education
prof. UW dr. hab. Joanna Nijakowska – project coordinator
dr Ewa Guz – project member

Digital Competence Centre
Dorota Sidor – project member

Office for Persons with Disabilities
Agnieszka Bysko – project member

Institute of English Studies
Department of Applied Linguistics and Translation Studies
dr Agnieszka Kałdonek-Crnjaković – project member

Norway
Oslo Metropolitan University, Norway

Faculty of Education and International Studies
Department of Primary and Secondary Teacher Education
prof. Dina Tsagari – partner coordinator
dr Astrid Gillespie – project member
dr Hege Knudsmoen – project member

Department for Vocational Teacher Education
dr Veerle Garrels – project member

Faculty of Technology, Art and Design
Department of Computer Science
prof. Weiqin Chen – project member
dr Norun Christine Sanderson – project member

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Preface

Dina Tsagari – Oslo Metropolitan University

Joanna Nijakowska – University of Warsaw

Universities, among other expectations, are mandated to create conducive conditions for all students who may have varying needs, including people with disabilities, that can assist them to eliminate barriers and fully participate in the education process. One of the ways to achieve this aim is through developing awareness and sensitivity to diversity of learning needs and providing academic teachers with appropriate training on inclusive education.

The aim of the SCALED project (Supporting Content and Language Learning Across Diversity) is to support and prepare English (and other language) teachers and university tutors for inclusive teaching, universal design for learning, and increasing accessibility in language education, especially with regard to students with Special Educational Needs. In SCALED this is done via the current *Report on Exchange of Experiences and Good practices* in inclusion and accessibility and an online teacher training course in the context of foreign language teaching and education through language (EFL – English as a foreign language, CLIL – Content and language integrated learning - learning content through an additional language, EMI – English as medium of instruction). The Report, based on the latest research findings, trends and practical methods and techniques, will be part of the initial training and professional development of pre-service and in-service foreign language teachers and academic teachers. The Report equips academic and school teachers with the background and awareness needed to eliminate barriers and effectively include all students in the language education process which is a necessary condition for social inclusion (OECD, 2020; UNESCO, 2017). The Report is available as part of open educational resources offered within the SCALED project.

The Report was motivated and built on the following activities: an educational seminar and workshop to exchange experiences and good practices from partner universities and to implement best practices for teacher training and in-service teacher professional development in the field of inclusive education used at

Norwegian and Polish universities. The planned exchange of experiences and good practices took the form of two events (seminar and workshop), organized jointly by both partners – one at OsloMet, the other at UW. The first was more theoretically oriented, collecting and developing a catalog of appropriate, effective practices and strategies while the second one was a practical workshop. Participants of the events were project participants: employees of the two Universities - University of Warsaw (Warsaw, Poland) and Oslo Metropolitan University (OsloMet, Oslo, Norway) participating in the project, academic teachers and FL teacher trainers.

The exchange of experiences and good practices applied in partner universities took the form of presentations and discussions during the seminar and workshop. The current Report summarizes these activities and the characteristics of the implemented and proven patterns of conduct in relation to 1) inclusive language education provided in partner universities and at other levels of education in partner countries, and 2) pre-service and in-service training of foreign language teachers in the methods of inclusive education, universal design for learning, ways of increasing accessibility and special educational needs used in partner universities. The report is an innovative compendium, a guide for educational authorities and decision makers responsible for designing educational programs at various levels of education.

The materials included in this Handbook consist of 14 chapters, divided in two parts: *Theoretical Part* and *Practical Part*. Each chapter comprises several sections and subsections and covers theoretical and practical issues which acquaint teachers and trainers with a wide repertoire of useful, practical methods, techniques and tools so that they can enhance their competence and skills in creating inclusive and accessible basis to accommodate the needs of students with diverse learning and physical needs. The chapters can be read independently from each other or in any order that users find useful. They are all followed by references to the literature for the interested readers.

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Introduction to the SCALED project

Joanna Nijakowska – University of Warsaw

Dina Tsagari – Oslo Metropolitan University

Overview of the SCALED project

1. Project main aim

The aim of the SCALED project is to develop an online teacher professional development course which can also be adapted to onsite use, in the field of inclusive education methods, Universal Design for Learning, differentiated instruction and methods of increasing the accessibility of the teaching process, content and materials in the context of foreign language teaching and education through language (EFL – English as a foreign language, CLIL – Content and language integrated learning - learning content through an additional language, EMI – English as medium of instruction). The project complements equity and anti-discrimination activities at the partner universities and responds to the needs of the academic and school community. The SCALED course, based on the latest research findings and trends in education, will be part of the initial training and professional development of pre-service and in-service foreign language teachers and academic teachers. The course will equip academic and school teachers with tools to eliminate barriers and effectively include all students in the language education process. We believe that appropriate professional training of teachers in terms of responding to the diverse needs of all learners, especially people with special educational needs, is a necessary condition for social inclusion (Brussino, 2020; UNESCO, 2017). The course will be available as part of open educational resources and widely disseminated locally and internationally and offered to students and teachers at the partner universities.

2. Project context and priorities

SCALED project partners – University of Warsaw (Warsaw, Poland) and OsloMet University (Oslo, Norway) strive to be universities of equal opportunities. Among the

academic community of the University of Warsaw and OsloMet University, an equality and anti-discrimination policy is promoted, as well as disagreement with the existence of any forms of inferior treatment and exclusion, everyone is guaranteed equal treatment regardless of sex, age, disability, sexual orientation, nationality, ethnic origin, or religion. One of the basic tasks of universities is to create conditions for all students who may have varying needs, including people with disabilities, to fully participate in the education process by eliminating barriers. One of the ways to achieve this aim is through developing awareness and sensitivity to diversity of learning needs and providing academic teachers with appropriate training on inclusive education.

The aim of our project, however, is not limited to complementing the equity and inclusive activities at the partner universities, but we also intend to reach teacher trainees and foreign language teachers working at different levels of education. We plan to achieve this by developing a professional development course for the pre-service and in-service foreign language teachers as well as academic teachers. Course participants will be able to acquire appropriate knowledge and practical skills in the field of universal design of an inclusive didactic process - with a foreign language learner with diverse and special educational needs at its centre.

Inclusive education methods, increasing accessibility through proper design of the didactic process are still not a common practice both in schools and universities, and they are also rarely an integral part of the content of teaching in teaching specializations. The need for appropriate training is confirmed by voices from academic teachers and opinions of the university management staff (vice-deans responsible for student affairs), the experience of offices for students with disabilities as well as several research studies concerning the training needs of foreign language teachers. Both pre-service (Nijakowska, 2022) and in-service foreign language teachers from primary and secondary schools indicate an urgent need to improve the skills of practical implementation of inclusive foreign language education (e.g., Kormos & Nijakowska, 2017; Nijakowska & Kormos, 2016; Nijakowska, Tsagari & Spanoudis, 2018, 2020). The project is a response to the needs of both the academic and school community. We believe that filling the training gap will bring

many positive long-lasting effects and changes in the way academic and school teachers design their teaching content and methods.

Understanding the fact that diversity is the norm, that we learn differently, and that less ability or disability is often determined by the environment and setting (e.g., physical barriers) is key to inclusion (Brussino, 2020; UNESCO, 2017). Removing or neutralizing various barriers in the environment that increase the feeling of disability (e.g., by providing an elevator, headphones, reader, larger font, a quiet place to learn, different ways of presenting content, different possibilities to demonstrate knowledge, etc.) releases possibilities and potential - i.e., creates equal opportunities by increasing accessibility.

The aim of the project is to help teachers to be able to effectively remove real and potential barriers already at the stage of planning the education process. The project involves the implementation of empirically verified models and methodologies. These models are Universal Design for Learning in relation to teaching and assessment, Differentiated Instruction (e.g., in relation to materials, types of tasks, the scope of necessary teacher support and assistance) and introducing reasonable adjustments to teaching and assessment conditions for those who require it because of their diverse and special educational needs (e.g., health status) to be able to use their full ability and potential. The starting point is the planning of the educational process in such a way that the needs of as many learners as possible are considered. The use of the above models in language education allows for the successful implementation of the assumptions and methods of inclusive education at all levels (also in higher education). The participants of the course will directly experience the impact and effectiveness of inclusive teaching. The course offers various options, choices, modalities (interactive online, self-study and onsite use) and accessibility features (e.g., videos with subtitles and transcription, possibility of playing at different speeds or translating into another language).

3. Project beneficiaries and intended impact

Knowledge and skills of foreign language teachers in the field of designing an inclusive didactic process constitute one of the pillars and basic conditions for the

proper functioning of the child welfare system. Well-prepared, well-trained, and aware teachers can significantly improve the well-being of students by minimizing barriers and designing an accessible school environment (onsite and online) that is conducive to the development of one of the key competences in the lifelong learning process, which is the ability to communicate in a foreign language (European Agency for Development in Special Needs Education, 2012). This skill enables smooth functioning in adult life, allows for further education and increases the chances of success in working life. Accessibility is especially important for marginalized groups with diverse and special educational needs resulting, for example, from learning difficulties, disabilities, or life situations.

An innovative feature of the project is the multifaceted structure of beneficiary groups, allowing the introduction of inclusive activities and consolidation of good practices with maximum efficiency. The final beneficiaries in the target group of the project are foreign language learners of different ages (children, adolescents, adults), at different educational stages and with different needs. Direct beneficiaries are academic teachers, including those educating future foreign language teachers, pre-service teachers (students of the teaching specializations) and in-service teachers. University students who are teacher trainees constitute a special group in the project, because they are both the final beneficiaries (as learners) and direct beneficiaries (as future teachers). The behavioural models and practices that students experience as they learn and study shape them as future teachers. What and how they are taught translates into their beliefs and subsequent professional practices, i.e., how they will teach children of different ages themselves. Therefore, it is crucial that they are exposed to good models and inclusive practices that universities provide thanks to qualified staff.

We hope to improve the quality of education of school pupils and university students learning a foreign language and/or through a foreign language by providing the tailor-made professional teacher training. In that way the aim of the project directly relates to the Education Program objective, which is to reduce social disparities, and to two priority areas “inclusive education” and “child welfare education”. Long-term benefits of the project include the provision of high-quality training for academic and school teachers, which then translates into equalizing

educational opportunities and significantly improving the well-being of children and young people learning foreign languages and learning content of subjects through a foreign language.

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Part 1 - Inclusive language education and teacher training in partner countries and partner universities: policies and practices

1. Educational system, policies, curricula: SEN and language teacher education in Norway

Astrid Gillespie – Oslo Metropolitan University

Introduction

The Norwegian Primary and Secondary School system strives for inclusion of all students, regardless of ability and background in the same school, also referred to as the Unitary School (Official Norwegian Reports 2014:7 p. 24). This chapter describes the structure and characteristics of the educational system in Norway from primary school to higher education and the policies under which the school exists and develops.

1. The Educational System in Norway

Norway has no official preschool education. However, children below school age are entitled to a place in kindergarten from the age of one. Kindergarten is not obligatory. However, 93% of all children between the age of 1 and 5 can attend kindergarten education (The Norwegian Directorate for Education and Training, 2022). Regarding primary and lower secondary education, most children start school the year they turn 6. However, if there is any doubt that a child is sufficiently mature to start school, the Education Act (1998, Section 2-1) gives the child the right to postpone starting school by one year after an expert assessment and if their parents request that.

Primary education has a duration of 7 years, lower secondary reaches over the course of 3 years, while upper secondary education has a duration of 3-5 years. The length of upper secondary depends on whether the student is in a vocational program, including a period of apprenticeship or in a university-preparatory program. Upper secondary education is not compulsory, but all young people have a right to public upper secondary education (The Education Act, 1998, Section 3-1). Students in vocational programs can achieve university and college admission certification.

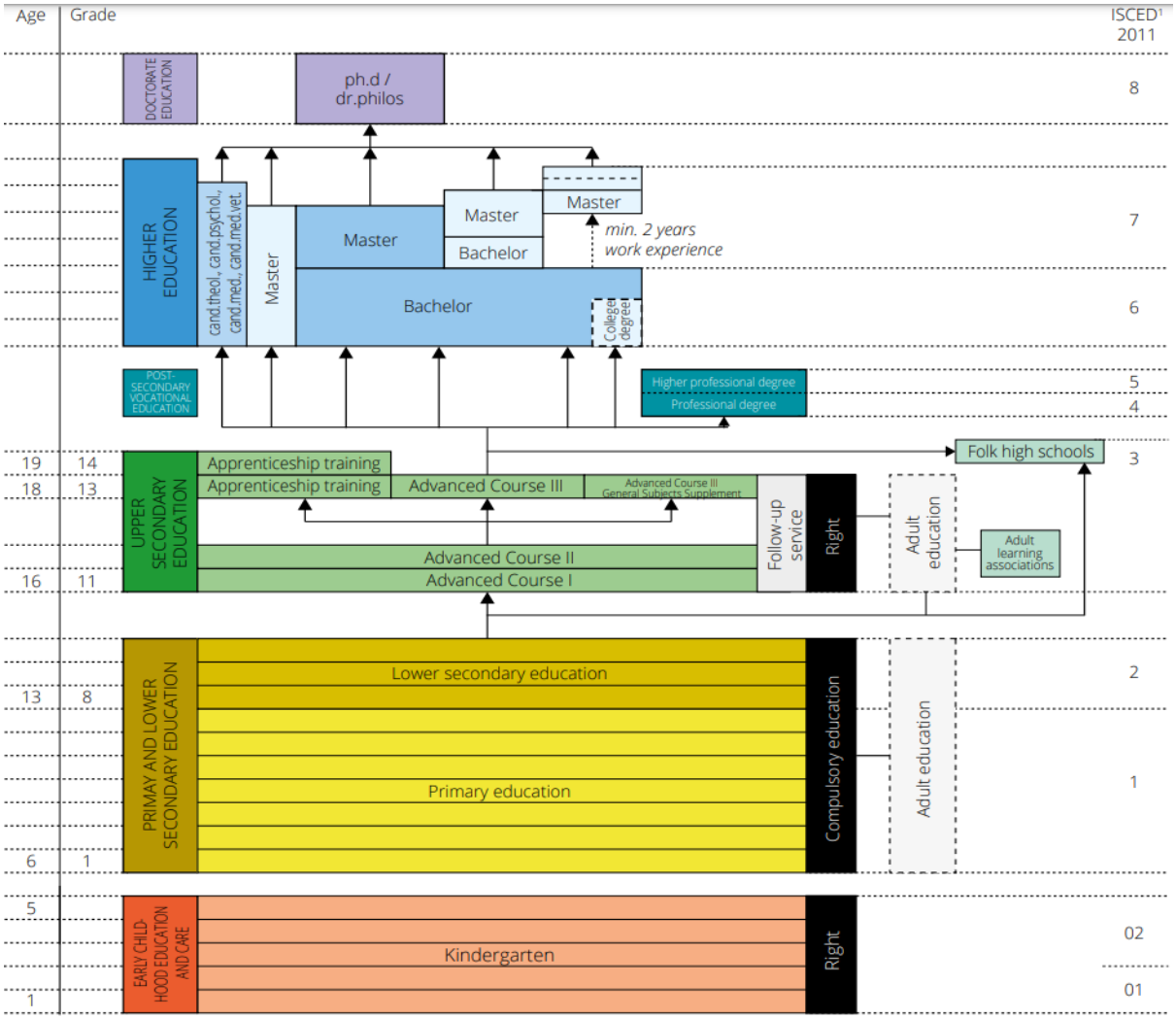
They can do so either by studying university-preparatory subjects the third year of upper secondary school instead of being an apprentice or do so after achieving their certificate of completed apprenticeship. Public universities and colleges are more or less free of charge and open to all with an admission certification, depending on results from upper secondary education and in some cases subject combination or a specific minimum grade. As an example, higher education programmes in areas like science, technology, and engineering require that the students have attended advanced courses in mathematics, physics and/or chemistry in upper secondary school in order to get admission. Admission to teacher education also requires a minimum grade in Norwegian language and mathematics (Norwegian Universities and Colleges Admission Service, 2022) and an average minimum grade. Statistics Norway have created a model shown in Figure 1.

2. Policy on inclusion in Primary and Secondary education

The Norwegian educational system has gone through some radical changes over the past centuries. A thorough discussion of all changes is outside the scope of this overview. However, a few reforms are worth mentioning as they can contribute to explaining and understanding the educational system of today. In 1975 the Act relating to Special Schools was taken out of the school legislation and the school legislation included all students regardless of background and abilities (Haug et al., 1999). The municipalities were thereby obligated to provide education for all children. During the 1970s and 1980s the state-run special schools were closed down (Befring, 2019). The curriculum of 1974 states that diversity is normal and that the school needs to take this diversity into account in order to provide equal opportunities for all (The Norwegian Ministry of Church Affairs and Education, 1974 p. 11)

In 1994, a new reform gave all young people legal right to upper secondary education, regardless of their results from lower secondary school. Students who, for whatever reason, need a slower progression in upper secondary schools, are entitled to spend up until 5 years to complete upper secondary education. In 1997 the compulsory primary and lower secondary school was extended with one year

Figure 1: The Norwegian education system 2022 (adapted from Statistics Norway, 2022)



instead of the age of seven. In 1998 the current Education Act was passed, and Special Needs Education became an individual right (The Education Act, 1998, Section 5-1).

The Education Act (1998), Section 2-1 states that “Children and young people are obliged to attend primary and lower secondary education and have the right to a public primary and lower secondary education”. This right apply to all children and young people living in Norway or who are likely to reside in Norway for a period of more than three months. Further, the right to public education for all also includes the right to attend the school that is geographically closest to their home (Section 8-1). This demands that every single school takes into account the inevitable

heterogeneity in the student population and facilitate for learning for all students regardless of their abilities and needs.

Moreover, The Education Act (1998), Section 1-3 mentions that “Education must be adapted to the abilities and aptitudes of the individual pupil, apprentice, candidate for certificate of practice and training candidate”. This means that the instruction should be adapted so that all students can benefit from normal instruction. However, this is not to be considered an individual right, but more of an overarching principle that oblige the school to facilitate for learning activities that give all students the best possible chances to succeed. Students whom the teachers fail to adapt to have a right to special needs education in subjects where they do not or cannot benefit from the education provided for them (Section 5-1).

In cases where students have a mother tongue different from Norwegian, and thus have problems with benefiting from normal instruction they have a right to adapted instruction in the Norwegian language until they are sufficiently proficient in Norwegian to follow the normal instruction in class. The Education Act is under revision at the time, but there are no indications pointing at severe changes in the individual right to special needs education or the overarching principle of adapted education. Regarding allocation of students into classes and groups, the Education Act states that students should not be organized into groups according on ability, gender or ethnic affiliation on a permanent basis (Section 8-1).

It is also of interest that, over the past decades, the post of the Secretary of State for Education has been held by politicians from a broad range of political parties ranging from the right to the left on the political scale. However, no significant changes have been made regarding the rights of students with special needs, the principle of adapted education and inclusion and the unitary school system. This might be an indicator of broad political consensus and support for the unitary school model.

The curriculum for primary and secondary education is a regulation of the Education Act and consist of two parts. The Core curriculum and a Framework regulate the distribution of teaching hours per subject and competence objectives. In the Core curriculum, the principle of inclusion is made very clear in the section

describing the principles for the school's practice across all subjects. The Core curriculum, Chapter 3.1 uses the term *differentiated instruction*.

> Differentiated instruction means that the school adapts the teaching so that all pupils have the best possible learning outcome from the ordinary teaching. The school can adapt the teaching by using various work methods and pedagogical approaches, by using various teaching aids, by the way they organise the teaching and by working with the learning environment, subject curricula and assessment". (The Norwegian Directorate for Education and Training, 2017)

Having established the main principles for primary and secondary education in Norway, it is relevant to look at the statistics in order to find out how many students in school have an individual decision of special needs education. The Norwegian Directorate of Education and Training publishes the numbers for each academic year. In the year 2021/2022 app. 7,7 % of the students in primary and lower secondary school had an individual decision of special needs education. Moreover, it is a tendency towards that the need for special education increases with age and that the majority in need are boys, particularly in the lower grades (The Norwegian Directorate of Education and Training, 2022). The notion that boys seem to be more vulnerable in the school context and are more likely to be in need of special education has been widely debated (Official Norwegian Reports 2019, p.3).

Although the intentions of facilitating for adapted education and inclusion are clearly communicated in legislation and other policy documents, the reality seem to differ to a certain extent from the ideal. Considerable research has been undertaken on the topic of adapted education The results suggests that too many students seem to exhibit insufficient learning outcomes through the classroom adaptions carried out by their teachers and that teachers struggle with adapting instruction to a heterogeneous group of learners (Skaalvik et al., 1995; Sollie, 2005; Bachmann & Haug, 2006; Mjøs, 2007; Nordahl & Hausstätter, 2009)

Regarding the subject of English language, English language is Compulsory for the first 11 years of primary and secondary education. Further, students have the opportunity to substitute a second foreign language (French, Spanish, German) with

in depth studies in English in year 8-10. Pupils attain one final grade in English Language after year 10 and after year 11 (first year of upper secondary) and can choose to attend more advanced English language courses in year 12 and 13 depending on the program in which they have enrolled. The core element of English Language according to the curriculum is Communication, Learning Language and Working with texts over all 11 years (The Norwegian Directorate for Education and Training, 2020).

3. Teacher education in Norway

There are different paths to becoming a Teacher of English language in Norway, but a Master's degree is required regardless of which path one chooses. The qualification requirements depend on which grades one wishes to teach. In addition to having a degree in Teacher Education, either a Master's degree or a valid degree from a teacher education program obtained before 2017, Teachers of English Language in grade 1-7 need 30 credits relevant to teach English Language, while 60 credits are required to teach grade 8-13 (The Norwegian Directorate for Education and Training, 2021). The required credits are normally integrated in the teacher education program either as an optional course or as a main subject (grade 5-10). The Oslo Metropolitan University offers two different master's programs for Primary and Lower Secondary Teacher Education for years 1-7 or 5-10, that can both lead to sufficient credits to teach English Language. In the curriculum's description of skills the pre-service teacher is expected to adapt the instruction to the abilities and needs of the students (OsloMet, 2022a). Regardless of what sort of teacher education program a student attends, the principle of inclusion and adapted education is reflected in the curricula as a core competence for all teachers to have.

4. Policy on inclusion in higher education in Norway

Regarding higher education, Norway implemented a new reform in higher education from the academic year of 2003/2004. The reform aimed at increasing the number of students that successfully complete their degree by means of among others catering for better learning environments, more student activity, increased support from university or college teachers and better feedback and assessment

practises (The Norwegian Ministry of Church Affairs, Education and Research, 2001). This reform was extensive and reaching far beyond the few points mentioned above.

Moving on to inclusion in higher education and facilitation for students with special needs the Eurostudent (2002) found that 23 % of all students in higher education in Norway report that they have a disability. What kind of disability is not clarified. The Act relating to Universities and University colleges (2005) states that:

> Students with a disability and students with special needs are entitled to suitable individual adaptation of the learning environment, teaching, teaching materials and examinations, in order to ensure equal training and education opportunities. This right concerns adaptations that do not place a disproportionate burden on the educational institution. When determining this, special attention must be paid to the effect of the adaptations in removing barriers for the students in question, the costs of the adaptations and the institution's resources [….] This adaptation must not result in a reduction of the academic requirements in the individual courses. (Section 4-3)

At the teacher education programs at the Oslo Metropolitan University this is practiced in various ways. For instance, the students can apply for alternatives in relation to exams, as for example prolonged time. Facilitation of workplaces due to physical barriers, audiobooks instead of textbooks, loudspeakers and microphones in classrooms, different ergonomic equipment, reading and writing aids and sign language interpreters when needed. Students with vision impairment are in title to bringing a guide dog to lecturers (OsloMet, 2022b).

Research undertaken on the topic of inclusion of students in higher education with disabilities in Norway suggests that facilitation for inclusion is insufficient (Brandt, 2005; Legard, 2013; Langørgen & Magnus, 2018). According to Langørgen & Magnus (2018) disabled students reported that they needed to disclose their disability and specifically ask for assistance in order to get accommodations suited for their needs. They further reported that they found it hard to “cope in silence” in order to prove that they were capable and that their success could be attributed to

their own work rather than support from the higher education institutions in which they were enrolled. Svendby (2020) found in her study that university teachers offer insufficient accommodation due to a lack of knowledge and competence regarding the students' needs and suggests that university teachers should enhance their competence in these matters through compulsory courses. However, the conclusions from the studies mentioned above are drawn from qualitative interviews with a limited number of informants and the results are not suited for generalisation.

5. Conclusions

The policy of inclusion has a tradition of more than 40 years in the Norwegian school system, particularly in terms of inclusive education for students in primary and lower secondary education across all subjects. Research suggests that there is a gap between intentions and reality regarding full inclusion of students with special needs, but that Norway has come far regarding organisational inclusion of all students. In terms of academical inclusion there is still work that needs to be done. One could argue that the very same applies to the facilitation for inclusion in higher education. The intentions are well articulated in policy documents, but research suggests that reality does not necessarily reflect the intentions.

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2. Educational system, policies, curricula and teaching practices: SEN and language education in Poland

Agnieszka Kałdonek-Crnjaković - University of Warsaw

Introduction

This chapter starts with an overview of the rights of persons with disabilities in the Polish law system. It discusses, among others, the Charter of the Rights of Persons with Disabilities, which is the main document that explicitly presents 10 rights concerning healthcare, rehabilitation, social security, and education with the aim to establish full participation of persons with disabilities in the life of society.

The next section presents the educational system and special educational needs in Poland, including the structure of mandatory schooling, types of schools, and foreign language education, as well as the scope of the term Special Educational Needs (SEN) with a focus on Specific Learning Difficulties (SpLD).

The last section is dedicated to SEN policies in Poland. The conclusions drawn highlight that the principles of inclusion have been achieved in the Polish law system by establishing mainstream education for all students regardless of their needs. However, it needs to be stressed that the wording used in legal documents and related papers focuses on disabilities rather than on a broader range of needs in line with the principles of equity and inclusion. Also, as pointed out in the literature, legal provisions have a limited impact on the realization of inclusive education in practice.

1. Rights of persons with disabilities in the Polish law system

The rights of persons with disabilities are guaranteed by the Polish Constitution of 1997 by the statement of non-discrimination in Article 32 section 2 where it is

mentioned that ‘Nobody may be discriminated against in political, social or economic life for any reason.’ In addition, Articles 68 and 69 of the Constitution explicitly mention persons with disabilities. These two articles oblidges on public authorities to ensure persons with disabilities special medical care (Article 68 section 3) and support in everyday living, work and social communication (Article 69).

As a result of the above-mentioned constitutional provisions, the legislative body of the Republic of Poland (Sejm) enacted the Charter of the Rights of Persons with Disabilities (1 August 1997), which includes ten rights of persons with disabilities. These are:

1. access to goods and services enabling full participation in social life;
2. access to treatment and healthcare, early diagnostics, rehabilitation and medical education, as well as health benefits taking into account the nature and degree of disability, including the supply of orthopaedic items, aids, rehabilitation equipment;
3. access to comprehensive rehabilitation aimed at social adaptation;
4. learning at schools together with able-bodied peers as well as making use of special education or individual education;
5. psychological and pedagogical assistance as well as other specialised assistance enabling the development, acquisition or improvement of general and professional skills;
6. work in the open labour market, in accordance with qualifications, education and opportunities and making use of counselling and mediation, and when the disability and state of health so require, the right to work in conditions adapted to the needs of people with disabilities;
7. social security, taking into account the need for incurring increased costs resulting from the disability, as well as taking account of these costs in the tax system;
8. living in an environment free from functional barriers, including: access to offices, electoral points and public utility facilities, free movement and general use of means of transport, access to information, opportunities of interpersonal communication;
9. having the autonomous representation of own environment and consulting

with it on any draft legislation with respect to people with disabilities;

10. full participation in public, social, cultural, artistic, sport life as well as in recreation and tourism according to their interests and needs.

The Charter does not ensure legal enforcement of the rights but is an important document that makes the authorities commit to making efforts to promote the rights of persons with disabilities. The most recent governmental report on the activities undertaken in 2017 for the implementation of the Charter's provisions (Government of the Republic of Poland, 2018) reported that the Ministry of Education conducted ongoing activities related to the dissemination of the concept of inclusive education, created organizational and legal conditions for education, upbringing and pedagogical care for all children and adolescents, including those with special educational needs. This included comprehensive diagnostic assessments according to international standards, workshops and conferences for headteachers and teachers on the dissemination and implementation of inclusive education, and the issuance of the guide entitled 'A Student with Special Educational Needs in the educational system in the light of the new provisions of the education law' (Government of the Republic of Poland, 2018).

The report also announced the intention of establishing Specialist Centres for Supporting Inclusive Education in each country district. Their aim is to support schools to better organize inclusive education to assist psychologically and pedagogically each child in accordance to their needs. The centres' activities include counselling, consultations, training for teachers, children and their parents provided by experts from specialized schools and institutions. The project is co-financed by the European Union under the Knowledge Education Development Operational Program. The centres were piloted in 2021 (Information on the Implementation of the Charter of the Rights of Persons with Disabilities, 2018).

The issuance of the Charter instigated the enactment of a number of legal acts to facilitate the living of people with disabilities. This includes, among others, designated parking spaces, the subscription fee for radio and TV, tax relief, and additional support in the course of education.

The body that supports the enforcement of the rights of people with disabilities

is the Government Plenipotentiary for Disabled People. It also supervises the execution of the tasks specified in the Act of 27 August 1997 on vocational and social rehabilitation and employment of persons with disabilities.

2. The educational system & special educational needs in Poland

Pursuant to the Education Act of 2016, education is provided to every child appropriately to their age and developmental level in all types of schools. The child can attend a public or non-public school. Education in the former is free-of-charge. The learning content, teaching approaches and the organization of work should consider the psychological and physical capabilities of the child. The possibility of getting psychological and pedagogical support and special forms of teaching are also stated by the legislator, allowing for introducing individualized learning arrangements as to the form, curriculum, and assessment.

Education in Poland is compulsory from the age of seven up to the age of 18 (Article 35 of the Education Act of 2016). In duly justified cases, the child of six years old can start primary school at the request of the child's parents, provided the child has attended a pre-school and a favourable psychological-pedagogical opinion has been issued by the relevant institution. The child may also start compulsory school later than the age of seven, based on a favourable psychological-pedagogical opinion issued by the relevant institution; however, the child needs to attend pre-school.

Primary education lasts eight years that end with a leave exam (egzamin ośmioklasisty) that allows the pupil to continue their education at the secondary level. The exam consists of maths, the Polish language, and a modern foreign language (i.e., English, French, Spanish, German, Russian, or Italian). Secondary school lasts between two and five years, depending on the type of school. The high school (liceum) lasts four years, whereas the technical school (technikum) takes five years. Both schools end with a leave-exam (matura) that allows the pupil to continue their education at the tertiary level. The exam consists of maths, the Polish language, a modern foreign language (i.e., English, French, Spanish, German,

Russian, or Italian), and at least one additional subject chosen by the candidate (e.g., physics, biology, history, etc.). Vocational schools (szkoły zasadnicze branżowe) last between two and three years and prepare the pupil to a specific vocational profession (Centre for Education Development, 2021; Eurydice, 2022a).

Regarding foreign language education, children start learning their first foreign language in the first grade of primary school. It is expected that the child completing the third grade will have the knowledge of the language at the level of A1 according to the Common European Framework of Reference for Languages (CEFR) after 180 hours of learning the language (60 hours per year or two lessons per week). Whereas, at the end of primary school (the eighth grade), the expected level is A2+/B1 after 450 hours of learning the language (90 hours per year or three lessons per week). The second foreign language (i.e. English, French, Spanish, German, Russian, or Italian) is introduced in the seventh grade. The expected level of knowledge at the end of primary school is A1+ after 120 hours of learning (60 hours per year or two lessons per week). Learning at last two foreign languages is required in high and technical schools. The expected level of proficiency for the first language is B1+/B2 after 360 hours of learning the language (90 hours per year or three lessons per week) and for the second one is A2+ after 240 learning the language (60 hours per year or two lessons per week). Whereas in vocational schools, students need to learn at least one foreign language. The minimum number of hours is 30 in the form of a foreign language for specific purposes (Core Curriculum, 2022). English is the most popular foreign language in Polish, followed by German (Statistics Poland, 2021).

The term Special Educational Needs (SEN) is not legally defined in the Polish system. Therefore, the term is broadly understood and its meaning is determined by the needs of a child, pupil or learner in the areas of:

- disability,
- social maladjustment or its risk,
- behavioural or emotional disorders,
- special talents,
- specific learning difficulties,
- competence deficits and verbal communication disorders,

- a long-lasting illness,
- crisis or traumatic situations,
- school failure,
- child neglect resulting from the financial situation of the pupil and their family,
- ways of spending free time and contacts in the home environment,
- adaptation difficulties due to cultural differences or to the change of the learning environment, for example, upon return from abroad.

(European Agency for Special Needs and Inclusive Education, 2021)

More specifically, regarding disabilities, the term ‘multiple disabilities’ is used. It refers to at least two combined types of disability: deafness, hearing impairment, blindness, visual impairment, a motor disability, including aphasia, a mild, moderate or severe intellectual disability, and autism, including Asperger’s syndrome (European Agency for Special Needs and Inclusive Education, 2021)

As for Specific Learning Difficulties (SLDs), the definition provides that these are learning difficulties experienced by pupils with normal intellectual abilities whose problems with learning the contents taught result from their specific perceptive, physical and cognitive characteristics which are not related to any neurological problems (European Agency for Special Needs and Inclusive Education, 2021).

In line with the principles of inclusive education and education for all, in Poland, all children and young people with SEN may attend mainstream schools. The decision is taken by the child’s parents or the adult learner. Also, counselling and guidance is provided to all pupils who have been found to be in need of such support. All institutions in the school education system are required to provide psychological and pedagogical support in line with the assessment of the child’s needs by the teacher conducting classes, class tutor or a specialist, a statement or an opinion issued by a public or non-public counselling and guidance centre, or a certificate issued by an assessment committee in a public counselling and guidance centre (Eurydice, 2022b).

3. Policies of SEN in Poland

Special education is provided to those who require a special organization of the

teaching and learning processes and special working methods on the basis of a certificate recommending special education (special education certificate), issued by a counselling and guidance centre. A certificate specifies recommended forms of special education, depending on the type of disability, including the level of intellectual disability. The group of children and young people entitled to this support include those with an intellectual disability, deaf or with hearing impairment, blind or with visual impairment, with a motor disability, autism, multiple disabilities, and socially maladjusted or at risk of social maladjustment (Eurydice, 2022b).

Early development support from the time when the child's disability is diagnosed until the time when they start school. Special measures are provided to those with severe conditions. It is mandatory for children with a severe intellectual disability to attend a pre-school preparatory year, which is organized full-time and part-time and in the form of rehabilitation-and-education classes. However, if the child's health conditions do not allow then to attend a nursery or pre-school school, they follow individualized one-year pre-school preparatory classes or an individualized learning programme (Eurydice, 2022b).

Concerning pupils with SLDs, educational requirements that are based on a curriculum are adapted to their individual developmental and educational needs and psychological and physical abilities. Certificates confirming SLDs are issued by public or non-public counselling and guidance centres, not earlier than after the third grade of primary school and by the completion of the education in primary school. However, in duly justified cases, a certificate can be issued to a pupil that attends a post-primary school (Eurydice, 2022b).

From the practical perspective, inclusion is realized via so-called 'integration classes'. Such classes are attended by pupils with and without SEN. The composition of the class is decided by the admissions committee in a school, and parents or their legal careers need to give explicit consent that their child will attend such a class. The classes are smaller compared to mainstream classes, between 15-20 students, where the maximum number of pupils with SEN is five. The classes are taught by two teachers – the main one, who conducts lessons with the whole class, and the additional teacher or teaching assistant, who takes care of those with SEN. The school facilities that offer 'integration classes' are adjusted to the needs of

their pupils with SEN (Bartnikowska & Antoszewska, 2017).

Regarding higher education, Poland has implemented a strategy on equity in higher education with specific and measurable targets with reference to social dialogue, with a quality assurance agency monitoring policies related to equity. Most specifically, Polish higher institutions provide psychological counselling services to students even in cases when there is no legal requirement for such support. Also, Polish higher education institutions are financially supported in a form of grants to provide training on diversity and inclusion to academic and administrative staff. However, the main focus is still on people with disabilities, especially targeting attitude change and greater accessibility, rather than understanding equity and inclusion more comprehensively. Also, external quality assurance solely concerns study programmes rather than including a broader range of areas of equality and inclusion in higher education, for example, institutional missions. Conclusively, Poland's social dimension policies in higher education are developed at the medium level (European Education and Culture Executive Agency, 2022).

4. Curricula, teaching practices & SEN in Poland

All pupils follow the curriculum, and teachers are required to adapt educational requirements to pupils' individual developmental and educational needs and psychological and physical abilities. In some cases, however, curricular exemptions are granted. The pupil with a hearing impairment, profound developmental dyslexia, aphasia, multiple disabilities or autism, including Asperger's syndrome, can be exempt from learning a second modern foreign language in a given educational stage. In practice, it means that the student can attend lessons but is not officially graded. Such an exception is granted by the headteacher at the request of parents or legal careers or an adult student on the basis of the opinion of a psychological and pedagogical counselling centre (Eurydice, 2022b).

Regarding gifted pupils, they can follow an individualized learning programme or curriculum or an individualized learning path granted by the headteacher at the request of parents or legal careers or an adult student upon the completion of at least one year of education or earlier during the school year in duly justified cases (Eurydice, 2022b; Bartnikowska & Antoszewska, 2017).

5. Conclusion

The Polish law provisions ensure full inclusion of individuals with SEN by establishing mainstream education for all pupils. The organization of education considers different pupils' needs, including those with learning difficulties, physical and sensory impairments, and gifted and talented ones, upon free-of-charge diagnosis and screening. Language education is accessible to all from the beginning to the end of compulsory education, and specific cognitive profiles of learners are taken into consideration with the aim of facilitating the learning process of foreign languages. The legislator also recognized the need for providing psychological and pedagogical support to those who find the mainstream programmes challenging.

The SEN policy is continuously worked on. Undoubtedly, the establishment of Specialist Centres for Supporting Inclusive Education is needed to support educators in their everyday work with their students with SEN. Also, understanding equity and inclusion more comprehensively, beyond disabilities, would enhance the level of the development of social dimension policies. However, as noted by Bartnikowska and Antoszewska (2017), sound legal provisions will not ensure inclusion in practice. What is needed is the readiness and willingness of teaching staff, children, young people and their parents or carers to implement inclusion policies adequately to the specific needs of an individual, which, according to recent research studies, are still at a low level.

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3. Educational system, policies and curricula: SEN and language teacher education in Poland

Ewa Guz – University of Warsaw

Introduction

A systemic organisation and standardisation of teacher education, also with respect to training teachers of students with special educational needs [SEN], is a relatively recent development in the Polish educational system. In fact, it is only in the last two decades that a gradual shift has been made towards a regulation and clarification of teacher training on the national policy level. Primarily, this shift has taken the shape of formulating the, so called, "national standards" for teacher education which, as the name itself suggests, aim to identify the common core of goals, content, practices and learning outcomes constituting the benchmark of teacher education in Poland. In particular, the national standards aim to determine the specific knowledge and skill set all Polish teachers - also those of students with SEN - need to acquire and develop as part of their initial teacher training in order to become formally qualified and start their professional career in state-regulated education.

The goal of this chapter is to provide an overview of the Polish national (language) teacher education system and shed some preliminary light on how this system accommodates the needs of SEN students and their prospective teachers. The initial focus is specifically on the main premises and principles of teacher training of school education subject teachers. The discussion begins with an overview of the system of initial teacher education in Poland with particular focus on the origins, goals and content of the national standards. The focus then shifts to the current model of teacher education and its handling of issues related to diversity, inclusion and special educational needs.

1. Teacher training in Poland: An introduction

A number of important stipulations and clarifications need to be made before proceeding to describing the system of teacher education in Poland.

First, in the light of the Polish law there are two distinct categories of teachers: teachers working in the school education system and academic teachers working in the higher education system. It is important to note that, from a legal point of view, the training and qualification requirements for these two groups of teachers are completely different.

While the provision of initial teacher education to prospective school education teachers is heavily regulated and standardised on a national level, academic teacher education is highly varied and determined by the individual policies, study programmes and staff qualification requirements laid out by particular universities. This means that while school education teachers are required by law to complete standardised teacher training programmes, there are no such initial training or qualification requirements for academic teachers. In short, these two groups of teachers follow completely distinct educational and professional paths and, in the case of the latter, there is no uniform system or policy in place to speak of.

Second, in the Polish educational system "language teachers" do not hold any special status or exercise additional rights compared to content subject teachers. Legally speaking, (foreign) language teachers fall within a larger category of school subject teachers, and so, are not subject to any specific, additional legal training requirements or exemptions. By the same token, (foreign) languages belong to a larger category of school subjects listed as obligatory for different types of schools and educational stages in the Core Curriculum (Core Curriculum, 2022a, 2022b). In fact, the 2022 national standards for initial teacher training make a distinction between the following three categories of teachers and outline distinct professional trajectories and qualification requirements for each of these groups (National Standards for Teacher Education, 2022):

- subject teachers (including language teachers), teachers of theoretical vocational subjects, teachers of practical vocational training, teacher

psychologists,

- kindergarten and early childhood education teachers for grades 1–3 of primary school,
- special needs pedagogues, speech therapy teachers and teachers conducting early child developmental support.

As the focus of this chapter is on the policy and system of language teacher education in Poland, our discussion will therefore be limited to subject teachers whose training is legally and systemically regulated i.e., school education teachers.

Third, teacher education in Poland is restricted in terms of the types of institutions that can be authorised to run teacher training programmes leading to obtaining formal nationally-recognised teaching qualifications. When it comes to the range of institutions granted the permission to offer teacher education and national-level teaching qualifications, since 2018, initial teacher training can be provided only within the higher education institutions [HEIs] (Law on Higher Education and Science, 2018). However, this is not to say that every higher education institution can provide teacher education.

Whether a HEI can offer a teacher training programme and grant professional teacher qualifications depends on the research status of the institution and its authorisation to award academic degrees. From a legal perspective, teacher education can only be provided by HEIs which have been awarded at least the research grade / category B as an outcome of an external evaluation of research activities in the discipline to which a given field of study is assigned or granted a permit to establish an initial teacher training programme in cooperation with an HEI that is authorised to award a doctoral degree in the discipline to which the field of study is assigned (Law on Higher Education and Science, 2018).

In sum, it can be stated then that teacher education in Poland can only be provided by institutions which hold the status and reputation of well-established and nationally recognised research centres.

HEIs-based teacher training study programmes can be realised as degree and non-degree post-graduate programmes. Three types of degree programmes can

be distinguished, each following a highly structured framework determined by the national standards for teacher education (Teacher Qualifications, 2022):

- first-cycle programmes leading to a bachelor's degree, min. 6 semesters/180 ECTS,
- second-cycle programmes leading to a master's degree, min. 3 semesters/90 ECTS,
- long-cycle programmes - second-cycle programmes, leading to a master's degree, min. 9 semesters/300 ECTS.

Graduates of non-teacher training programs can opt for full-or part-time postgraduate programmes, which lead to obtaining a certificate of completion of a non-degree postgraduate programme.

2. Initial school teacher training in Poland: Towards standardisation

According the Polish Internet System of Legal Acts [ISAP], which is an official government record and database of all legislation passed by the Polish government since 1918, the first legislative act regulating teacher education in Poland goes back to February, 7, 1919, when the Decree on the Education of Primary School Teachers in the Polish State was issued by the Minister of Religious Denominations and Public Enlightenment (Decree on the Education of Primary School Teachers in the Polish State, 1919).

The document, whose nominal goal was to outline the necessary teacher qualifications for Polish primary school teachers at that time, delegated all teacher training to state and private teacher colleges and provided a thorough description of the requirements set for teacher training programmes including explicit guidelines for their goals, content and curriculum, duration, structure and organisation, trainee and trainer entry requirements, examinations, essential facilities and even gender restrictions concerning the grouping of trainees. Albeit somewhat limited in size and scope, this decree was the first legal step towards standardising Polish teacher education nationally, both in terms of professional qualifications required from teachers and the content of the teacher training programmes.

Since 1919, the law on teacher qualifications has been revised exactly 40 times, with its major most recent and currently holding update published in 2022 (Teacher Qualifications, 2022). Despite the passage of time, the goal and function of this regulation has largely remained the same i.e. to showcase formal qualifications required from Polish school teachers and provide country-wide legal grounds for teacher education. In that sense, it can be said that the qualification legislation has constituted the foundations of state school teacher training in Poland for nearly 100 years.

However, from the point of view of quality assurance, a mere specification of legal requirements needed to obtain teaching qualifications is not in itself sufficient to ensure high quality and efficiency of teacher training. Therefore, with the view of extending the scope of standardisation and to create a single, uniform, comprehensive model of teacher training, in the year 2003 the Polish government introduced new, more comprehensive legislation regulating teacher education - the national teacher education standards (National Standards for Teacher Education, 2003).

As stated in the document, its major goal was to provide "the standards of teacher education in higher education institutions, in higher vocational studies, graduate studies and postgraduate studies" (National Standards for Teacher Education, 2003, p. 1). The surprisingly succinct regulation (the document has merely four pages) consists of seven parts outlining the required teacher training "standards", which need to be implemented in all teacher training programmes granting national level teacher qualifications in Poland. In particular, the 2003 national standards specify: 1) the obligatory subject matter content and components of teacher training programmes including groups of obligatory subjects and scope and amount of teaching practice, 2) a list of skills and competences to be developed by trainees in the course of training, and 3) a detailed professional profile of graduates of state-approved teacher training programmes.

Despite their rudimentary nature, these first national standards marked the first attempt at conceptualising standardisation in Polish teacher education beyond teacher qualification and extending the notion to include the qualitative aspects of teacher training study programmes such as: goals, learning outcomes, structure,

duration and content. The 2003 standards became a springboard for a discussion about quality assurance in teacher education and a major catalyst for change. In this sense, it can be said that the 2003 publication of state-level teacher education standards marked a major legal and qualitative breakthrough, which transformed and greatly impacted teacher education in Poland.

3. Initial school teacher training in Poland: The standards then and now

Since their first formulation in 2003, the national standards have earned and maintained the status of the main legislative act which underpins and regulates initial school teacher education in Poland. The major goal of the legislation has been to ensure uniformity and high quality of Polish teacher education by introducing common standards for all types of schools and school teachers in Poland. The standards have since come under the scrutiny of successive government bodies resulting in seven major revisions implemented by various relevant ministers of national education and/or sports and/or science and/or higher education. The successive revised versions of the standards were published in the years: 2004, 2012, 2019, 2020, 2021 x2, 2022 (Internet System of Legal Acts).

On the whole, the scope and amount of the revisions varied considerably. The earliest, 2004 revision, which was an 8-page-long document, added a much more precise specification of the study content and obliged all trainees to gain qualifications in two additional areas: foreign languages and information technology (National Standards for Teacher Education, 2004).

The subsequent revision of the standards took place in 2012 (National Standards for Teacher Education, 2012). This version, which was 22-pages long, arrived with a new label, modified information structure and extended content. The old label "teacher education standards" was replaced by "standards of education preparing for the teaching profession". Additionally, for the first time, the standards specified the requirements for parallel teacher training in two separate school subjects. Finally, also for the first time, the standards included requirements for four different aspects of teacher training:

- general and specific learning outcomes for trainee teachers,
- obligatory course content, duration (in hours) and value in credits,
- obligatory four key subject matter areas of teacher training study programmes ("educational modules"),
- the principles of the organisation of teaching practice/internship.

In fact, this newly revised information structure and requirement specification has become "the standard for the standards" and since then has constituted the organisational principle of the legislation.

The 2019 revision brought about a major change in terms of university degree qualifications required to become a fully qualified teacher i.e. the 2019 revision obliged all future teachers to obtain a master's degree.

The most recent series of revisions of the national standards, which occurred between 2020 and 2022, did not affect its content or introduce any major changes in the teacher education system. The 2020-2022 revisions can be described as 'pandemic updates', which involved slight modifications of the structure of the teaching practice and granted HEIs larger autonomy in terms of selecting the offline mode of learning (National Standards for Teacher Education, 2022).

4. The current national standards for teacher education

There are a number of central assumptions the current standards make about what exactly is required to train as a teacher. These assumptions are based on the premise that to become a fully qualified teacher a trainee needs to master specific knowledge and skills leading to achieving specific learning outcomes. Taken together, these learning outcomes form the core of the trainee's developing teacher competence. We will now consider the assumptions and requirements for teacher education listed in the national standards in greater detail and gauge them in terms of their potential link to training teachers of students with special educational needs.

The first major national standards requirement has been formulated with respect to the scope of the educational/subject matter content, which should be included in teacher training (National Standards for Teacher Education, 2022). Here, the standards require that initial teacher training for school education subject

teachers should cover a number of key areas including: subject-area training in two school subjects, pedagogical-psychological training, general didactic training, specific didactic training for teaching two school subjects and teaching practice/internship in two school subjects.

The second major requirement provides insight into how the key areas of teacher training should be realised (National Standards for Teacher Education, 2022). To be more specific, the standards require that the implementation of each of the four compulsory key areas should follow a set of predetermined guidelines including the specification of the minimum of class and internship hours, specific courses along with their ECTS value and learning outcomes, rules for teaching practice/internship and formal requirements for teaching staff and teaching/learning facilities in institutions involved in training.

Finally, according to the third requirement, the realisation of the key areas in teacher training leads to the emergence of expected learning outcomes in terms of knowledge, skills and social competences (National Standards for Teacher Education, 2022). Here, the standards make a distinction between general and specific learning outcomes, which are defined for each of the key areas of training. We will now consider these learning outcomes in greater detail, paying particular attention to their treatment of special educational needs.

5. The national standards and special educational needs

Perhaps, the first observation that needs to be made as regards the coverage of SEN in the Polish national standards for teacher education is that there is not a separate module dedicated to the issues related to inclusion, special needs, learning difficulties, differentiation, diversity, individualisation etc. The only part of the standards, where a direct reference to SEN is made, is the description of the learning outcomes (both general and specific), where SEN-related learning content cuts across all the three outcome areas: knowledge, skills and social competences. Such extensive treatment of SEN education in the standards clearly suggests that SEN-related learning outcomes are seen as global in nature and their significance is not overlooked.

Let us consider general learning outcomes first. Here, SEN-related references are fairly frequent and elaborate and pertain to a wide repertoire of aspects and problems related to the teaching of students with SEN such as: inclusive education, learner diversity including cultural diversity and migration issues, the rights of people with disabilities, communication with students with SEN etc. When it comes to the general learning outcomes for knowledge, the 2022 national standards assume that teacher training programme graduates know and understand (National Standards for Teacher Education, 2022):

- the issues of inclusive education and the ways of implementing the principle of inclusion,
- the diversity of learners' educational needs and the need for the school to adapt the educational process,
- the rights of children and people with disabilities,
- teaching methods and how to select effective methods to support the teaching of the subject or the conduct of classes, taking into account the diverse educational needs of learners.

When it comes to skills, graduates are expected to demonstrate the ability to (National Standards for Teacher Education, 2022):

- design and implement curricula, taking into account the diverse educational needs of learners,
- work with learners with special educational needs, including those with adaptation difficulties related to migration experience, from culturally diverse backgrounds or with limited knowledge of the Polish language,
- recognise the needs, possibilities and abilities of learners and design and conduct activities that support their integral development, activity and participation in the educational process and in society.

Finally, the SEN-related general learning outcomes for graduates' social competences state that they are ready to (National Standards for Teacher Education, 2022):

- make decisions related to the organisation of inclusive education,

- communicate with people from different backgrounds and with different emotional conditions, to resolve conflicts in dialogue and create a good atmosphere for communication within and outside the classroom,
- use universal ethical principles and norms in professional activity, guided by respect for each individual,
- build relationships based on mutual trust between all actors in the education and training process, including learners' parents or guardians, and involve them in activities conducive to educational effectiveness.

As regards specific learning outcomes for future teachers, the 2022 national standards also place a considerable emphasis on recognizing and acknowledging SEN-related issues in teacher training. In fact the selection of SEN issues covered as part of specific learning outcomes is quite impressive. Topics covered range from diverse barriers and difficulties experienced by SEN-students affected by disabilities and specific learning difficulties of social and mental origin, through adaptations including individualisation, integration and inclusion to the principles of universal design. To illustrate the in-depth coverage of SEN-related issues in the specific learning outcomes, let us consider some examples (National Standards for Teacher Education, 2022).

When it comes to specific learning outcomes for knowledge, graduates are expected to know and understand, for example:

- the concepts of integration and inclusion,
- the situation of a child with a physical and intellectual disability in a mainstream school,
- problems of children with autism and their functioning,
- problems of neglected children and the school situation of children with migration experience and problems of children in crisis or trauma,
- the situation of students with special educational needs: special educational needs and their determinants (the scope of functional diagnosis, methods and tools used in the diagnosis),
- the need to adapt the education process to the special educational needs of students (designing support, constructing individual programs).

- In terms of skills, the standards assume that graduates should be able to:
- recognize the barriers and difficulties of students in the learning process,
- be able to identify the need to adapt working methods to a class that is diverse in terms of cognitive, cultural, social or material status,
- design activities aimed at integrating the class.

For specific learning outcomes in terms of graduates' social competences, the 2022 standards list only one requirement: graduates should be ready to adapt working methods to the needs and different learning styles of students.

In conclusion, it can be stated that SEN issues have a strong presence in the current national standards for teacher education in Poland. This might suggest that Polish policy-makers do acknowledge the importance of SEN education and the need to include it as an integral part of 'mainstream teacher education. However, while the range of topics covered within the learning outcomes is fairly admirable, there remains the central question of their implementation in the actual study programmes in specific HEIs.

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4. Learning variability and students with special needs in higher education in Norway

Veerle Garrels – Oslo Metropolitan University

Introduction

Over the past decades, the pursuit of higher education has become more and more commonplace. According to the Organization for Economic Cooperation and Development (OECD, 2021), approximately 57% of young women and 45% of men in OECD countries will enter higher education before the age of 25. In 2022 in Norway, nearly 135 000 people applied for admission to higher education at the country's 27 universities or university colleges (Norwegian Directorate for Higher Education and Skills, 2022). These numbers indicate that higher education is an attractive pathway for many. Indeed, attending higher education may be an important means of building identity and developing new skills, and an academic degree may prove an asset for employment opportunities and salary negotiation.

With increasing numbers of students enrolling at higher education, the student population also becomes more diverse. Yet, learner variability has always been the norm at all educational levels. For instance, in one single auditorium, one is likely to see variation as to how enthusiastically students engage with different tasks, which learning activities they prefer, how committed they are to reading required literature, how quickly they perform tasks, how eagerly they participate in group work, etc. This is not a new challenge to teachers in higher education, but acknowledgment of the fundamental learner variability amongst students may help universities and university colleges to become more inclusive and welcoming learning spaces for all.

More knowledge about common disorders has also contributed to a better understanding and more acceptance of the diversity that teachers are likely to encounter in their classrooms. Some of the typical challenges that students may present include ADHD, dyslexia, autism spectrum disorder, cerebral palsy, visual or auditory impairment, mental health conditions, etc. The increasing prevalence of several of these conditions puts an additional obligation on university lecturers to

make necessary accommodations to their teaching, so that equal opportunities to participate in higher education are safeguarded for *all* students, also those with special needs.

In this chapter, Norwegian legislation concerning students' rights to higher education and individual adaptation of the learning environment is presented. Furthermore, different understandings of disability are explained, and the disability gap model is highlighted as a rationale for Universal Design for Learning (UDL). At the end of the chapter, some questions for further reflection and discussion are given.

1. Higher education in Norway: Legislation and some of its blind spots

In Norway, higher education is an option for anyone who has successfully completed higher secondary education. The absence of tuition fees at most of the Norwegian higher education institutes and the welfare system with student loans ensure that higher education is financially affordable to most people. Thus, it seems that Norway succeeds in providing higher education that is "equally accessible to all on the basis of merit", as stipulated in Article 26 of the Universal Declaration of Human Rights (United Nations, 1948).

More recently, the United Nation's (2015) sustainable development goal nr. 4 calls for universal access to a quality higher education for all. This may be considered a more ambitious goal than the human right to higher education based on merit, and the sustainable development goal also promotes lifelong learning opportunities for all. Norway, as a States party, endorses this goal, and the Norwegian government has identified global and national quality indicators to measure goal attainment.

The Convention on the Rights of Persons with Disabilities (United Nations, 2006, Article 24) also recognizes the right of people with disabilities to access education at all levels. Countries that have ratified the convention, such as Norway and Poland, commit themselves to ensuring an educational system that is inclusive, so that people with disabilities may develop their potential, experience a sense of

dignity and self-worth, and participate effectively in a free society. For higher education institutions, this translates into an obligation to ensure the provision of reasonable accommodations to people with disabilities.

In addition to following these international conventions and declarations, Norway has its own legislation in order to ensure that higher education is accessible to all, regardless of ability or disability. The Norwegian Act relating to universities and university colleges (Ministry of Education and Research, 2005), section 4-3, makes it mandatory for institutions of higher education to provide “premises, access roads, sanitary facilities and technical installations [that] are designed in such a way that people with disabilities can study at the institution”. Thus, legislation is clear on the requirements for physical learning spaces: infrastructure on campus must be designed in such a way that it can be accessed by all people, regardless of age, size, ability or disability. This is what is known as Universal Design (UD) in architecture.

However, creating inclusive higher education is not merely about universal design of the physical environment. Instead, inclusive higher education also depends on the design of the “cognitive space” in which teaching and learning may take place. Here, Norwegian legislation demands that students with disabilities and/or special needs receive “suitable individual adaptations of the learning environment, teaching, teaching materials and examinations, in order to ensure equal training and education opportunities”, as long as these adaptations fall within what can be considered reasonable in terms of costs and resources (Ministry of Education and Research, 2005). Hence, higher education institutions are obliged by law to provide individual adaptations, so that learning content, teaching materials, teaching practices, and evaluation methods allow students with diverse abilities to participate.

While the Norwegian Act relating to universities and university colleges (Ministry of Education and Research, 2005) seems to follow the principle of inclusive education, at least two issues may be up for debate. The first issue deals with the question whether the legislation truly encourages inclusive education, or whether it – unintentionally – contributes to the marginalization of students with disabilities. The second issue deals with the question of what may be considered reasonable adaptations.

Firstly, according to §4-3(5) of the Norwegian Act relating to universities and university colleges (Ministry of Education and Research, 2005), individual adaptations of the learning environment, teaching, and examinations are the prerogative of students with specific impairments (physical or cognitive). This stands in contrast to the Norwegian Act relating to Primary and Secondary Education and Training (Ministry of Education and Research, 1998), which stipulates the right to adapted education for *all* students. Yet, in higher education, only students with special needs are eligible for special accommodations to the teaching and learning environment. This may be problematic, as individual adaptations may be experienced as stigmatizing by students with special needs. Moreover, not all students with disabilities feel comfortable disclosing personal information about their condition and asking them to do so in order to receive necessary accommodations may contribute to a marginalization of their disability. Having to request special accommodations may leave students with special needs with a sense of being different, and it may give them the impression that their disability is a deficit in need of remediation (Liasidou, 2014). Thus, it can be questioned whether Norwegian legislation – despite good intentions – is contributing to the upholding of a discourse of normalcy in higher education.

Secondly, the Norwegian legislation leaves room for subjective appraisal of what may be considered reasonable adaptations in terms of costs and resources. What one finds “reasonable adaptations” may differ from teacher to teacher, depending on how one understands disability, one’s prior experience with special needs students, the support offered by the institution, institutional guidelines, and knowledge of how to adapt one’s teaching so that it becomes accessible for as many students as possible. A research study by Emmers and colleagues (2020) found that teachers in higher education do not feel very confident in designing learning tasks to accommodate the individual needs of students with disabilities. For teachers who have limited experience with how to adapt their teaching to a diverse student group, the threshold for what they consider “reasonable accommodations” may be much lower than for teachers who are more skilled in this field. Hence, students in higher education may experience inequality, not based on their own capabilities, but based instead on their teachers’ competence.

2. Understanding disability

How teachers in higher education understand disability (and learner variability) is pivotal to their development of inclusive attitudes in a teaching and learning context. Three models of disability may be identified: a biomedical model, a social model, and the Nordic relational model, which is also known as the gap model of disability.

2.1 A biomedical understanding of disability

The biomedical model views disability as a deficit situated within the individual. Thus, this model understands disability as a functional limitation caused by a health condition, such as an impairment, a disease or a certain disorder, and the focus is on treatment of this condition. In a biomedical understanding of disability, the environment is not taken into account to explain a person's level of functioning (Tøssebro, 2004).

In an educational context, such an understanding of disability may result in little effort to accommodate for students with special needs. A biomedical perspective views learning difficulties or other impairments as individual deficits that put the student at a disadvantage compared to other students without such deficits. With the deficit steadily placed within the student, the solution to the experienced challenges is also to be found there, for example through additional training, medication, or even exclusion from the mainstream environment. Hence, teachers who adhere to this model of disability are unlikely to consider how their own teaching may affect the learning of students with special needs, or which steps they may take to make their teaching more accessible to them. Vignette number one provides an example of a teacher who holds a biomedical view of disability in her teaching practice.

Vignette #1: A biomedical understanding of disability

Catherine is a 62-year-old history teacher at the bachelor's level. She has quite a traditional lecturing style, and she enjoys explicit teaching. Most of her lectures are teacher-directed, and she considers herself as the best source of knowledge for her students. She likes standing in front of the classroom, and she has a great way of story-telling that seems to captivate most students. She has always used this kind of teaching style, and she figures that it works well for about three quarters of the students. In fact, she thinks that those students who drop out after a couple of weeks probably shouldn't have been in her class in the first place. After all, not everyone is up for higher education, and there is not so much she can do about that.

At the start of the new semester, Catherine is approached by Sean, a student with ADHD. He informs her of his diagnosis, and he asks Catherine whether she can make certain accommodations that will make her lectures more accessible to him. Catherine is a bit baffled by this request. For starters, she wouldn't know where to start with such accommodations – after all, she is not a special educator. But even more importantly, why should she make changes to her lectures, as long as it is the student who is having a diagnosis? Could he not get some medication that would solve his problems with attention and organization? And if she starts making adjustments to her courses, would this not open up for even more students making requests for individual adaptations?

2.2 The social model of disability

Another way of understanding disability is presented in the social model. This model presents an alternative to the biomedical model, which has long been the dominant way of seeing disability. Within the social model, disability is seen as a social phenomenon, i.e., disability is considered a consequence of a society that is not adapted to all people (Oliver, 2013). The social model of disability takes human variation as the norm, and hence, it is only logical that some people are physically or cognitively impaired. In other words, impairment becomes a disability because society is not adapted to this human variation. According to the social model of disability, the accountability for disability lies not in the individual but in the

environment, and therefore, the solution should also be sought in the environment (Tøssebro, 2004).

Within a higher educational context, a social understanding of disability starts with the assumption that people's ability to benefit from such education does not depend on their cognitive or physical capacities. Instead, the social model claims that if people with impairments experience barriers to success in higher education, this must be due to structural, organizational, attitudinal, or physical aspects that exist within higher education institutions. Thus, disability may be considered a campus-wide issue that calls for systemic action (Evans et al., 2017). The social model of disability has been criticized for not acknowledging the personal experience of disability and for not recognizing disabled people's identities. Moreover, this way of understanding disability may be more appropriate for understanding physical and sensory disabilities than cognitive disability, for which it may be much harder to adjust the environment (Owens, 2014).

Vignette #2: A social understanding of disability

Pavel is a 43-year-old teacher in disability studies. With his background as a sociologist, Pavel is very much aware of how the environment shapes the individual, and he believes firmly that power structures and attitudes in society create barriers that disable people with impairments. He encourages his students to challenge "the tyranny of normalcy", and he is a strong advocate for universal design at his university. He also puts a lot of effort in creating awareness about how people's attitudes towards difference may lead to exclusion. He believes that variation is the norm, and he educates his colleagues about how they can accommodate their teaching to students with physical and sensory impairments.

This year, Pavel has a student with autism following his course, and he finds that his own understanding of disability is being challenged. Despite his efforts to create an inclusive learning space, the student is still struggling to participate and thrive in the group activities that Pavel finds so conducive for learning. Might there be more to disability than the barriers created by society?

2.3 The gap model: A relational understanding of disability

The gap model of disability provides a viewpoint that is situated between the biomedical and social model of disability. This model looks at the interaction between individual and environment to understand disability. Disability is then understood as a mismatch or a gap between the person's capabilities and the functional demands of the environment (Tøssebro, 2004). Thus, impairment becomes a disability when society's demands exceed the person's capability. On the other hand, if demands and capabilities fit, impairments are not experienced as disability. Hence, this view of disability is relative and situational. A person with a certain impairment may experience the impairment as a disability in one situation, but not in another, depending on how big the space is between social requirements on the one side and individual abilities on the other (Mittner et al., 2021). For instance, a person in a wheelchair may feel disabled when trying to get around with public transport that is not designed for wheelchair users, but the impairment may not be experienced as a disability while doing office work or when training with the paralympic basketball team. Within this understanding, the aim becomes to narrow the disability gap as much as possible, so that the notion of disability may be erased in certain contexts.

A relational view of disability has the potential to include more students with special needs or learner variability in higher education. Teachers who understand that the way they design their courses may either promote or hinder student participation and learning, may have a better starting point for creating inclusive learning spaces. By accommodating higher education to a diverse student population, more students may experience a good fit between their own learning abilities and teachers' demands.

Vignette #3: A relational understanding of disability

Theresa is a 46-year-old English language teacher. She has been teaching hundreds of students over the past decade, and she is always enthusiastic about meeting students with different strengths and challenges. She is interested to learn more about different learning difficulties, so that she can adapt her courses to students who struggle.

Theresa has clear expectations about the learning outcomes of her courses, but she also communicates regularly with her students to learn which learning activities they enjoy, what they find difficult, and what their goals are. Theresa is creative in her course design, and she always tries to develop courses that deliver content in a variety of ways. When assessing students, she provides them with choice about how to demonstrate their competence.

Theresa doesn't always succeed to accommodate her courses to all students, but she feels confident that her approach is efficient for including as many students as possible. Currently, Theresa has several students with special needs in her course, such as ADHD, hearing impairment, dyslexia, and autism. She has gathered information about these different challenges, and she has found ways to adapt her teaching, so that students with different capabilities can benefit optimally. It seems that her adaptations even contribute to improved goal attainment for students without special needs as well.

3. Universal Design for Learning (UDL)

The concept of Universal Design for Learning (UDL) has gained more and more importance over the past two decades (Fornauf & Erickson, 2020). With UDL, a shift of focus from the teacher to the student occurs, promoting a proactive design of learning environments to benefit a broad range of students and to minimize learning barriers (Coffman & Draper, 2022). Some of the underlying premises for UDL are that there exists systematic variability among students, and that different people process and engage with information in different ways (Meyer et al., 2014). It is therefore important that teachers can engage and assess diverse learners, focus on their different learning needs, plan for a variety of learning activities and teaching strategies that include collaboration, and evaluate fairly (Coffman & Draper, 2022). Thus, the essence of UDL is about how education may be adapted to the benefit of as many students as possible. It presents a flexible approach, not based on "fixing" students or their impairments, but on creating educational environments that are accessible to as many students as possible.

The core principles of UDL are the following: i) Teachers must provide students with various means of engagement, by addressing students' interests and motivation; ii) teachers must provide multiple ways of presenting content (e.g., by using oral presentation, video format, written texts, etc.); and iii) teachers need to provide students with a variety of learning activities through which students can demonstrate their learning (Coffman & Draper, 2022). These principles make it necessary for teachers to communicate with their students, so that strengths, needs, and interests may be shared. Implementing UDL in higher education also requires awareness and knowledge of learner variability and disability. Research shows that university lecturers often have poor knowledge of relatively common conditions such as autism, and hence, they may be unaware of the needs and challenges of students with such conditions (Sarrett, 2017). Greater awareness of common conditions and a better understanding of disability may help teachers to make their lectures available to a wider audience. Therefore, knowledge of disability and learner variability should become part of the curriculum for teachers in higher education.

Moreover, UDL requires that educators have the pedagogical insight, skills, and creativity to accommodate their teaching and learning activities to a wide range of learners. Hence, teachers need to develop a "toolbox" with pedagogical strategies for teaching and assessing, so that they can provide their students with the necessary variation in content delivery and evaluation. Since research indicates that teachers in higher education do not feel very equipped to differentiate their teaching to the diverse student population that they meet, it is recommended that this competence becomes an integral part of the basic pedagogical requirements for teachers in higher education.

Questions for further reflection and discussion

The following questions could be used for further reflection and discussion:

1. Which benefits and challenges of a diverse student population can you identify?
2. What are the obstacles of a biomedical understanding of disability in higher education?
3. Explain the advantages and disadvantages of a social model of disability.

4. Discuss the parallels between a relational understanding of disability and UDL.
5. UDL is partly derived from universal design in architecture. Discuss the meaning of differences and similarities between the field of architecture and the field of education for such a universal approach.

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5. Universal design, increasing accessibility and good practices – Norway and OsloMet

Weiqin Chen – Oslo Metropolitan University

Norun Sanderson – Oslo Metropolitan University

Introduction

This chapter gives a general introduction to the concept of universal design and its practice in Norway and Oslo Metropolitan University (OsloMet). The focus will, however, mainly be on universal design of ICT and related to ensuring digital learning materials in higher education.

1. Universal Design

One well known and commonly used definition for Universal Design (UD) is from the Center for Universal Design at North Carolina State University, defining UD as “The design of products and environments to be usable by all people, to the greatest extent possible, without adaptation or specialized design” (CUD NCSU, 2008). This definition seems to focus on the usability of “products and environments”. It does not mention accessibility or assistive aids (assistive technologies/devices).

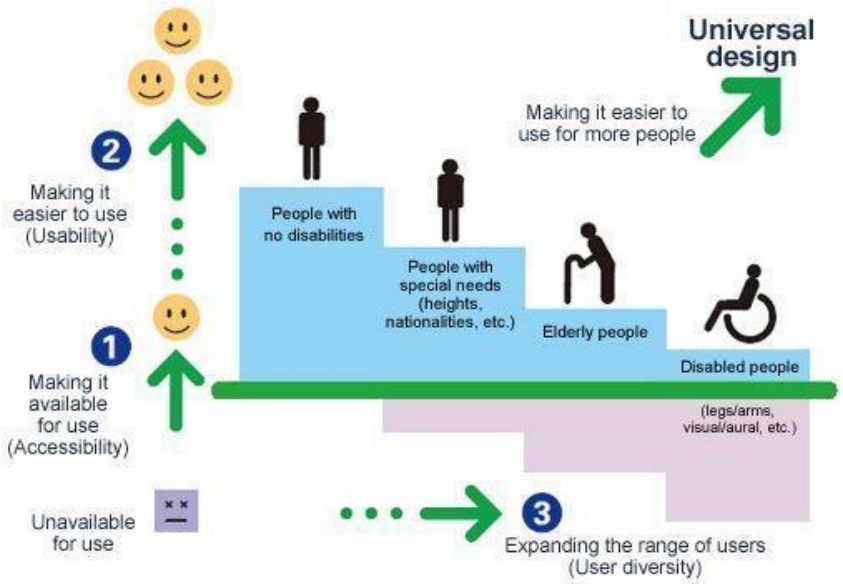
Another well-known definition of UD is from the United Nations Convention on the Rights for Persons with Disabilities from 2006, which, in its Article 2, defines UD to mean “The design of products, environments, programmes and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design”. It further states that UD “shall not exclude assistive devices for particular groups of persons with disabilities where this is needed” (UN CRPD, 2006, Article 2). This definition extends the definition from North Carolina State University by adding “programmes and services”, thus more clearly specifying the areas of application. It also clearly states that UD does not replace the use of assistive technologies for persons that need to use these.

A third definition of UD used in Norway, is from the Norwegian Equality and Anti-Discrimination Act from 2017, where UD is defined in Section 17 to mean "designing or accommodating the main solution with respect to the physical conditions, such that the general functions of the undertaking can be used by as many people as possible, regardless of disability" (Equality and Anti-Discrimination Act, 2017, s. 17). Although this definition, commonly used in Norway, mentions the "main solution" – which can be interpreted to mean either physical or digital – it simultaneously states that it is with respect to the "physical conditions", indicating the focus might be on products and environments. The Act does, however, have sections on UD of ICT, as described later in this chapter.

1.1 Three aspects of UD (of ICT)

UD in its essence has to do with making something easier to use for more people. Three aspects are essential to achieve UD of a product or solution: 1) ensure it is accessible or available for use (accessibility), 2) ensure it Is easier to use (usability), and 3) ensure user diversity is taken into consideration, i.e., cover a wide variation within the user group (user diversity). Figure 1 illustrates this view of UD.

Figure 1: Three aspects of universal design (ECS Accessibility Team, n.d.).



Thus, UD is more than accessibility, more than merely being able to access the content of a webpage or document, or to operate the user interface of an application. It is fully possible to have solutions that are technically accessible but

that are not easy to use efficiently, e.g., for people using a screen reader or navigating with the use of a keyboard instead of a mouse. Accessibility can even be secured by creating special solutions for people with disabilities, but such special solutions will not be consistent with the ideas of UD. This is because UD requires that you take persons with disabilities into account when designing the main solution for products and environment and consider the widest range of abilities among the potential users. In addition, considering aspects of usability, such as efficiency, learnability, memorability, etc., a solution that only ensures (technical) access does not necessarily cover these.

1.2 Accessibility and Usability

The standard ISO 26800:2011 (2011, s. 2.1) defines accessibility to mean the "extent to which products, systems, services, environments and facilities can be used by people from a population with the widest range of characteristics and capabilities to achieve a specified goal in a specified context of use", and adds that context of use here includes "direct use or use supported by assistive technologies" (ISO 26800:2011, 2011, s. 2.1).

The World Wide Web Consortium (W3C), through its Web Accessibility Initiative (WAI), offers several sets of guidelines covering aspects of web accessibility (W3C WAI, n.d.). The Web Content Accessibility Guidelines (WCAG) are well known and has been incorporated in standards and legislation in many countries, e.g., in the Norwegian Regulations on UD of ICT solutions (Forskrift om universell utforming av IKT-løsninger, 2013). WCAG is incorporated in the ETSI EN 301 549 Accessibility requirements for ICT products and services (ETSI 2021) and became a standard for web accessibility in 2012 (ISO/IEC 40500:2012). The current version of WCAG is WCAG 2.1 (W3C WAI WCAG 2.1, 2018). The ETSI EN 301 549 is further incorporated in the Norwegian legislation through the adoption of the EU Web Accessibility Directive – WAD (Directive (EU) 2016/2102).

Other accessibility guidelines from WAI include the Authoring Tool Accessibility Guidelines (ATAG) and User Agent Accessibility Guidelines (UAAG). ATAG covers all tools used to create and publish content for the web, including amongst others learning management platforms, content management tools, social

media platforms, and text editors that allows saving the file as HTML. UAAG covers tools used for rendering the content to the user, i.e., browsers, assistive technologies, and multimedia players (WAI, n.d.). These guidelines are not currently covered in the Norwegian legislation.

Usability, another of the three aspects of UD, is defined in ISO 9241-11:2018 (2018, Part 11, s. 3.1.1) to mean the “extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use” (ISO 9241-11:2018, 2018, Part 11, s. 3.1.1). A note to the definition explains that the term “specified” as used in this definition refers to “the particular combination of users, goals, and context of use for which usability is being considered” (ISO 9241-11:2018, Part 11, s. 3.1.1, Note 1 to entry).

2. UD Practices in Norway

2.1 The Disability Gap Model – the view on disability in Norway

In Norway, the relational model of disability is commonly known as the disability GAP model. The disability GAP model was first promoted in Norway by Professor Ivar Lie, at the University of Oslo in the 1970’s. This model is also known as the Nordic or Scandinavian Model of Disability. The model is based on the participation in one’s community and society and relates disability to the environment. This is so because disability is seen as something a person experiences when encountering barriers or limitations when taking part in activities seen as important in the society in which the person lives.

Figure 2: The disability GAP model, adapted from Meld. St. 40, 2002-2003, p. 9.

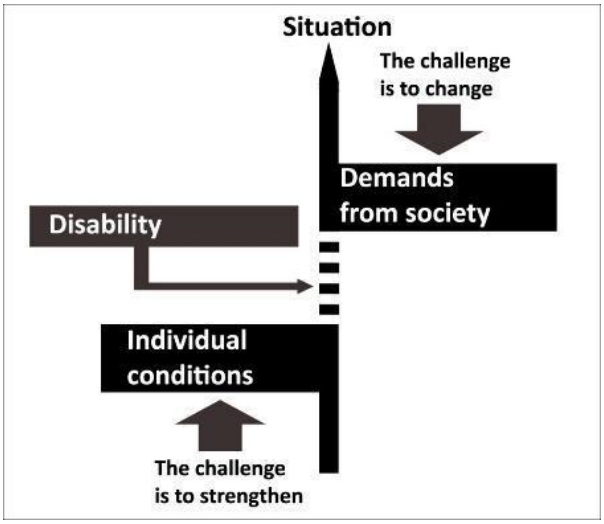


Figure 2 presents the disability GAP model. It is an adapted version of a figure in the Norwegian Report to the Storting, Meld. St. 40 (2002–2003), 'Nedbygging av funksjonshemmende barrierer' (Meld. St. 40, 2002-2003, p. 9). The model illustrates how UD can help to reduce the gap between the individual's capabilities and the demands of society by reducing the requirements put on individuals. The disability GAP model defines disability as occurring in the mismatch or gap between the demands from society and the individual conditions. The challenge is to strengthen the individual conditions and change (reduce) the demands from society. Disability is here viewed in relation to the environment that surrounds a person, so the focus is not only on the person's function or ability, but also, to a greater extent, on factors that can be changed to decrease the requirements or increase the functioning and, in this way, reduce disability. The emphasis in this model is on the individual's own evaluation of their opportunities, based on their experience of the gap between their abilities and the requirements from their environment.

UD and other inclusive design approaches are strategies to reduce the requirements from the environment, that is, strategies to lower the threshold for the use of ICTs. As are UD for learning and instruction (UDL/UDI). Assistive technologies (ATs) can be regarded as tools to strengthen the abilities of individuals.

2.2 Norwegian laws and regulations relevant to UD of ICT

In Norway, new ICT solutions has had to be universally designed since 1st of July 2014. The education sector had to be universally designed from 1st of January 2019. This includes digital learning materials. Existing ICT solutions had to be universally designed before 1st of January 2021 (Equality and Anti-Discrimination Act, 2017, s. 41).

The Norwegian Equality and Anti-discrimination Act from 2017 (Equality and Anti-Discrimination Act, 2017) has been in effect since the 1st of January 2018. The Act replaced the Norwegian Anti-Discrimination and Accessibility Act of 2009, as well as other existing discrimination Acts in Norway. The education sector was included in 2017. Chapter 3 *Universal design and individual accommodation* is the part of the Act of specific relevance to UD. Sections 18 and 19a focus specifically on UD in relation to ICT, while sections 20-23 focus on the right to individual accommodation in respect of municipal services, job seekers and workers, and pregnant job seekers, workers, pupils, and students. UD is defined in Section 17 of this Act, as presented in the section 'Universal Design' in this chapter.

Section 18 *Universal design of ICT* states that only ICT solutions that support the undertaking's general functions and that are main solutions aimed at or made available to the general public have to be universally designed. This section also defines ICT to be "technology and technology systems that are used to express, create, convert, exchange, store, duplicate or publish information, or that otherwise make information usable" (Equality and Anti-Discrimination Act, 2017, s. 18).

The Norwegian Regulations on Universal Design of ICT of 2013 also applies to the education sector. These regulations are only available in Norwegian. Section 2 *Scope* states amongst others that the regulations cover web solutions, including digital learning materials and self-service kiosks. This section also defines digital learning materials to be (translated from Norwegian) "Web based tools that can be used in the pedagogical work, and that are developed with the purpose of supporting learning activities" (Forskrift om universell utforming av IKT-løsninger, 2013, s. 2).

Section 4 *Requirements for development of ICT solutions*, states that Web solutions must at least be developed in accordance with the Web Accessibility

Guidelines version 2.0 (WCAG 2.0)/ NS/ISO/IEG 40500:2012, at levels A and AA except for success criteria 1.2.3, 1.2.4 and 1.2.5, or corresponding to this standard. For Self-service machines (kiosks), a list of 10 different standards is provided (Forskrift om universell utforming av IKT-løsninger, 2013, s. 4).

2.3 UD in relation to education in Norwegian governmental strategies and action plans

The action plan 'Bærekraft og like muligheter – et universelt utformet Norge 2021-2025' (2021), Eng.: 'Sustainability and equal opportunities – a universally designed Norway 2021-2025', has a section on 'Education', covering all levels of education, including nursery schools/kindergartens. It explains how UD in relation to the physical environment, buildings, pedagogics, digital learning materials and resources, and UD of ICT, are important to ensure inclusive education at all levels. The section on education also presents some action points for continued focus, including a) to increase the competence on UD in the higher education sectors and b) to support the development of digital learning materials. The section further ensures continued support for Universell: the National Coordinator of Accessibility of Higher Education in Norway (Bærekraft og like muligheter – et universelt utformet Norge 2021-2025, 2021, pp. 76-79).

Universell got established in 2003. It has been part of the Norwegian Directorate for Higher Education and Skills since 2021. Universell has four main roles: 1) as *driving force* for conducting actions in cooperation with, amongst others, the higher education institutions, to strengthen good practice and change what does not work well; 2) as *advisor and cooperating partner* for amongst others government ministries, directorates, and agencies; 3) to *develop and share knowledge* within its main fields of operation; and 4) as *network builder* for employees in the higher education sector, as well as other partners within its main fields of operation (Om Universell – virksomhetsplan og strategi, n.d.).

In 'Strategi for digital omstilling i universitets- og høyskolesektoren 2021-2025' (2021), Eng.: 'Strategy on the transition to digitalisation in the higher education sector in Norway 2021-2025', UD is considered one of the prerequisites for digital transformation of higher education. The strategy also states that the digital initiatives

and measures developed in the HE sector must adhere to the requirements in The Norwegian Equality and Anti-discrimination Act on UD of digital services and teaching resources (Strategi for digital omstilling i universitets- og høyskolesektoren 2021-2025, 2021, p.10).

The Section on 'Universal design and adapted education' states amongst others that all studies at universities and university colleges must be universally designed, and that the academic staff must have access to universally designed digital tools and services. It further highlights that the institutions should aim towards a high competence within universal digital design. This competence should include knowledge on technical requirements and knowledge on universal adaptation of digital education. It also states that the requirements to UD are valid for researchers, teachers, and students, as well as technical-administrative staff. (Strategi for digital omstilling i universitets- og høyskolesektoren 2021-2025, 2021, pp.32-33)

3. UD in OsloMet

There are several aspects of UD in OsloMet that could be relevant to include. We have however chosen to focus on three aspects in this section: how UD is covered in university strategies and action plans, how UD is implemented across the university, and on UD-related courses offered in some study programmes.

3.1 Universal design and related concepts in OsloMet strategies

In OsloMet university's Strategy 2024, the term "universal design" is not mentioned. "Diversity" is however emphasised as one of the university's three main values (the other two being "Learning" and "Innovative"). It mentions Oslo's "diverse population" and states that the university will "promote equality and understanding—in society in general and among our students and staff in particular" (OsloMet Strategy 2024, n.d.). At faculty level, UD does not appear to be in focus in the strategies at any of the university's four faculties.

3.2 How universal design (of ICT) is implemented across the university

The OsloMet university web site offers advice both in Norwegian and English on UD and accessibility aimed towards web editors and teachers, as well as on how to make digital documents accessible. It also provides some general information about UD and requirements in the Norwegian legislation. This information is however only available in Norwegian (OsloMet Universal Design, n.d.).

The university website also has an Accessibility statement available in both English and Norwegian, as required by the current Norwegian legislation (OsloMet Accessibility statement, n.d.).

3.3 Courses and programs in Universal Design of ICT at OsloMet

The Department of Computer Science introduced a bachelor course in UD of ICT ca. 2007-2008, supplementing an already existing course in human-computer interaction. The department around the same time also started work to establish a master programme within UD of ICT. The master programme in Universal design of ICT started in 2012 and continued as a stand-alone study programme until 2019, when it became one of the specialisations in a new master programme in Applied Computer and Information Technology – ACIT. The specialisation in UD of ICT offers three mandatory courses and three electives that can be chosen by students in all specialisations in the master programme.

The department currently offers five bachelor courses related to human-computer interaction and UD of ICT. Some courses are mandatory for students, depending on their study programme and chosen specialisation, while all courses are available as electives for bachelor students in the Department of Computer Science.

At PhD level, the faculty of Technology, Art, and Design (TKD) currently offers one elective course focusing on UD.

3.4 Related research in OsloMet

The research group Universal Design of ICT was established in 2014 and currently consists of four full professors, six associate professors and two PhD candidates. The activity in the group aims to better understand of the ICT challenges faced by diverse users in diverse situations, and also designs, develops and evaluates ICT systems with users to ensure UD. Furthermore, group members design and teach courses either directly concerning or related to UD of ICT. All the courses and research projects make use of state-of-the-art technology available on-site at the Interaction Lab (iLab) in OsloMet. The following sub-sections present some of the relevant projects.

3.4.1 The accessibility of Learning Management Systems

In these series of research, several LMSs were studied, including Fronter, Moodle, Sakai and Canvas. Most of the studies focused on teachers and the barriers they may face when using these systems to carry out their teaching activities. The research questions were

- To what extend do LMSs comply with ATAG (Authoring Tool Accessibility Guidelines) on content creation?
- What accessibility issues exist in LMSs and how should they be addressed?

Heuristic evaluations were carried out where 3-4 experts in accessibility and teachers (one was partially sighted) evaluated the pages and functions in LMSs according to ATAG 2.0 principles and success criteria. The tasks the evaluation focused on include creating and organizing course content, grading, and giving feedback.

The findings showed that the level of conformance of the LMSs to the ATAG2.0 guidelines was low. None of the LMSs complied fully to ATAG 2.1 Part A. We have identified diverse accessibility issues in all LMSs. For more details, please refer to (Chen et al., 2013 and Chen et al., 2015).

3.4.2 MOOC for Digital Accessibility

In an Erasmus+ project titled MOOCAP (https://moocap.gpii.de) eight European Universities created 11 MOOCs on the various aspects of digital accessibility, including one Introductory course and 10 specialized courses:

- Accessible Gamification.
- User-Centered Design for Accessibility
- Inclusive Learning and Teaching Environments
- Accessible Documents
- Intellectual Disability and Inclusion
- Assistive Technologies
- Accessible Mobile Apps
- Accessible Web
- User Interface Personalization
- Design Innovation: Inclusive Approaches

All the course materials are open educational resources. The 5-week Introductory course was hosted in the FutureLearn platform and had two runs with over 7000 registered users. For more information about the project, please refer to (Gilligan et al., 2018 and Gilligan et al., 2015).

3.4.3 Understanding faculty's attitude and knowledge on UD

The Awareness project was funded by the Faculty of Technology, Art and Design in OsloMet. 35 faculty members (17 from Poland and 18 from Norway) who were teachers in computer science & engineering science faculties were recruited to participate in individual semi-structured interviews. A thematic data analysis method was used to analysis the interview data.

The results showed a general positive attitude towards inclusion and UD-legislations, although the majority of participants lacked awareness of UD-legislations and guidelines and sufficient understanding of and appropriate terminology for digital barriers and assistive technology. The participants thought the UD-legislations were important but challenging to implement and showed scepticism towards full inclusion. They also lacked practical knowledge on how to make digital

learning materials and courses accessible. Their proposed solutions for addressing the barriers were mostly intuitive – only cover barriers that were easy to notice and identify.

Overall, the findings indicate that teachers are willing to make their digital learning materials UD, but they lack training and enough time to do it, adequate support, as well as clear instructions from management that this is something they are required to do. For more details, please refer to (Chen et al., 2018; Sanderson et al., 2022).

3.5 Raising competence in UD in OsloMet

3.5.1 Staff training seminar

A 3-hour seminar in UD of ICT at the HiOA-Academy (now OsloMet-Academy) was given by the members of the research group of Universal Design of ICT. About 60 staff participated in this seminar. The content of this seminar included

- information on UD of ICT and regulations
- simulation exercises to increase the understanding and awareness of the difficulties people with disabilities may experience when using non-UD digital solutions and documents
- Hands-on practices on how to make universally designed digital documents, presentations and PDFs

The seminar also provided a checklist to the participants so that they can use it in their everyday work when preparing digital products.

3.5.2 The Ildsjel-project

In the Ildsjel-project (https://app.cristin.no/projects/show.jsf?id=2040746), 22 employees including both academic and administrative staff were recruited in a training program on UD and ICT. The employees represented all four faculties and two research centres. They were willing to be “UD of ICT enthusiasts” to increase their competence on and help their colleagues to practice UD.

The program arranged seminars introducing UD of ICT and related regulations, workshops for practical training, and individual follow-up support from

assistants recruited among master students within the UD of ICT master programme. In the end of the project, an Ildsjel-Award for “Best practice at OsloMet” was awarded to the National Centre of Multicultural Education (NAFO) at the Faculty of Education and international studies for their efforts and impacts in promoting and implementing UD-ICT in the multiple language teaching materials for schools.

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Appendix: full text descriptions for figures

Figure 1: Three aspects of universal design (ECS Accessibility Team, n.d.).

This infographic is based on a line graph with an x and y axis. Large text on the top right says “Universal design” with an arrow pointing upwards to the right and beneath this it says “making it easier to use for more people.” On the left at the bottom of the graph’s y-axis it says “unavailable for use” beside a square-faced smiley with the letter x in place of eyes. An arrow points upwards to a single smiley face where it says “1. Making it available for use (accessibility).” A second arrows points higher to three smiley faces, where it says “2. Making it easier to use (usability).” The graph’s x-axis has an arrow pointing to the right where it says “3. Expanding the range of users (User diversity).” The x-axis has a drawing of four steps which start high and proceed downwards. Each step has a caption. Step 1 “People with no disabilities.” Step 2 “People with special needs (heights, nationalities, etc.).” Step 3 “Elderly people.” Step 4 “Disabled people (legs/arms, visual/aural, etc.).”

Figure 2: The disability GAP model, adapted from Meld. St. 40, 2002-2003, p. 9.

This infographic is a flowchart with a line starting at the base of the image. The line appears briefly broken in the middle with the caption “disability.” At the pointed top of the line, it says “Situation.” To the left of the line, it says “The challenge is to strengthen” and an arrow points upwards to the phrase “Individual conditions” which appears just before the line breaks in its middle. On the right of the line and towards the top it says “The challenge is to change” and an arrow points downwards to the phrase “Demands from society” which appears just before the line breaks in its middle.

6. Universal Design, increasing accessibility and good practices - Digital Competence Centre, University of Warsaw

Dorota Sidor - University of Warsaw

Introduction

This chapter is going to address Moodle accessibility and UDL guidelines compliance, as it is still one of the most popular Learning Management Systems (LMS) among Higher Education Institutions (HEI's) (Hill, 2017; Moodle Statistics, n.d.). As the University of Warsaw Moodle instance (Kampus) is going to be used to develop and deliver e-learning courses for the SCALED project target audience, the chapter will also describe the University's e-learning environment, its legal context regarding accessibility and good practices in place.

1. Accessibility guidelines for Learning Management Systems

Learning Management Systems (LMS) are very much different from static websites - they are designed to do significantly more than simply presenting text and audio-visual educational content. Contrary to websites whose main purpose is to present the content, e-learning platforms serve also the purpose of creating the content and interacting with the content. Most of the LMS available on the educational market provide their users with roughly the same functionalities, such as text and audio-visual presentation tools, quizzes, and assignments. Therefore, they should be compliant with the same guidelines for digital accessibility.

The following guidelines are essential for digital accessibility of LMS:

- Presenting the content:
  Guidelines "explain how to make web content more accessible to people with disabilities. Web "content" generally refers to the information in a web page or web application, including:

    - natural information such as text, images, and sounds
    - code or markup that defines structure, presentation, etc.” (Web Content Accessibility Guidelines (WCAG 2 Overview, 2022)
- Creating the content:
  “Guidelines for designing web content authoring tools that are both more accessible to authors with disabilities (Part A) and designed to enable, support, and promote the production of more accessible web content by all authors (Part B)”. (Authoring Tool Accessibility Guidelines (ATAG) 2.0, 2022)
- Interacting with the content:
  “This specification provides an ontology of roles, states, and properties that define accessible user interface elements and can be used to improve the accessibility and interoperability of web content and applications. These semantics are designed to allow an author to properly convey user interface behaviors and structural information to assistive technologies in document-level markup” (Accessible Rich Internet Applications (WAI-ARIA) 1.1, 2022). ARIA guidelines tackle issues like: keyboard navigation, form properties, drag-and-drop support, alert and dialog boxes, reusable component libraries, and testing.

It is worth taking into account that all of these guidelines stem from one set of POUR principles of accessibility, which recommend that websites, web applications, browsers, and other tools should be as follows:

- P - Perceivable - information and user interface components must be presentable to users in ways they can perceive.
- O - Operable - user interface components and navigation must be operable.
- U - Understandable - information and the operation of the user interface must be understandable.
- R - Robust - content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies (W3C Accessibility Principles, 2022).

These principles should be followed independently of the updates for the guidelines that may come in the future.

2. Moodle quick overview

Moodle (Modular Object-Oriented Dynamic Learning Environment) is a pioneer LMS, which has been developed since 1999. According to the official project website, the philosophy of teaching and learning behind Moodle is led by concepts such as: “constructivism, constructionism, social constructivism, and connected and separate” (Moodle Philosophy, 2018), resulting in a learner-centric and collaborative learning environment.

It is an OpenSource project, which means that its code is open for modifications, development and integration with other software - it is not restricted nor semi-restricted as in the case of commercial LMS solutions. As a result, it is developed and supported by a large worldwide community of programmers, teachers, instructional designers, etc.

Moodle follows a plug-in concept. This means it is possible to broaden the functionalities of the platform by installing extensions so that the basic version of LMS can be customised to specific Higher Education Institutions’ needs. There are thousands of plugins developed by the Moodle community that serve a plethora of purposes. However, each owner of an individual instance of a platform can develop their own plugins or modify existing ones taking into account their individual circumstances.

3. Moodle accessibility

3.1 Moodle conformance to W3C Guidelines

As for 2022, Moodle developers state that the platform is conforming to the following accessibility standards (Moodle Accessibility, 2022):

- “WCAG 2.1
  When deciding how Moodle should present its content for best Web accessibility, the WCAG 2.1 guidelines are followed.
- ATAG 2.0
  As Moodle is a place to construct content (as well as consume content), we also refer to the ATAG 2.0 guidelines. In Moodle 2.7 a new editor Atto was

added that not only helps to improve how everyone can use the editor itself, but also helps to improve the accessibility of the content produced with it.

- ARIA 1.1
  As many parts of the Moodle user interface are dynamic and interactive, we follow the ARIA recommendations to inform assistive technologies, such as screen-readers”.

Although Moodle LMS is officially accessible, the level of conformance might actually vary. It is also important to note that accessibility of every installation / instance of Moodle should be examined individually (bearing in mind that the Moodle Core - the basic version ready for download and installation on a particular owner’s server - is considered accessible). There are still older versions used, as many institutions cannot upgrade their system on a day-to-day basis because of the organisational challenges it presents. As Moodle is an OpenSource platform and has the aforementioned plug-in concept at its core, the code behind specific instances of Moodle is constantly evolving and frequently being modified by individual software teams. Each of the product owners (specific Moodle instance administrators) can enable and disable modules, install or develop plugins and customise the interface (using themes and thousands of settings).

3.2 H5P accessibility

One of the more interesting issues regarding Moodle accessibility is the accessibility of H5P interactive content used within online courses. H5P is a format that is being developed separately from the Moodle community, but since Moodle 3.8 release, H5P tools are included into Moodle Core. This means that it is a standard authoring tool within this LMS.

According to the official H5P website (2022), “H5P is a plugin for existing publishing systems that enables the system to create interactive content like Interactive Videos, Presentations, Games, Quizzes”. The H5P content is actually coded in HTML5, meaning it should be easily available in browsers, responsive and mobile friendly.

However, not all of the available 56 content types pass the WCAG 2.1 criteria.

H5P developers have published a list containing information on their accessibility, maintenance responsibility (core developers vs community) and browser support (Accessibility of H5P content types, 2022). Fortunately, some of the most commonly used content types (such as Accordion, Course Presentation, Flashcards, Image Hotspots, Summary) are accessible, maintained by the core developers team and supported by all browsers. Nevertheless, teachers and resource creators should be aware of this issue when considering accessibility of their course content.

3.3 Moodle and UDL principles

An interesting approach to the connection between Universal Design for Learning and Learning Management Systems is that the LMS itself can facilitate UDL implementation in higher education contexts. According to Fovet (2018) “tools and strategies that align with UDL and are already part of instructors' reality (...) many of the features discussed are present generically within most LMS encountered in higher education”. This means that implementation of UDL principles to the pedagogical strategies could be naturally supported by widespread usage of LMS at HEIs. As Fovet points out, “if the tools and strategies sought within a UDL reflection are available and ready for the picking on an LMS platform, lecturer buy-in suddenly becomes much more likely and attainable” (Fovet, 2018).

The following table presents a brief juxtaposition of Moodle functionalities and possibilities in the context of UDL principles.

Table 1. Applying UDL Principles to Moodle functionalities

The UDL Guidelines (CAST, 2018)	**Moodle**
Multiple means of representation to give learners various ways of acquiring information and knowledge	● enforcing clear structure to the course content (modules, resources, activities) ● multiple ways to navigate through the course content ● many different presentation options: customising display of information,

The UDL Guidelines (CAST, 2018)	Moodle
	uploading different type of multimedia as alternatives to text ● linking glossary entries across the course content ● linking to appropriate resources across the course content
Multiple means of expression to provide learners alternatives for demonstrating what they know	● multiple tools for assessment and self-assessment (quizzes, assignments, H5P interactive content, lessons, etc.) ● tools for different levels of collaboration (forums, wikis, chats, workshops, etc.)
Multiple means of engagement to tap into learners' interests, challenge them appropriately, and motivate them to learn.	● choice and autonomy related to asynchronous modality of the courses ● tools for different levels of collaboration (forums, wikis, chats, workshop etc.) as well as for individual work, ● tools for reflection and evaluation (questionnaires) ● progress bars ● instant feedback on progress (automated scoring) ● automated information on deadlines and timing supporting strategic planning

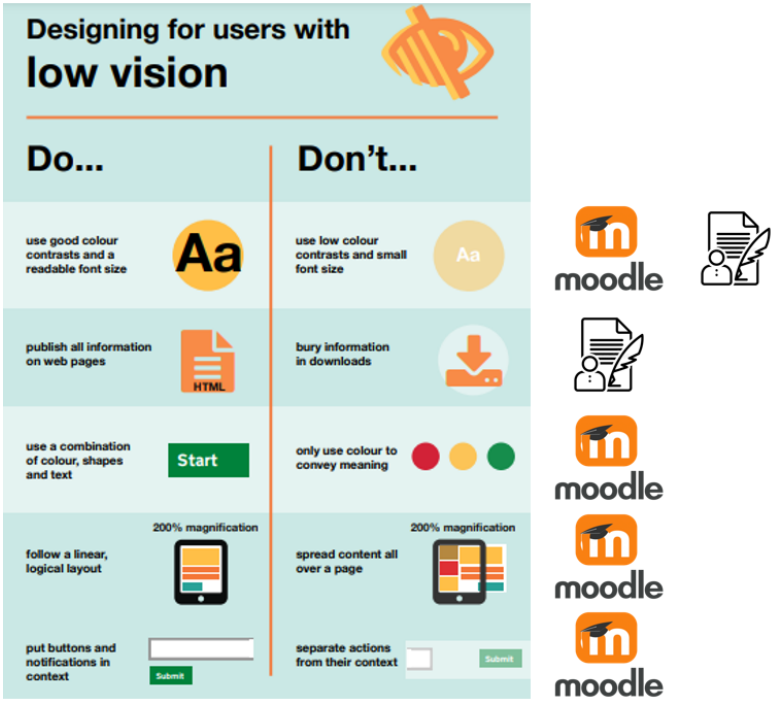
4. Accessible design for authors

Regardless of any digital accessibility of any given LMS, the human input to the LMS

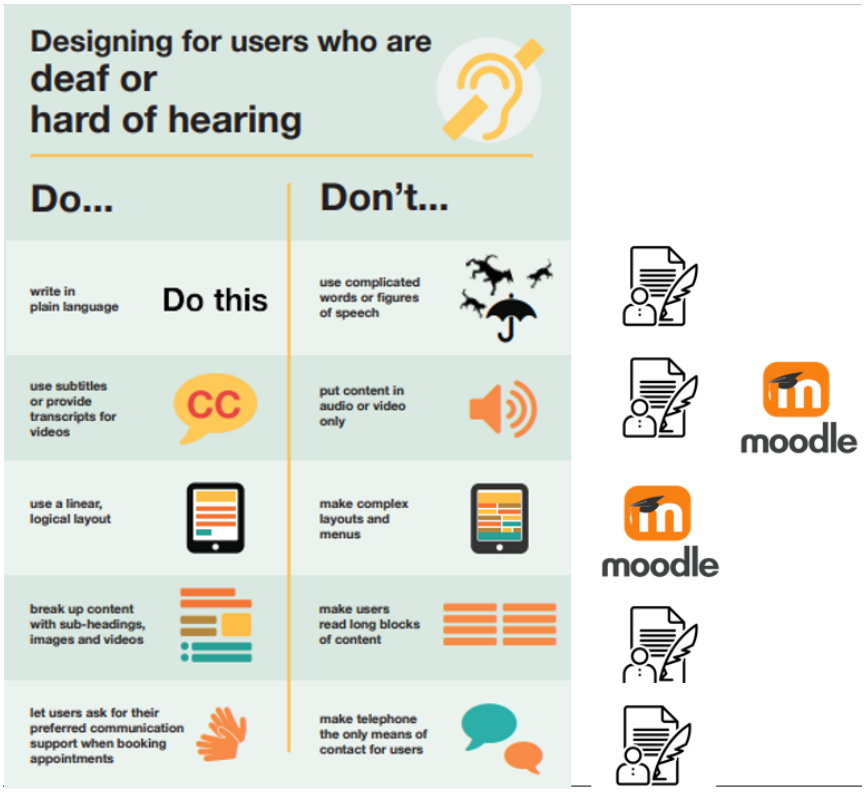
is crucial, as the accessibility depends not only on the technical framework (in this case: Moodle platform), but also on the design choices made by the teacher, instructional designer or content creator.

The figures below (based on Designing for Accessibility, 2022) show which accessibility-supporting design actions depend on the Moodle itself and which on the person creating the course.

Figures 1-6. Accessible design guidelines vs. Moodle and teacher actions

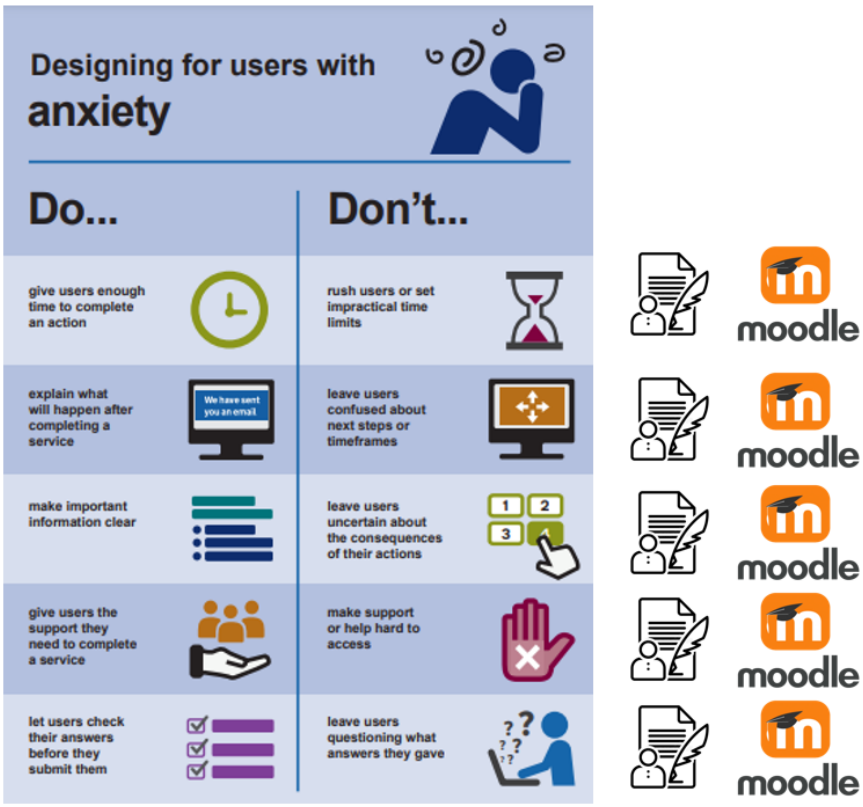



Designing for users of
screen readers
Do...
Don't...
describe images and provide transcripts for video
<alt>
only show information in an image or video
follow a linear logical layout
spread content all over a page
structure content using HTML5
<h1>
<nav>
<label>
rely on text size and placement for structure
36pt, bold
Header
build for keyboard use only
force mouse or screen use
write descriptive links and headings
Contact us
write uninformative links and headings
Click here


Designing for users who are
deaf or
hard of hearing
Do...
Don't...
write in plain language
Do this
use complicated words or figures of speech
use subtitles or provide transcripts for videos
CC
put content in audio or video only
use a linear, logical layout
make complex layouts and menus
break up content with sub-headings, images and videos
make users read long blocks of content
let users ask for their preferred communication support when booking appointments
make telephone the only means of contact for users


Designing for users with
dyslexia
Do...
Don't...
use images and diagrams to support text
use large blocks of heavy text
align text to the left and keep a consistent layout
underline words, use italics or write in capitals
DON'T DO THIS
consider producing materials in other formats (for example audio or video)
force users to remember things from previous pages - give reminders and prompts
keep content short, clear and simple
rely on accurate spelling - use autocorrect or provide suggestions
dyslexia
dsyle
let users change the contrast between background and text
put too much information in one place


Designing for users on the
autistic spectrum
Do...
Don't...
use simple colours
use bright contrasting colours
write in plain language
Do this
use figures of speech and idioms
use simple sentences and bullets
create a wall of text
make buttons descriptive
Attach files
make buttons vague and unpredictable
Click here!
build simple and consistent layouts
build complex and cluttered layouts



5. Accessibility of University of Warsaw Moodle platform (Kampus e-learning environment)

5.1 LMS at University of Warsaw

At the University of Warsaw (UW) there is a university-wide e-learning environment called Kampus, with Digital Competence Centre (DCC) as a product owner. There are also a few e-learning Moodle instances that are provided by some of the UW faculties, independently of the DCC. Nevertheless, the vast majority of University of Warsaw e-learning activities are taking place within the Kampus environment. As of 2021, Kampus has had over 56 000 active student users and over 2600 active teacher users.

The Kampus environment consists of several instances based on Moodle LMS. The major instances are specialised to serve different purposes:

- General teaching and learning (Kampus 1 and Kampus 2)
- Written exams and final assessments (Kampus-egzaminy)
- Admission exams (Kampus-rekrutacja)

- Developing UW partnership projects (like SCALED) and initiatives for the general public (Kampus-projekty)
- Staff training (online courses & enrolment for F2F training) (Kampus-pracownik)
- Course and exam data integration (E-learning UW website)

All of the instances are integrated with various UW IT systems (e.g. Central Authentication Server, Student Management System - USOS, Internet Recruitment of Candidates). They are also heavily modified (compared to the basic version of Moodle) to meet University of Warsaw needs and expectations. Currently, DCC is preparing for a grand upgrade of all the elements of the Kampus environment to Moodle 4.1.

5.2 The Digital Competence Centre

The product owner of Kampus e-learning environment, the DCC, is an e-learning and digital humanities university-wide unit promoting the use of new technologies in research, didactics and administration. Established in 1999 (previously as Centre for Open and Multimedia Education), it has over 20 years of experience in developing online teaching and learning methodologies, providing the University of Warsaw with Learning Management System - Kampus environment and several online tools related to teaching and training build for specific UW needs, such as e-portfolio for Recognition of Prior Learning, staff training data management system etc. As of 2022, DCC has over 30 employees working in teams: Education & Training Team, IT Team, Digital Humanities Team and administration staff. The teams consist of employees with diverse specialities: instructional designers, project managers, programmers, content creators. The DCC is responsible for supporting the academic staff (in both educational and research activities). It provides the UW community with consultations, instructions (self-paced online courses for students and teachers), ongoing helpdesk and regular training on online teaching and learning.

5.3 Accessibility regulations at the University of Warsaw

According to the Act on Digital Accessibility of Websites and Mobile Applications of Public Entities (2019), all public entities, including the University of Warsaw, are

required to ensure digital accessibility of their websites and mobile applications for people with disabilities. The state of digital accessibility of the website or mobile application must be examined during an accessibility audit and described in the accessibility declaration. The rules for implementing the Act at the University of Warsaw are set out in Regulation on Ensuring Accessibility for People with Special Needs at the University of Warsaw (2020). The Office for Persons with Disabilities supports organisational units of the University of Warsaw regarding ensuring digital accessibility of websites and mobile applications (Digital Accessibility of the Websites of the University of Warsaw, 2021). These regulations apply also to the Kampus e-learning environment.

One of the challenges regarding online teaching and learning environments of this size is how to provide the same levels of accessibility and conformance to accessibility standards and UDL principles among all the instances of the Moodle platform, while each of the platforms serves a different purpose and has its own specific configuration. For example, in Kampus-egzaminy the system is designed in a way that does not allow for a course containing a single exam to be available for more than four hours (preferably it should be one or two hours), which is a trade-off between giving students enough time to perform time-consuming examination tasks and a technical and organisational necessity to fairly distribute server resources among 56 University units. Granting unlimited access to server space for performing simultaneous final exams would eventually mean that the faculties with large numbers of students would effectively block the possibility of performing online exams for faculties with fewer students. The time restrictions in place have an influence on accessibility / adjustment matters, such as granting more time for the students with specific learning needs. This issue does not exist within Kampus 1 and 2 courses which contain formative or summative assessment tasks that do not necessarily require simultaneous activity of large groups of students.

5.4 Good practices at the Digital Competence Centre

The Digital Competence Centre, as the product owner of Kampus, is responsible for maintaining accessibility aspects of all of the elements of the e-learning environment, including implementation of accessibility-supporting adjustments to the source code and the interface.

One of the most obvious ones is implementing a colour scheme for people with visual impairments, see Figure 7.

The Kampus helpdesk provided by the DCC is also collaborating with The Office for Persons with Disabilities in terms of:

- setting individual time frames for students, if needed
- granting individual access to exams
- developing alternative forms of assessment in cooperation with the teachers.

The DCC helpdesk supports individual teachers who need consultation on accessible course and assessment design as well as university bodies like The University Council for the Certification of Language Proficiency.

Figure 7. Colour scheme for the Kampus platform.

In 2012 the DCC has also developed a Universal design for e-learning course based on The Office for Persons with Disabilities publication “Uniwersytet dla wszystkich. Uniwersalne projektowanie zajęć dydaktycznych “(“University for All. Universal Design for Learning”) (Wdówik, 2010) as a part of “University for All” EU project. A number of teachers have completed the training and received appropriate certificates.

6. Results and conclusions

University of Warsaw Kampus e-learning environment, based on Moodle, is compliant with the accessibility guidelines. However, the accessibility of individual courses and assessments depends largely on the work of the teachers creating them. Although the University of Warsaw already provides its employees with accessibility training (offered by The Office for Persons with Disabilities), it is also worth taking into consideration that information on e-learning course accessibility and UDL should be a more structured and straightforward part of DCC’s training offer. This could be achieved through the participation in the SCALED project and dissemination of good practices developed as part of its results.

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Appendix: full text descriptions for figures

Figures 1-6. Accessible design guidelines vs. Moodle and teacher actions

Figure 1 Designing for users with low vision

Do	Don't	Design action depends on
use good colour contrasts and a readable font size	use low colour contrasts and small font size	Moodle and course creator
publish all information on web pages	bury information in downloads	course creator
use a combination of colour shapes and text	only use colour to convey meaning	Moodle
follow a linear logical layout	spread content all over a page	Moodle
put buttons and notifications in context	separate actions from their context	Moodle

Figure 2 Designing for users of screen readers

Do	Don't	Design action depends on
describe images and provide transcripts for video	only show information in an image or video	course creator
follow a linear logical layout	spread content all over a page	Moodle
structure content using HTML5	rely on text size and placement for structure	Moodle and course creator
build for keyboard use only	force mouse or screen use	Moodle
write descriptive links and headings	write uninformative links and headings	course creator

Figure 3 Designing for users who are deaf or hard of hearing

Do	Don't	Design action depends on
write in plain language	use complicated words or figures of speech	course creator
use subtitles or provide transcripts for videos	put content in audio or video only	Moodle and course creator
use a linear, logical layout	make complex layouts and menus	Moodle
break up content with sub-headings, images and videos	make users read long blocks of content	course creator
let users ask for their preferred communication support when booking appointments	make telephone the only means of contact for users	course creator

Figure 4 Designing for users with dyslexia

Do	Don't	Design action depends on
use images and diagrams to support text	use large blocks of heavy text	course creator
align text to the left and keep a consistent layout	underline words, use italics or write in capitals	Moodle
consider producing materials in other formats (for example audio or video)	force users to remember things from previous pages – give reminders and prompts	course creator
keep content short, clear and simple	rely on accurate spelling – use autocorrect or provide suggestions	course creator
let users change the contrast between background and text	put too much information in one place	Moodle

Figure 5 Designing for users on the autistic spectrum

Do	Don't	Design action depends on
use simple colours	use bright contrasting colours	course creator
write in plain language	use figures of speech and idioms	course creator
use simple sentences and bullets	create a wall of text	course creator
make buttons descriptive	make buttons vague and unpredictable	Moodle
build simple and consistent layouts	build complex and cluttered layouts	Moodle

Figure 6 Designing for users with anxiety

Do	Don't	Design action depends on
give users enough time to complete an action	rush users or set impractical time limits	Moodle and course creator
explain what will happen after completing a service	leave users confused about next steps or timeframes	Moodle and course creator
make important information clear	leave users uncertain about the consequences of their actions	Moodle and course creator
give users the support they need to complete a service	make support or help hard to access	Moodle and course creator
let users check their answers before they submit them	leave users questioning what answers they gave	Moodle and course creator

7. Universal design, increasing accessibility: Good practices

Agnieszka Bysko - University of Warsaw

Introduction

This chapter introduces how inclusion, Universal Design for Learning (UDL), and accessibility guarantees are regulated and introduced in the Polish education system, including the Office for Persons with Disabilities (OPD) at the University of Warsaw (UW), which is responsible for the provision of equal access to the academic environment for all students (https://bon.uw.edu.pl/?lang=en).

1. Law on students with disabilities and Universal Design in Poland

The documents that regulate support services for students with disabilities in Poland on the national level are the Convention on the Rights of People with Disabilities (United Nations, 13 December 2006), the Charter of the Rights of Disabled Persons (1 August 1997), and the Regulation of the Minister of National Education on the conditions for organising education, upbringing and care for disabled, socially maladjusted children and adolescents and those at risk of social maladjustment (Ministry of National Education, 24 July 2015).

The Convention on the Rights of People with Disabilities explicitly highlights the role of using a Universal Design (UD) approach to plan the educational experiences for students with disabilities. The principle of this approach is to create an environment that can be accessed, understood and used by all people to the greatest extent possible, considering diverse needs and abilities. In a similar vein, the Law on Higher Education and Science (2018) acknowledges the rights of students with disabilities who enter higher education institutions to have full access to the education process and research on equal rights with other students.

In contrast, at the local level, the enacted legal regulations address the rights of students with disabilities more specifically. They concern procedures of diagnosis of special needs and implementation of specific strategies aimed to allow access for students with Special Educational Needs (SEN) into an environment. Therefore, the employed approach is top-down, mainly based on the experience of professionals that work at the given institution. Local regulations express the intention of creating an inclusive learning environment for vulnerable students, mainly by providing them an opportunity to attend mainstream schools (as opposed to special schools).

The concept of “inclusive education”, rather than UD, is a prevailing approach in the Polish education system with the aim to create equal educational opportunities. ‘Inclusive education’ is promoted by the Centre for Educational Development (Ośrodek Rozwoju Edukacji) or CED, which is a public nationwide teacher training institution run by the Ministry of Education and Science. The CED is a member of the European Agency for Special Needs and Inclusive Education.

The CED refers to inclusive education as a high-quality education for everyone – for people with different kind of needs which arise from diversity. The 2020 CED report on inclusive education in Poland emphasises the role of using universal aims to ensure equal educational opportunities for as many students possible. It also stresses the role of diversity as a common good and the need to take into account the whole range of needs and abilities of each and every student.

Inclusion has been defined as a process that aims to reduce special and dedicated solutions to create various conditions to find high-quality and universal solutions bespoke to the needs of all who take part in the educational process, including those with disabilities (UNESCO, 2020). This is a very promising perspective that points to goals consistent with the UD perspective; however, UD is not explicitly mentioned.

Hedvall, Price, Keller, and Ericsson (2022) coined the term ‘nonclusive design’ as a sign of a shift towards the third generation UD (The first generation UD concerns a barrier-free design, whereas the second one inclusive design). The characteristics of the third generation UD are:

- From included to undefined users
- From person to function
- From adaptism to variation
- From separation to convergence
- From reactive to proactive
- From unaware to aware
- From explicit to tacit

For more information, see pp. 87-91.

2. The implementation of the Universal Design for Learning (UDL) at the University of Warsaw: The role of the Office of Persons with Disabilities (OPD)

Studying at the UW is organised around the concepts of “equal access”, “education for all” and “providing equal learning opportunities”. These terms are mainly applied to student candidates and students with disabilities.

However, the ordinance No. 204 of the Rector of the University of Warsaw (2020) on ensuring accessibility for people with special needs at the University of Warsaw applies a broader definition of its final beneficiary as someone “who, because of his or her external or internal features, or the circumstances he or she is in, must take additional actions or use additional means, to participate in different spheres of life on equal basis with others” (paragraph 3 position 2, p. 2). The provisions of the ordinance are in line with the Universal Design for Learning (UDL), which, in relation to UD, is an approach to teaching and learning that offers flexibility in the ways students access material and show what they know (Hall, Meyer & Rose, 2012).

Therefore, the mission of the OPD is to ensure the implementation of rights and obligations on an equal basis for students and employees of the UW. Although the focus is on student candidates and students with disabilities, a disability is understood locally according to the social model of disability. In this framework, a disability is understood not as a stable condition of a person, but rather as a dynamically changing interaction that evolves in how a person feels and functions

because of his or her continuously changing condition. The disability results not from an impairment, but from the relation between individual needs and the environment designed for an “average user”. Before taking action, the current individual situation of a student is considered. The assessment criteria are the health situation, learning difficulties, learning strategies, and the context of the tasks or assignments the student needs to perform. Reliance on such criteria allows for avoiding categorisation. In other words, the diagnosis or formally acknowledged disability is not understood as a ready answer to the question of what can and should be done for a student to provide full participation in the learning process.

Accommodations provided should not be based on a particular category of disability. They should be individually tailored in a creative way on the basis of dynamically changing functional aspects of a student’s situation and its context. It is worth mentioning that formal disability certificates issued by municipal institutions or the Social Insurance Institution, are not required to apply for accommodations such as an individual study curriculum, an ICT loan, or other forms of support. However, students cannot self-declare their needs. The student should provide current medical records, and those who experience mental health difficulties for the first time may arrange an appointment with a psychiatrist-consultant or with a member of the Psychological Counselling Centre (PCC) at the UW.

As emphasised by the OPD, the provision of equal access to learning at the UW entails rights, responsibilities, and expectancies. Students with SEN should be able to experience both success and failure. They should also have an opportunity to make further decisions about their learning based on clear and constructive feedback. To foster the sense of self-determination and autonomy, students who request accommodations are required to take active steps aimed at improving their abilities and acquiring prerequisite skills necessary to make the further academic support effective.

Nevertheless, the OPD is legally obliged by internal and external regulations to offer support to students with particular mental or physical difficulties by recommending accommodations that would address specifically the disability or the long-term health condition.

3. The OPD team and their services

The team of OPD represents very diverse needs. This enriches a perspective on support processes and verifies final support products, including the users' perspectives. Therefore, accommodations are discussed from the UDL perspective with a question in mind – What can be redefined for the benefit of all students in a group?

The OPD offers a wide variety of specific services to widen the access of all students to the learning and assessment process at the UW. These are:

- Academic Digital Library for students with significant barriers (visual or motor) in access to standard printing materials; there are limitations resulting from the current copyright law for offering this option to all that may benefit from using digital materials (e.g., students with dyslexia);
- the provision of adapted examination sheets (e.g., in Braille, in an electronic format adapted for a student with dyslexia or ADHD or those who use screen readers);
- portable assistive technologies rental, instruction on how to use assistive technologies including a software that facilitates learning process;
- the 3-D printing lab for printing learning materials, especially for printing models of objects not easy to explore in a tactile way, too small, too large or in distance, easily damaged by touching or belonging to heritage that should not be touched to stay preserved;
- a personal assistant during classes (e.g., during work in labs);
- university audits for digital accessibility of university websites; members of the IT specialists team combine the role of an expert and a final user with visual disability
- university audits for architectural accessibility of existing buildings as well as co-creating the new projects;
- Polish Sign Language (PSL) interpreters on order during classes and consultations for PSL users;
- Facility Management (FM) systems that support hearing in the largest lecture halls;

- Note-taking services, mobility assistance;
- Spatial orientation services;
- university bus transportation services for students with motor disabilities
- dormitory rooms adapted for wheelchair users; room setting procedures that allow students with different health problems to apply for a particular kind of room according to students' personal needs (e.g., a one-person room or a room in a dormitory placed in the location preferred most);
- support network of tutors (students at higher study years as buddies) and mentors (academic professors) for students on the autism spectrum who help them to get some know-how about their studies and working in a group;
- individually adjusted exam duration, settings and agenda if necessary;
- Accessible sports centres with a pool facility for students with motor disabilities.

The OPD offers training for academic teachers to promote the UDL approach. The aim is to challenge the mindset of focusing on the special accommodation approach and adopt a more universal, flexible and choice-oriented approach to ensure full course participation. The aim is also to promote simple and easy practices with a focus on the quality of information quality (e.g., transparent information, well-prepared syllabuses, clear profiles of expected competencies gained by the graduate of a given field of study), the design of study materials, and sharing the materials with students.

4. UDL in other units of the University of Warsaw

The OPD cooperates with many university units and provides ongoing consultancy for university teams. This cooperation and consultancy consider the use of standard support for students with disabilities and support that is specific to a given field of study and not to the student's disability status, considering potential needs that may arise during the learning process. All who provide support to students within this cooperation and consultancy have an awareness of diversity of needs, including the needs that arise from different kinds of disability. The support and services are of high quality in line with specific specialisations.

The initiative centred on creating a more inclusive academic environment at the UW is “We are all equal” (Polish: “Równoważni") project (http://rownowazni.uw.edu.pl/rownowazni/). It was implemented by the Ombudsman Office to promote equality initiatives for vulnerable students. The Ombudsman’s team is also engaged in creating standards of inclusive language at the UW that embraces all the students, including LGBT+ community members, for example.

The offer of the Psychological Counselling Centre (PCC) unintentionally implements principles of the new conceptualisation of UD understood as “nonclusive design”. Caring about the psychological well-being of all students can be perceived as a strategy to facilitate participation in the academic life and learning process. The only requirement to arrange an appointment in the PCC is a self-detected need. This may include a need that arises from the current mental health crisis, an adaptation phase to another long-term condition, experiencing minority stress, or feeling a need to discuss study-related concerns.

The programme “Young Didactics” (https://zip.uw.edu.pl/program-mlodzi-dydaktycy) is another example of good practices at the UW. Following UDL principles, the programme provides training to early-career academic teachers on how to use diverse and high-quality teaching methods. The syllabus of the training includes specific strategies of inclusion of students with SEN and strategies that can be employed to meet diverse students’ needs (e.g., creating well-prepared and transparent syllabi, using new technologies to provide wider access to knowledge).

5. Conclusions and future perspectives

The next steps to develop a model of inclusion at the UW may include a more widely-understood concept of UDL and Universal Design for Research principles to ensure that the diversity of the community, including the academic one, is adequately addressed by the researchers.

Also, diversity among university teachers is as important as students’ diversity. What is important to consider is the perspective of their roles as teachers, researchers, and life-long learners. One of the issues that may be explored is how

common barriers of bureaucratic complexity influences community and how it may be universally redesigned.

Another important goal is to promote creating spaces at the UW that allow better self-regulation, for example, for members of the community that get more easily overwhelmed by stimulation or need to take a rest more often and distance themselves from social contacts more frequently. Promoting shared spaces that facilitate sharing knowledge and experience and strengthening the sense of belonging are also crucial as they are in line with UDL.

Keeping in mind the aging population, it is necessary to include the perspective of older students, not only as those who may experience health difficulties but also some difficulties according to their sense of belonging to the community. It needs to be remembered that the process of studying is not fully accessible if it is not personally meaningful enough for each individual. Further interdisciplinary cooperation with different actors of the learning process, especially with all different kinds of learners, must be continued to achieve this goal.

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8. Governance to enhance inclusive education - An analytical perspective based upon previous research in Europe

Hege Knudsmoen – Oslo Metropolitan University

Introduction

The concept of governance to enhance inclusive education is unclear in the research literature in Europe. However, there are governing functions on inclusive education in the school regulations in the curriculum for most European countries after the Salamanca declaration. Postcolonial and neoliberal critiques of the concept of inclusive education as such normative regulations influence the research knowledge production of the (in)exclusion of some children under mainstream education as political governance or governmentality.

The main concern of this chapter is how professionals can create governmentality to enhance inclusive education. The arguments raised in this chapter are 'How can inclusive education be possible or a main concern in schools' governance for all children?'.

1. International governance to enhance inclusive education

According to the Salamanca Statement from UNESCO signed in 1994, inclusive education has become a moral imperative that demands political attention and action in practice as education jurisdictions and regulations across the world (European Agency, 2012; UNESCO, 1994, 2017; UN, 2016). Inclusive education and special education are used interchangeably or alongside each other, in these governmental documents globally.

In the research literature, inclusive education stems from the protest of the dominance of segregated special education as a means for disability, such as calibrating, codifying and treating disabled students (Slee, 2011, p. 179; Tomlinson,

2017). Moreover, the governance to enhance inclusive education primarily concerns exclusion as a societal process.

In a Norwegian analysis on governmentality, Knudsmoen and Simonsen (2016) emphasised from an ethical perspective on disability and deviancy that the main concern is how to govern a ‘learner’ to enhance inclusive education. The Salamanca Statement points out that inclusion is seen as a process of addressing participation and belonging, responding to the diversity of needs of all children by increasing participation in learning, culture and communities through schooling and reducing or eliminating exclusion (UNESCO, 1994; 2017).

1.1 UNESCO guide for ensuring inclusion and equity in education

UNESCO (2017) designed a guide to ensure inclusion and equality in education systems with a focus upon students’ participation to enhance inclusion and equity in education.

Faldet et al. (2022) describes the first point in the UNESCO guide concerning the basic concepts of inclusion and equality that should permeate all levels of the educational governance system. This is an understanding that must be known and shared by all agencies in national educational systems. Inclusive education is seen as a human right that pertains to all children, not just children with disabilities or special needs (Davis et al., 2020; Opertti et al., 2014; UN, 2016). Governance as the responsibility of the education system, at all levels, will facilitate one education that is equal and inclusive for all learners. UNESCO’s international political statements overlook the concept of special schools and adjusted achievement for students with special needs.

The second dimension of the UNESCO guidelines for inclusive school systems addresses policy formulations on inclusive education. The national curriculum must, together with other governing documents clarify the principles of inclusion and equality. According to Goodlad (1979), implementation of the national, regional, and local curriculum involves different types of decisions: political-social, substantive, and professional-technical. The political-social angle can include an analysis of what, how and why inclusion can have value, as well as how such principles are embodied in the national curriculum (Olsen, 2010; Faldet et al., 2022).

The governance of inclusive education has been constrained by adherence to ordinary and special education imperatives. The fragmentation of educational policymaking or governmentality presses actors towards exclusion by assessment, and the protection of professional interests reinforces individual pathologies and creates further exclusionary pressures in the discourse of inclusive education in Europe (Slee & Allan, 2001, p. 173). It brings us to govern inclusive learning communities; it implies that all learners are socially beings and emphasises values such as participation and democracy as UNESCOs third point as practicum.

As a third point, UNESCO's (2017) guide outlines that schools' practice should support all students' participation and learning. A professional community is required to develop an inclusive school (European Agency, 2012; Kunnskapsdepartementet, 2017). Teachers meet the principle of inclusion, both in teacher education and in their continued professional practice. UNESCO (2017) emphasises that it is a task for leadership at all levels, to challenge any exclusionary or discriminatory practices to enhance inclusive educational practices. Foucault's ethical genealogy can help us to understand how 'to govern a learner', or governmentality, to understand children's possible subject positioning between ordinary and special education. Moreover, as an ethical concern to obtain values as inclusive education in practice (Knudsmoen & Simonsen, 2016; Mausethagen et al., 2022).

The fourth and final dimension by UNESCOs guideline (2017) concerns the systems and support structures that must be in place in inclusive educational school systems, especially for pupils at risk of exclusion, marginalisation, and underperformance (cf. Opertti et al., 2014; Slee, 2019; Tomlinson, 2017). The sustainability goals also point to a special responsibility for marginalised pupils. There is also reference to refugees, ethnic and religious minorities, as well as to disabled and indigenous peoples. Cooperation and resources are keywords here (Faldet et al., 2022).

1.2 To govern children's participation

In an inclusive educational system, there must also be systems to monitor participation, children's belonging and dividends for all pupils, according to UNESCO

(2017; Faldet et al., 2022). Behind these international political intentions, that children are learners should be educated to reach their 'potential' lies the myth of fixed ability, defects, or disability.

A major task in the sociology of education has been to demonstrate the ways in which inequalities in education and life chances – particularly by social class, race, gender, and disability – have been created and recreated by policies and policymakers (Tomlinson, 2017). Slee (2009) pointed to the inclusion paradox as the cultural politics of difference as a governance. The widespread acceptance of inclusive education as a research and policy imperative might well prove to be its greatest obstacle (Slee 2009, p. 181).

Foucault and Gros (2011) argued for a philosophical ethos or framework based on both critical and ethical judgements of what we say, think and do in our present practice as professionals. Courageous conversations can also open a discourse on criticism about practical ideas, which will require the form of a possible transgression of practice to improve it or discussion to enhance inclusive education with more critique: How are we governing learners? Gibbs (2018, p. 142) asked 'What imperative ways can we use to inspire the collective competence of all teachers to develop an inclusive community?'

2. Inclusive education – A brief research review

Existing research has highlighted inclusion and inclusive education as concepts that are complex, contradictory, and confusing (Kiuppis, 2011; Slee, 2011, 2013; Tomlinson, 2014). In particular, the nature and aspirations of inclusive education are ubiquitous and arguably not made clearer through educational governance by policy documents. Research based knowledges has recognised that the concept of inclusion has an ideological origin and that it does not in itself ensure that exclusion does not take place from the beginning of the political concept (e.g., Allan, 2015; Brantlinger, 1997; Slee, 2019; Ware, 2004). This is related to the challenging work of teachers and school leaders who must enhance inclusive education through their practical work in schools and classrooms (Lindner & Schwab, 2020).

2.1 Governance to enhance inclusive education in Norway

Additionally, although the actors agree on the importance of inclusive education, there are disagreements about the governing tools in use (Mausethagen et al., 2022). In Norway, Mausethagen et al. (2022) emphasised that although inclusive education is a highly ambitious and valuable concept, it is also a contested concept.

Most international research today emphasises inclusion as being a multi-dimensional or multi-faceted concept focused upon the community definition (Haug, 2019; Michell & Sutherland, 2020; Slee, 2009). Several studies have also documented that a one-dimensional approach to inclusion – that is, being concerned with the placement of students and organisational differentiation – has been weakened in many contexts internationally (e.g., Haug, 2019; Norwich, 2008). According to Slee (2019, p. 910), belonging is a conceptual and practical precondition of inclusive communities, as social and psychosocial dimension of participation in the society.

2.2 Governance to enhance inclusive education

The research literature on leadership to enhance inclusive education is largely concerned with school effectiveness and school improvement (Ainscow, 2020; DeMatthew, 2020; Leithwood et al., 2020; Messiou et al., 2016; Mitchell & Sutherland, 2020). Many studies within this paradigm indicate that teachers need systematic support from their leaders to develop inclusive education (Ainscow, 2020; Ainscow & Sandill, 2010; Woodcock & Woolfson, 2019). Like research on governance for school development more generally, leadership is also highlighted as crucial for developing inclusive education and enhancing inclusive values in schools (Leithwood et al., 2020; Mitchell & Sutherland, 2020; Molbaek, 2018; Riehl, 2000; Ruairc et al., 2013).

The research literature emphasis the leadership organised themselves into teams that focus on discussing inclusion values and principles can have a positive effect on the development of teachers' teaching practice (Galloway & Ishimaru, 2020; Molbaek, 2018; Solberg et al., 2020; Mausethagen et al., 2022). DeMatthews (2020) also refers to the importance of management teams working proactively to

identify, discuss and solve school-wide challenges on inclusive values. Mitchell and Sutherland (2020) emphasise the importance of leaders implementing evidence-based teaching strategies to strengthen inclusion in the classroom. Ainscow (2020) pointed out that national, regional, and local educational authorities as governance have an imperative to enhance inclusive education.

Lindner and Schwab (2020) recent review on inclusive education, indicated the following aspects as characteristic of teachers' inclusive classroom practices: collaboration and co-teaching, grouping and modification (of assessments, content, extent, instruction, learning environments, materials, processes, products, and time frames), individual motivation and feedback and personnel support for students (Lindner & Schwab, 2020). Moreover, the research emphasised the importance of teacher competence and access to support teams of professionals and leaders committed to enhance inclusion (Michell & Sutherland, 2020).

Hayward (2014) pointed to the importance of collaboration and innovation and stated that work across different system levels is just as important for governance inclusive education as work in schools and classrooms. Local and regional support has also been highlighted as crucial for developing inclusive education in schools (Lindner & Schwab, 2020). Still, the role of these mid-central levels of educational governance in such processes has been scarcely studied, which, arguably, is highly important for how a phenomenon is framed and, thus, gives direction to educational practice (Mausethagen et al., 2022; Knudsmoen et.al, 2022).

Gibbs (2018) also brought attention to teacher efficacy beliefs; we need to consider and evaluate what may be plausible circumstances in which teachers' self-beliefs and increasingly inclusive practices can prosper (Gibbs 2018, p. 140). The educational governance to enhance inclusive education also means working with teachers' collective efficacy and professional community through school development work.

3. Conclusion

Foucault's ethical perspective on governmentality provides a critical 'ontology of ourselves' as professionals to enhance inclusive education. A critical ontology means that professionals reflect upon their ethos and attitudes towards the children's

educational outcome in the inclusive and special educational system in Europe. Discursive practices in inclusive educational settings are about the capability to participate, a way of understanding differences and achieving learning in schools or throughout children's belonging in schooling. Inclusive education is an ethical concern of children's presence, participation, and outcomes in education.

Internationally, there are also several more critically oriented studies of governance strategies on inclusion (e.g., Allan, 2008; Brantlinger, 1997; Roden & Allan, 2019; Slee, 2009; 2013; 2019), which show that increased attention to accountability and student outcome can lead to more exclusive, rather than inclusive practices. Examples of this are studies showing that testing students, in combination with accountability mechanisms, leads to more performance pressure with subsequent negative consequences for many pupils, an increased degree of pupil categorisation and the use of level-differentiated groups (Faldet et al., 2022; Hayward, 2014; Slee, 2009; 2019).

Inclusive education can also be about exclusion, if professionals do not shift the discourses about abnormality, deviances, and disabilities towards a focus upon the resilience of a learner. We need to redirect the concern to governing learners as professionals focus on students' conduct of conduct, ability to participate and experiences of well-being in education or under mainstream schooling to enhance inclusive education.

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Part 2 Practical Examples

9. Best practices in training teachers in universal design of digital learning materials at OsloMet

Weiqin Chen – Oslo Metropolitan University

Norun Christine Sanderson – Oslo Metropolitan University

Introduction

Implementing the requirements for universal design of digital learning materials in higher education requires that the people that make these digital learning materials know how to do this in practice. In the context of this chapter, we assume these people are teachers themselves. Research has found that teachers without any experience with people with disabilities may not be fully aware of the need for making all digital learning materials universally designed, even though they may be willing to accommodate students that approach them about special needs (Chen et al., 2018). Research has further found that although teachers may have some knowledge about universal design requirements, they often do not know how to make their digital learning materials universally designed in practice (Sanderson et al., 2022). Consequently, in addition to giving instructions/training on how to ensure their learning materials are universally designed, it is important to give teachers the opportunity to gain awareness and understanding of the necessity of making all their digital learning materials universally designed at the outset. In addition to increasing their awareness, greater understanding of how people experience barriers when interacting with information and communication technology (ICT) may also increase their motivation to make the necessary adjustments of digital learning materials.

In this chapter, we will describe our practice/experience as regards how we have trained teachers in universal design of digital learning materials, and we will also share some recommendations we have gathered through this practice.

1. Description of best practice

In this section, we share our experience with courses for teachers at OsloMet on universal design and how they can make universally designed digital learning materials. The focus will be on the recommended content of such courses, based on our experience and practice.

1.1 Simulations for increased awareness and understanding

Exercises using simple simulations and demonstrations that allow some understanding of the experience of trying to access inaccessible content or difficulties with operating (navigating, giving input) some information and communication technologies (ICTs) when you have an impairment might be effective in increasing understanding and awareness. In addition, giving examples of common situations where non-disabled people can experience similar ICT barriers as people with disabilities can help teachers realise that although universal design may be necessary for some, it is beneficial for all users, independent of disabilities.

In our practice, the course participants (teachers) were given some exercises to experience ICT barriers that people may encounter trying to access digital content. This was achieved using some every-day objects that can be used for simple simulation, such as rubber gloves (washing-up gloves) for reduced sensitivity in fingers (Figure 1), balance boards for instability (difficulty hitting small targets), or simulation glasses (Figure 3) or blindfolds (Figure 3) for reduced vision. In addition, free simulation software and various filters or web-tools available in websites or as browser extensions can be used in simple simulation exercises.

Figure 1: Course participants doing awareness exercises with simple simulation (rubber gloves).

The exercises should ideally resemble typical teacher tasks, e.g., creating a presentation or written document for students, or viewing a video they might show in class. It is important to stress that participants must use the simulation tools or equipment when doing these tasks. Although their experiences using this simple simulation cannot fully give the exact same experience as that of a person with a disability, this exercise can invite reflection and empathy in the learner.

Figure 2: Course participants doing exercises with simple simulation (simulation glasses).

Reflecting on what they have experienced or learned can be important for fostering increased awareness and understanding. Relating their experience of ICT

barriers to their students, considering diversity such as variations in abilities, different ICT equipment used, and different contexts students may be in when accessing learning materials can also increase awareness and understanding.

Figure 3: Course participants doing awareness exercises with simple simulation (blindfolds).

1.2 Knowledge that enhances the understanding of what and why

In addition to increasing awareness through simulations, exercises, and demonstrations, making sure that teachers know which digital learning materials need to be universally designed and why it is necessary to make specific adjustments can be important for motivating people to make the needed adaptations. In our practice, we have included user diversity, an overview of typical digital devices users may use, common assistive technologies / aids and knowledge of how these work with digital documents, relevant legislation, and standards, as well as explaining the different levels of access various users may have. The latter can to some extent reflect the necessary accommodations for students with various needs, but it also shows important limitations when it comes to what can be accomplished using universal design of digital learning materials alone, and when additional adaptations may be necessary.

When looking at which digital learning materials must be universally designed, we invited course participants (teachers) to make suggestions and discuss ahead of presenting which types of digital learning materials should be universally designed. Considering user diversity, we always include, in addition to impairments, other aspects that can be disabling, such as situation and context, language, ICT competence/skills, and cultural diversity. When it comes to assistive technology and diverse devices, we give an overview and usually explain which types of assistive technologies / aids are typically used in which cases, and some details about the implications various assistive technologies can have on how the user can perceive the content, for example, the fact that someone using a refreshable braille reader and a screen reader typically will access the content in a sequential way.

To foster the understanding of why we need to structure and format e-documents in a certain way to ensure universal design of digital learning materials, it is important to explain how the assistive technology works with digital content, such as e-documents, and what information the assistive technology needs to be able to accurately display the document content to the user. Knowing the different levels of access and that universal design sometimes is not enough to ensure access to the contents of the digital learning materials, may also be useful for the learner and help understand the scope of universal design of digital learning materials.

To demonstrate what the user perceives of the content through that assistive technology, this part of the course content could also include demonstrations or exercises using available assistive technologies, such as for example a screen reader. Relevant standards and guidelines for digital documents, web, and online forms, as well as legislation pertaining to the country/countries of the course participants (teachers) could also be included, if not covered elsewhere in the related course plan.

1.3 Practical exercises to gain hands-on experience

In our practice, we have focused the course content and exercises on digital learning materials typically used and created using the software and digital tools available to teachers at OsloMet. Other institutions may use different software and digital tools.

The course should ideally cover the software and tools that participating teachers use in their daily work when preparing digital learning materials.

In our experience, course participants (teachers) need two types of exercises. First, they need exercises to realise the issues and consequences of digital learning materials not being universally designed. This can be achieved through simulation exercises and exercises with demonstrations followed by discussions/reflections. Second, they need small exercises during the course to gain experience with each kind of digital learning material that the course offers, perhaps using the checklist and getting guidance/help from an instructor. Examples of such exercises could be making some parts of a digital document universally designed or check a digital document that they have used as digital learning material to see if it is universally designed.

All exercises, particularly the simulation exercises and practical exercises for gaining hands-on experience making their digital learning materials universally designed, concluded with some opportunity for course participants (teachers) to discuss and reflect on their experiences, what they learned, or perhaps sharing what they found difficult when trying it out on their own. This can for example be achieved through having exercises allowing course participants (teachers) to share and discuss their experiences orally or in writing, for example in the classroom or in a discussion forum.

1.4 Checklist to take home

In addition to the exercises, we have also provided a checklist to take home after the course. This has, in our experience, been valued by the course participants (teachers). This checklist should contain the most important adjustments for the most common types of digital learning materials needed to ensure they are universally designed. Preferably including the types of digital learning materials covered in the course.

Offering course participants (teachers) follow-ups, such as a “help line”, for a limited time after the course ends may also be appreciated but can be resource demanding. If such follow-ups are provided, it becomes important to avoid it

becoming an alternative or hindrance to using the checklist and the skills attained through the course.

2. Recommendations and conclusion

The increased use of digital technology in education institutions and the introduction of new legislation have heightened the need for universal design of digital learning materials. In this chapter we have described our practice in training teachers in universal design of learning materials in OsloMet.

Our experience shows that simulations for increasing awareness, practical exercises for gaining know-how knowledge, and checklists for retaining knowledge and skills are particularly valued by participants (teachers). The diverse types of activities in the training process can also make the course more interactive and interesting, thus enhancing the motivation and potential learning outcome. If resources allow, we would also recommend offering course participants (teachers) follow-ups in order to provide further help for retaining their knowledge and skills.

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10. Learning difficulties and reasonable accommodations in higher education

Veerle Garrels – Oslo Metropolitan University

Introduction

According to the Norwegian Act relating to universities and university colleges (Ministry of Education and Research, 2005), students with disabilities have the right to suitable individual accommodations, as long as these accommodations are reasonable in terms of cost and resources. Despite similar legislation in many other countries, a literature review by Toutain (2019) identified several barriers to the implementation of such accommodations. One barrier that recurs across research studies, is faculty or professors' unwillingness or refusal to implement accommodations that students with disabilities have been found eligible for. While this does not seem to be the dominant experience of the majority of students with disabilities, Toutain (2019) points out that it is a barrier that appears consistently. Indeed, these occasional negative attitudes towards making accommodations have been reported regularly in studies over the past decades (e.g., Houck et al., 1992; Marshak et al., 2010; Lyman et al., 2016). Even though most students with disabilities report mostly positive experiences with professors, almost all of them had had at least one negative experience that left a lasting impression on them (Lyman et al., 2016). Thus, this barrier seems persistent over time.

Another barrier identified by Toutain (2019) is the implementation of accommodations that are not experienced as functional or helpful by students with disabilities. For instance, accommodations may be less effective if they involve segregation from the rest of the group, if the help that is provided is causing discomfort or distractions, or if presentation of the learning content in another format is difficult to comprehend. Thus, it may seem that, even with good intentions, teachers in higher education do not always manage to accommodate their courses to the different needs of students with disabilities. This may be due to limited knowledge about common types of disabilities and about how to accommodate for

the challenges that follow them. Therefore, this chapter aims to share knowledge about some of the most common disabilities that students may present within higher education. Furthermore, this chapter provides information about how teachers may adapt learning content and learning activities as much as possible in order to match students' strengths and difficulties.

1. Common disabilities amongst students in higher education

With more and more students applying for higher education, the student population naturally becomes more diverse. This also means that more students with disabilities pursue higher education. Yet, many teachers in higher education may not have an informed understanding of what disability is. In addition, they may have limited knowledge of some of the disabilities that their students may present with.

According to the relational model of disability (also known as the GAP model), disability occurs when there is a mismatch between the individual's capabilities and the environmental demands. Certain conditions or diseases may cause physical, sensory, or cognitive impairment. These impairments may be associated with functional problems and challenges. Yet, it is only when the environment expects a higher than possible level of functioning without providing the necessary accommodations, that the individual will experience disability. Thus, disability is understood as something relational and situational; it is the result of a gap between the individual's abilities and environmental demands. This gap may be reduced by providing individualised support and/or by the individual's training of particular skills. This way, the experience of disability may be minimised.

In higher education, some of the most common conditions and disorders that may lead to disability include attention deficit hyperactivity disorder (ADHD), autism spectrum disorder (ASD), specific learning disorders, and mental health disorders.

1.1 Attention Deficit Hyperactivity Disorder (ADHD)

ADHD is a common neurodevelopmental disorder that affects approximately 5% of the population (Sayal et al., 2018). The condition is characterised by a persistent

pattern (at least 6 months) of inattention and/or hyperactivity-impulsivity that has a direct negative impact on academic, occupational, or social functioning (World Health Organization, 2022). Inattentiveness refers to difficulties with sustaining attention to tasks that are not immediately stimulating or rewarding. It may also lead to difficulties with paying attention to detail, with organizing and managing work and time, with staying focused when distractions arise, with completing tasks, with making decisions, and with keeping things in order (World Health Organization, 2022; Kooij et al., 2018). Hyperactivity and impulsivity may lead to difficulties with behavioral self-control and to excessive motor activity (World Health Organization, 2022). People with ADHD often have difficulties with sitting still, and they may feel a need for constant fidgeting. They may also encounter challenges with engaging quietly in activities.

Students with ADHD are often seen to blurt out answers in the classroom, interrupt others, and not wait for their turn in conversations, games, or other activities. They also have the tendency to react immediately to impulses, without considering risk or consequences. Some people with ADHD may be predominantly inattentive, others may be mostly hyperactive-impulsive, and still others may show the combined features of inattentiveness and hyperactivity-impulsivity (World Health Organization, 2022). Symptoms of ADHD are usually present starting from early to mid-childhood, and there is a discrepancy between the inattentive/hyperactive-impulsive behavior and what may be expected based on the person's age and intellectual functioning (World Health Organization, 2022).

ADHD has a high degree of heritability, and the prevalence of ADHD is three to four times higher in boys than girls (Faraone & Larsson, 2019; Sayal et al., 2018). People with ADHD are at a higher risk of dropping out of school (Fried et al., 2016), and they show lower levels of employment (Rietveld & Patel, 2019). Moreover, they are more likely to get involved in criminal activity (Baggio et al., 2018), to abuse drugs (Van de Glind et al., 2020), and to develop mental illness (Anker et al., 2018). Within a relational understanding of disability, these adverse consequences of an ADHD diagnosis should be seen in relation to an environment that poses demands that exceed the capabilities of the person with ADHD, without providing individualised supports. For instance, a student with ADHD may struggle with schoolwork because

of the typical ADHD symptoms and an environment that is not adapted to these challenges. Experiences of failure and not mastering everyday demands may in turn lead to poorer mental health, drop-out, or even worse outcomes (Kent et al., 2011). Thus, it is not ADHD in itself that leads to these negative consequences, but instead, the problem lies in the disability gap that occurs between the functional level of the person with ADHD and the environmental expectations.

1.2 Autism spectrum disorder (ASD)

Autism spectrum disorder (ASD) is another neurodevelopmental disorder that is becoming more and more common. The global prevalence of ASD is estimated to 1%, and the condition is more common in boys than in girls (Zeidan et al., 2022). According to the World Health Organization (2022), ASD is characterized by "persistent deficits in the ability to initiate and to sustain reciprocal social interaction and social communication, and by a range of restricted, repetitive, and inflexible patterns of behaviour, interests or activities". Thus, the condition is first and foremost a social disorder that is accompanied by stereotypical behaviour and interests.

The autistic traits typically manifest themselves through difficulties with initiating and sustaining conversation with others, understanding facial expressions and body language, understanding social cues, responding appropriately in social situations, and identifying and understanding emotions in oneself and others (Lord et al., 2018). People with ASD may also experience distress in new or unexpected situations, and they seem to favour routines and rules. Furthermore, they may show repetitive and stereotypical movements, such as rocking with their upper body, flapping hands, or other unusual hand of finger movements (Lord et al., 2018). For people with ASD, it is common to have persistent preoccupations with one or more special interests, such as dinosaurs, the universe, chemical elements, etc. Most people with ASD also experience hypersensitivity or hyposensitivity to sensory stimuli, such as sound, light, texture, or odor (World Health Organization, 2022). For instance, certain sounds may be experienced as particularly painful, such as toilet flushing, nasal voices, or vacuum cleaning. Situations with people crowds may also lead to sensory overstimulation, and people with ASD may be particularly sensitive to situations in which physical contact or eye contact occur.

People with ASD report that they often feel lonely (Ee et al., 2019), and they are at a higher risk of developing mental illness, such as anxiety, depression, and bipolar disorders (Lai et al., 2019). People with ASD participate to a lesser extent in the labour market (Cederlund et al., 2007), and they have lower graduation rates compared to non-disabled students (Gelbar et al., 2014). Within a relational model of disability, these challenges with everyday functioning and with “fitting in” may be understood as a mismatch between the capabilities of people with ASD and the demands and expectations that they face in society.

1.3 Specific learning disorders (SLDs)

Specific learning disorders (SLDs) form another common challenge for students in higher education. SLDs are a heterogeneous set of academic skill disorders, such as difficulties with reading, writing or mathematics, that impact academic achievement and that are not caused by intellectual impairment. Typical symptoms are, amongst others, inaccurate or slow and effortful reading, poor written expression, difficulties remembering number facts, and inaccurate mathematical reasoning (American Psychiatric Association, 2013). Conditions that fall under the category of SLD include dyslexia (i.e., a specific reading disorder), dysgraphia (i.e., a specific learning disorder in written expression), and dyscalculia (i.e., a specific learning disorder in mathematical reasoning), and these conditions often co-occur with other neurodevelopmental disorders (World Health Organization, 2022). According to the American Psychiatric Association (2013), difficulties must persist for at least six months, despite targeted interventions, and they cannot be explained by inadequate schooling or developmental delays. The prevalence of these disorders is uncertain.

Students with dyslexia in higher education are more likely to withdraw during their first year of study, and they are less likely to complete their study programme. However, with appropriate support, their completion rate is similar to that of students without such disorder (Richardson & Wydell, 2003). This clearly illustrates the relational aspect of the disorder: With individualised support, students with dyslexia can manage to be successful in higher education, but without such support, their potential may remain untapped.

Higher education students with dysgraphia comprise a heterogeneous group. They may have poor legibility, write slowly, and experience fatigue when writing. These challenges may limit their ability to demonstrate their knowledge and competence, and research suggests that students with dysgraphia may continue to require individualised supports and accommodations throughout their academic career (Tal-Saban & Weintraub, 2019).

People with dyscalculia experience difficulties understanding number concepts, they may lack an intuitive grasp of numbers, and they frequently encounter problems with learning number facts and procedures. This may result in challenges with managing daily routines, such as keeping track of household budgeting, checking change when doing grocery shopping, or telling the time. In higher education, students with dyscalculia may face challenges with understanding tables and graphical information. These challenges may lead to low self-esteem, frustration, or anxiety (Trott, 2010). Therefore, individualised support that may alleviate some of their challenges is paramount.

1.4 Mental health disorders

Mental health refers to the ability of an individual to cope with the normal stresses of life and to contribute to society. People with good mental health feel positive, joyful, and resilient. Mental health disorders, such as anxiety, depression, personality disorders, or suicidal ideation, may result in a diminished capacity to deal with ordinary challenges and in reduced everyday functioning (Stallman, 2010).

For some students, transitioning to higher education may be a particularly stressful experience that leaves them emotionally vulnerable (Usher, 2020). Research indicates that university students are five times more likely to develop mental health issues compared to others (Stallman, 2010). Furthermore, an international survey found that amongst first-year college students approximately one third screened positive for at least one common anxiety, mood, or substance disorder (Auerbach et al., 2018). These disorders seem to occur in all segments of the student population, and they indicate a high need for mental health services in higher education.

For students in higher education, poor mental health may affect their academic performance, as it may lead to lower educational achievement, higher risk of

dropout, problematic interpersonal relationships, and negative learning and teaching experiences (Reavley & Jorm, 2010). Hence, implementing effective interventions for the prevention and treatment of mental health issues is important in a higher education setting. In addition, teachers may make certain accommodations to their teaching and learning activities in order to help students with mental health disorders thrive in higher education and improve their academic performance.

2. Universal design for learning: Practical strategies

Given the relatively high prevalence of disorders such as ADHD, autism, specific learning disabilities, and mental health disorders, institutes of higher education are likely to enroll students that require extra support to be able to release their academic potential. Unfortunately, in Norwegian higher education as in many other countries, students themselves are responsible for self-identifying and documenting their needs. This means that they must disclose personal and often sensitive information about themselves to receive the support that they need to succeed in higher education. For the student in question, this may be stigmatising, and for teachers in higher education, this practice may reinforce the idea of “the normal student” (Liasidou, 2014). Here, the implementation of universal design for learning (UDL) could provide a more seamless inclusion of students with special needs in higher education.

UDL is a framework of instruction that uses proactive design and inclusive educational strategies in order to meet the different learning styles and preferences of a diverse student audience (Black et al., 2015). With UDL, teachers can make their teaching more accessible and engaging, so that a broader range of students can participate in the teaching and learning activities that are offered. UDL is about creating a flexible and stimulating learning environment in which students are offered choices for how to learn and demonstrate their learning. Hence, students are provided with options that allow them to engage with the learning materials in ways that appeal to them and benefit them most. In other words, the focus is on improving the environment so that learning becomes optimal, rather than on changing the learner. The ultimate goals of UDL are to build expert learners who are purposeful and motivated, resourceful and knowledgeable, and strategic and goal-directed (CAST, 2018).

According to the UDL guidelines (CAST, 2018), teachers should provide multiple means of engagement to stimulate students' interests for a certain topic and to sustain their efforts for learning over time. This may be achieved in a variety of ways, for instance by applying some of the following strategies:

- Provide students with *choice and autonomy*. For example, when introducing a new topic, students may be given the choice to prepare for the lecture by listening to a podcast, by watching a documentary, or by reading an article on the topic.
- Create a *sense of relevance*: If students experience learning content as relevant, this may enhance their engagement with the learning materials. Connecting learning content to students' everyday lives may be an effective way of achieving this. For instance, a newspaper article may be used as a starting point for debate, before more scientific content is introduced.
- *Clarify learning goals*: Some students may need support to keep track of the overall learning goal, and they may benefit from being reminded of why the goal is important. It may also be helpful for students to get a visualisation of how short-term objectives contribute to reaching a long-term goal. Goals can be presented and restated in several ways throughout the course, and students may also be encouraged to formulate their own goals in order to gain more ownership over their learning process.
- *Create learner communities*: Social interactivity is an important motivational factor for students in higher education, and being able to collaborate with others is an important skill for later employment. Different ways of engaging students as members of an academic community include creating cooperative learning groups, adopting routines for peer support and mentoring, using flexible rather than fixed grouping during learning activities, and varying students' roles during group work.
- *Provide relevant, timely, and constructive feedback*: Feedback may be very motivational to students when it is delivered in an accessible and mastery-oriented format. Feedback may also be particularly efficient when it emphasizes effort and includes strategies for future success. Moreover, teachers may encourage their students to provide peer feedback and/or to monitor their own learning process through self-assessment.

The guidelines for UDL (CAST, 2018) also recommend teachers to provide multiple means of representation. Students may have different ways of perceiving and comprehending information, and there is not one single means of representation that will be optimal for all students. Therefore, it is important to give students opportunities to work with learning materials in different ways, as this may improve the quality of their learning. Some strategies for this include the following:

- *Offer alternatives for auditory information*, for example by using visual diagrams and charts, PowerPoint presentations, written transcripts for video clips, or sign language. Visual information may also be particularly useful for clarifying concepts and symbolic representation of information may help students to grasp complex content. Such strategies are of course important for students with hearing impairments, but they may also be beneficial to a wider range of students.
- *Offer alternatives for visual information*, for example by providing descriptions (text or spoken) for graphics, videos, and images. When providing students with text materials, it is important to follow existing accessibility standards, so that contents are accessible to students with visual impairments. The use of software that can convert text into spoken language may also be a useful support for some students.
- *Highlight main ideas*: One of the central tasks of teachers is to guide students effectively through large and sometimes chaotic amounts of knowledge. Here, teachers may help students by providing “road maps”, so that students can allocate their time efficiently and not waste time on what is unimportant or irrelevant. Highlighting key elements and emphasising critical features may help students focus on what is important. Graphic organisers and concept maps may also be useful strategies to direct students’ attention.
- *Enable generalisation of knowledge to new situations*: Students need to be able to transfer their learning to new contexts, and they may require some scaffolding to get to this stage. Some strategies to help students generalise learning content include the use of checklists, mnemonic strategies, templates to support note-taking, concept maps that link new content to prior knowledge, and clarify linkages between ideas.

Furthermore, guidelines for UDL (CAST, 2018) recommend the provision of *multiple means of expression*. Students differ in the way that they can express their knowledge and competence, and there is not one way of expression that will match the entire student population. Therefore, providing options is again paramount, and several strategies exist for this purpose:

- *Provide alternative response modes*: To provide students with equal opportunity to show their competence, the use of technology may be particularly suitable. For instance, spellcheckers, speech-to-text or text-to-speech software, calculators, and web applications may provide students with valuable support. In addition, providing students with some choice about how they wish to demonstrate their knowledge may be a good way of helping them succeed in higher education.
- *Enhance students' capacity for monitoring progress*: In order to enhance students' agency in the learning process, they need to acquire certain tools for self-monitoring and self-assessment. Teachers may ask questions to guide students' reflection about their learning process, and they can show them representations of progress. Teachers may also provide students with assessment checklists, templates that encourage students to reflect upon the quality and completeness of their work, or scoring rubrics to evaluate their work.

The abovementioned strategies should be part of the repertoire of every teacher in higher education. These strategies bring an aspect of choice and creativity into the teaching and learning activities, which may motivate both students and teachers to engage enthusiastically with the learning content. For students, the strategies may also help them to reach and show a higher competence level. But most importantly, the implementation of these strategies may help create a higher education learning environment that is inclusive for a wider range of students.

3. Reasonable accommodations for common disorders

Despite the implementation of UDL, some students with specific disorders may require more substantial support in order to benefit from higher education. This may be the case for students with ADHD, autism, SLDs, and mental health disorders.

While each of these disorders have their own symptomatology, certain accommodations may be beneficial across diagnoses and even for the general student population without disabilities.

3.1 Accommodations for students with ADHD

Students with ADHD may encounter problems with sustaining and focusing attention (e.g., because of frequent daydreaming), especially during classical teaching and evaluation methods. Furthermore, they may have difficulties with planning, organising, and prioritising, which may lead to problems with completing tasks on time (Jansen et al., 2017). Research suggests that the following accommodations may be effective to address some of the challenges experienced by students with ADHD during lectures and exams:

- Extended examination duration;
- Alternative exam format (i.e., changing a written exam into an oral exam);
- Designated seat during exam;
- Taking the exam in smaller groups;
- Using a computer during lectures;
- Recording the lecture;
- Visual time indication (Jansen et al., 2017).

While these accommodations are considered reasonable and effective, it is important for teachers to keep in mind that some students also may benefit from other accommodations than the ones listed here. Therefore, dialogue with the student in question is paramount. In addition, assessing students' strengths and incorporating those in the teaching, learning, and assessment activities is advised.

3.2. Accommodations for students with ASD

Students with ASD may experience problems with navigating social situations in higher education, and this may lead to them feeling lonely, anxious, and depressed (Gelbar et al., 2015). Many students with ASD also experience challenges with making friends and with participating in group activities (Sarrett, 2017). Since social interactivity is considered a crucial factor for learning and thriving, the importance of informing students with ASD about how they may engage optimally with their peers

during learning activities cannot be overstated. An effective strategy may be to help students acquire more advanced social skills (Gelbar et al., 2015), for instance by presenting students with a “recipe” for group work, by providing a clear description of each student’s role in a learning activity, or through developing “game rules” for collaboration (e.g., how to express disagreement, how to question inferences, how to acknowledge the contributions of others, etc.).

Moreover, the physical learning spaces in higher education may cause them to feel stressed because of overwhelming sensory stimuli (Sarrett, 2017). Hence, accommodations for students with ASD should address these typical challenges, and the following strategies may be effective to this purpose:

- Developing “neurodiverse” spaces on campus, where students can meet others with similar challenges and take a break from the more stressful “neurotypical” spaces;
- Implementing sensory-related accommodations, such as autism-friendly architecture that reduces sensory overstimulation. Examples include low lighting, low noise, a policy of no perfume or other strong smells, a variety of seating options (beanbags, ball chairs, armchairs, etc.), and quiet rooms for retreat or stimming behaviors;
- Allowing students to use noise-canceling headphones during lectures;
- Offering possibilities for online interaction, which may be less demanding for students with ASD than face-to-face interaction (Sarrett, 2017).

3.3. Accommodations for students with SLDs

Students with specific learning disorders such as dyslexia and dysgraphia may experience challenges with accessing written information and with demonstrating their competence in a written format. Especially reading comprehension, reading speed, spelling and text writing may be problematic for them, and classical teaching and evaluation methods may be particularly difficult (Tops et al., 2022). Useful accommodations for this student group include the following:

- Providing alternatives for written learning content, such as podcasts, graphic illustrations, or video recordings;
- Providing free choice or alternatives for evaluation, such as replacing written

exams with oral assessments, or allowing video formats for assignments;
- Replacing classical teaching methods by more dynamic and activating methods, such as excursions or internships, peer evaluation, etc. (Tops et al., 2022);
- Offering support for writing assignments, such as up to 30% extra time for tests and extended deadlines (Callens et al., 2012), and writing assistance from note-takers (Hadley, 2007);
- Using software programmes, such as text-to-speech and speech-to-text applications to ease knowledge demonstration during exams, and using social media to keep track of deadlines and assignments.

3.4. Accommodations for students with mental health disorders

Students with mental health issues, such as anxiety, depression, bipolar disorders, or suicidal ideation, may experience challenges that interfere with their academic aspirations. These disorders may be relatively hidden for the environment, but accommodations in the learning environment may nonetheless have a positive impact on the student's academic performance. In addition to addressing a variety of learning styles and incorporating experiential learning activities during lectures, the following accommodations may be beneficial to students with mental health issues (Souma et al., 2012):

- Preferential seating that allows the student to leave the classroom quickly and discreetly;
- Private feedback on academic performance and assignments, in order to avoid public attention;
- Assigning peer volunteers as assistants;
- Extended time for test taking and allowing choice regarding the format of exams and assignments;
- Early availability of course materials and textbooks;
- Frequent and regular breaks (Souma et al., 2012).

4. How to start with UDL and individualized support?

With a more diverse population of students in higher education and with increased focus on equitable access to higher education for all, the need for UDL and individualised support for students with disabilities has gained more attention. However, transforming teaching and learning activities so that they become more accessible to all students is a process that takes time and that requires both competence and effort. This chapter has presented suggestions and ideas for how to implement UDL for all students and how to realize reasonable accommodations for students with disabilities.

While it may be a daunting task for both new and more experienced teachers to make such changes, it is not necessary to implement all of the accommodations at the same time. Instead, it is possible to focus on one particular aspect that one wishes to improve, experiment with different accommodations that could fit the same purpose, and evaluate together with the students how the accommodations were perceived and whether they were found useful. Over time, more accommodations may then be introduced and evaluated. Working together with colleagues to exchange ideas and experiences may also be valuable, as well as observing how other teachers accommodate their lectures for a broad range of learners. These activities may help teachers develop a large toolkit with creative approaches for how to make their courses accessible to as many students as possible.

Questions for further reflection and discussion

1) What are the most frequent disorders amongst students at your institute of higher education, and how do teachers accommodate their teaching and learning activities to these students' special needs? Which areas of improvement can you identify?
2) Use the GAP model of disability to reflect/discuss why UDL is an appropriate yet insufficient strategy to provide accessible higher education for all students.
3) Within your own practice, which strategies do you use to engage in dialogue with students about their needs for individualized support?

4) Arrange a group discussion where people describe their personal experiences with UDL and individualized supports. Make a database of accommodations that were found effective, and try them out in your own teaching practice. Then evaluate.

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11. Accessible digital assessment on Moodle platform

Dorota Sidor - University of Warsaw

Introduction

This chapter targets a very specific issue of accessible digital assessment, whose importance has been proven during the COVID-19 pandemic. In many countries (Poland included) assessment during that time was conducted exclusively online, often in the form of tests and quizzes. This came with its own set of issues, such as relevancy, trust, ethics and of course, digital accessibility. They were obviously present before 2020, but the complexity of the matter was suddenly recognised by a wider public. During this “emergency remote teaching” period (as opposed to “online teaching and learning”, Hodges et al., 2020) sometimes the only way to balance them out was to enforce online proctoring and/or provide adjustments for students with disabilities. Since then the circumstances have changed, but some of the habits regarding preparation of digital assessment emerged and consolidated - not all of them have digital accessibility and universal design as their focal point. Nevertheless, digital assessment is here to stay. Online summative written assessment (in the form of tests or open questions) is a distinctive example where numerous design decisions and tradeoffs are made. Therefore, in this chapter we will focus on this type of assessment.

1. Accessibility dimensions and perspectives

When considering accessibility of any online teaching and learning activity, including digital assessment, there are three main perspectives that should be taken into account:

- Digital Accessibility (software & content design)
- Assistive Technology (hardware & software tech)
- Universal Design for Learning (pedagogy & instructional design).

They are intertwined; the principles of those three concepts are not

contradictory, but rather emphasise different accessibility dimensions. The relationships between them are well recognised in literature, they are, however, misunderstood or confused by the general audience. Regarding the link between UDL and technology, (Scott, Loewen & Funckes, 2003, p. 81) state:

> UD is not synonymous with technology. Participants [of a discussion panel - DS] discussed a misperception in the field that UD is synonymous with technology. UD does not require the use of technology, nor does the use of technology necessarily indicate that an educational environment has been universally designed. Instead, technology is an educational tool that may facilitate instruction and learning as a flexible medium for conveying information. Application of UD in the higher education environment needs to be broadly conceived to include the full spectrum of instruction and learning.

What is more, the importance of synergy between AT and DA approaches are emphasised, for example, in The European Association of Distance Teaching Universities report:

> Digital accessibility does not replace Assistive Technology, nor does Assistive Technology make digital accessibility obsolete. Both approaches work hand in hand to enable people with disabilities to use information and communication technology (ICT). For example, people who are blind need text alternatives (alt-text) for non-textual content such as images. This alt-text is part of digital accessibility. But it is only usable for people who are blind when their AT can read the alt-text to them. So digital accessibility is necessary for AT to be entirely usable for people who are disabled (EADTU, 2022, p. 21)

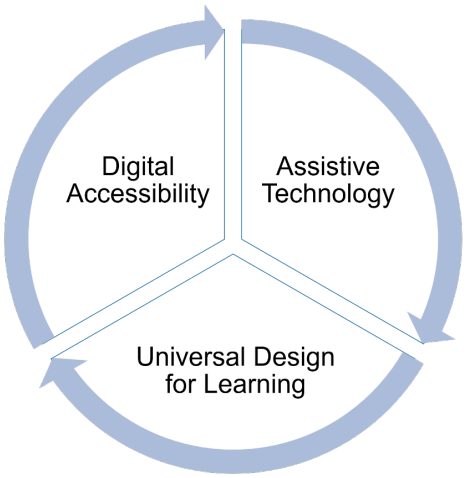
Table 1 presents the basic definitions, principles and examples of DA, AT and UDL to better illustrate dependencies, similarities and differences between those concepts.

Table 1: Accessibility dimensions - definitions, principles and examples

Accessibility dimension	DIGITAL ACCESSIBILITY	ASSISTIVE TECHNOLOGY	UNIVERSAL DESIGN FOR LEARNING
Perspective	Software & content design	Hardware & software tech	Pedagogy & instructional design
Definition	Enables people with disabilities to perceive, understand, navigate and interact with web-based content and produce new web-based content. **Basic principles (POUR):** **Perceivable** - Information and user interface components must be presentable to users in ways they can perceive. **Operable** - User interface components and navigation must be operable. **Understandable** - Information and the operation of user interface must be understandable. **Robust** - Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies.	Various types of specialised technology which enables students to access any web-based content and perform functions that might otherwise not be possible or too difficult. **Examples of AT:** - screen magnification, - screen readers, - alternative keyboards, - voice recognition.	Approach that aims to provide greater educational opportunities for all learners. **Core principles:** **Multiple means of engagement** (the WHY of learning): motivation and engagement with course content, stimulating interest and motivation for learning. **Multiple means of representation** (the WHAT of learning): acquiring course content, active learning, the ability to understand and integrate new information, presenting content in different ways and through various mediums to accommodate students with a variety of learning styles. **Multiple means of action and expression** (the HOW of learning): strategic ways of demonstrating knowledge about the course content, interacting with each other and with the instructor.
Source	(Web Content Accessibility Guidelines (WCAG) 2.0)	(EADTU, 2022)	(Coffman, Draper, 2022)

The relationship between these three perspectives is illustrated in Figure 1.

Figure 1. Illustration of the relationship between Digital Accessibility (DA), Assistive Technology (AT) and Universal Design for Learning (UDL).



1.1 Digital accessibility of assessment

While deciding whether a sample digital assessment (e.g., an online final written exam in the form of a test taking place on a Moodle platform) is accessible or not, all of these perspectives should be taken into consideration. From a Digital Accessibility perspective Moodle Learning Management System (LMS) itself is accessible: it conforms to the W3C accessibility guidelines (see Chapter 6), meaning the overall interface will be accessible for Assistive Technology and will allow its users to navigate and interact. However, the content such as source text or materials, images, tables, colours are dependent on the teacher / examiner. There are also the questions of technical settings chosen by the teacher / examiner regarding the test & question behaviour: do they support accessibility? Do the questions allow multiple means of action and expression? Is the test / exam behaviour reflected in the instruction provided? All of these questions are going to be discussed in subchapter 3 of this article.

2. Assessment: ethics / trust / accessibility equilibrium

During the aforementioned pandemic period, it became evident that designing 100% online summative assessment is the art of balancing different perspectives or even values, such as ethics, trust and accessibility. University of Warsaw (UW), similar to many other higher education institutions (HEIs), provided its teachers with some

guidelines on how to administer e.g. final exams, which were mostly focused on fraud minimisation and General Data Protection Regulation (GDPR) compliance. Digital accessibility of the tools used for examination was assured by the general UW rules in force. Teachers operationalised those guidelines, coming up with their own ways to conduct assessment. One might conclude that one of the most important issues was fraud prevention.

Rossade et al. (2022) list the following fraud minimisation methods (all of which are to be encountered at the UW and many different HEIs):

- Wide question banks
- Open book exams
- Time / number of questions ratio
- Randomisation of questions and answers
- Sequential access to questions
- Disabilitation of certain software freedoms
- Random picture taking
- Remote assistance

Worldwide, the online proctoring idea gained popularity, despite the GDPR interferences and controversies, not to mention yet-to-be-researched influence on student performance, especially in the students' with disabilities context.

Examining closely those methods it could be argued that they do not take into account accessibility issues as much as they could. While some of them do not generate accessibility issues, some might, especially:

- Time / number of questions ratio - if the ratio is too strict, it can cause problems e.g., for students with dyslexia or experiencing anxiety.
- Sequential access to questions - it disallows students' strategic planning while taking the exam and does not leave room for corrections - possible problem for students on the autism spectrum.
- Disabilitation of certain software freedoms - may interfere with certain Assistive Technologies.

At the University of Warsaw, the majority of cases at the Office for Persons

with Disabilities (OPD) include dyslexia, anxiety, autism spectrum etc. The most common issue that students complained about to the OPD was the sequential access to questions, widely used by the teachers / examiners as a fraud prevention method.

This provides an important context for the digital assessment methods implemented at HEIs. Considering ethical issues without taking into account accessibility issues might lead to, as Peter Wilkinson cited in JISC report (2021) states: “Prioritising the possibility of someone devaluing the assignment by cheating over [students’ with disabilities] access, even when there’s no evidence that a student is cheating or would cheat” (JISC, 2021).

3. Understanding interface. Common issues, implementing corrections - examples

In this section the focus will be set on real-life examples of assessment that needed modification from the accessibility point of view.

Note that the examples shown in this subsection were based on several different real-life assessment situations. They were sometimes modified to emphasise the underlying issue. During the SCALED workshop these examples were compiled into one sample exam for hands-on practice purposes.

The underlying issue to the examples provided below seems to be an insufficient understanding of the LMS interface on the teachers’ side. Understanding interface would require awareness of the following aspects of online assessment, for example:

- How does the quiz “behave” (and it is going to behave in accordance to the chosen Moodle activity settings; it is not going to be static like a printed out exam sheet in a face-to-face setting);
- How will the students perceive it and interact with it (it will be different than teacher’s point of view)
- How is the usage of the interface going to affect the assessment results (improper or unsuitable usage of e.g. question types in quiz could affect comprehension of the instruction).

A sample final exam may be correct from a technical point of view (meaning: the LMS itself is digitally accessible, students can access questions, it is possible to put in and send in the answers, the grading (automatic and/or performed by the teacher) is adequate), but may be failed from a computer mediated communication perspective. In a wider sense, the interface enables teachers and students to communicate through the LMS platform (assessment is in this context considered a form of communication). If the interface is used ineffectively (the input from the examiner's side is not digitally accessible or is not designed universally), the communication might be ineffective and may be an impediment especially to the students with disabilities.

In this subsection there will be discussed examples regarding:

- Instruction
- Question types
- Ways of providing answers
- Source materials: images, tables
- Sequential structure of the test.

3.1 Instruction

The issue of proper instruction is not new and is widely discussed; the (OFQUAL, 2021) principle that the "Instructions on how to complete an assessment should be clear and unambiguous" summarises it, along with the following guidelines:

The instructions (...) in assessment should:

- enable learners to understand how to complete the assessment without needing to read through unnecessary text
- clearly tell learners what they need to do – for example, how many tasks they must complete, whether their answers should make a certain number of points or be within a word limit, or to turn the page to find further information relating to the task
- make it clear if learners can respond in a range of ways – for example, if learners can respond by either using a bar chart or a pie chart
- give instructions in the order in which learners should follow them. Each

instruction might be in a separate sentence or paragraph

- be in the active voice and give direct instructions. For example, “You have 2 hours to complete the assessment”, “Answer all the questions”
- if referring to any other elements of the assessment (for example, to an image or to source text), be clear to which element the instructions and rubrics are referring to
- use commands that are literal, unambiguous and explicit, so learners do not interpret commands in different ways
- only include information for learners and not, for example, information for invigilators (OFQUAL, 2021).

Learning from experience, a common issue regarding instruction for digital assessment is the assumption that the student is familiar with “practical” aspects of the assessment, including how it is structured and how the interface of the online learning platform is going to behave. One might assume that this stems from face-to-face setting examiners’ habits: for example, during a face-to-face final assessment the student gets familiar with the test structure, question types etc. once they take a look at the question sheet and the only additional information they need is how much time they have to complete it.

An online test needs more (and different!) information about the assessment to be delivered than in an in-class setting: the student has to access the exam space where the test is implemented, then has to decide when to start their attempt, and in a very commonly used sequential, one-question-per-page method of displaying the questions, the student cannot get acquainted with the test structure and adapt an answering strategy, as the only way of navigating the quiz is to move forward from question to question. Also, in a face-to-face assessment situation the paper question sheet is not going to disappear the very second the time is up - in the case of an online quiz the second the time is up, the quiz becomes unavailable. Also, in the online setting there is always a possibility of technical difficulties that need to be addressed without the direct presence of the teacher.

All of this might be a significant impediment for all of the students, but especially the students on the autism spectrum or experiencing anxiety.

Providing instructions that are well-structured, complete and take into account the context of the online learning platform seems to be essential. A well-prepared instruction for online assessment should take into consideration such elements as:

- Time limits / number of (open and closed) questions – the ratio
- Mode of presenting questions, navigation (e.g., sequential, possibility to go back to previous questions, dependency between the parts of the exam etc.)
- Type of questions (e.g., multiple choice + 1 essay, series of short-answer questions, etc.)
- Type of feedback (immediate vs delayed)
- Emergency contacts (e.g., e-mail, zoom link)
- System restrictions such as blocking opening of a new window/tab in a browser

In more complex summative assessments it is a good practice to provide students with a warm-up or sample exam, consisting of the same activity/question types as in the actual exam. If a student is not familiar with a certain type of LMS, this allows them to safely practise sending in their answers. Figure 2 demonstrates an example question from a warm-up exam, showing the student how an open question with multiple ways of providing answer looks and behaves like.

Table 2: Example (1) - Instruction to an example final online exam on the Moodle platform, before and after corrections

Before

Exam

10 min per 7 questions

Attempts allowed: 1

Time limit: 10 mins

Teacher input:

10 min per 7 questions

LMS input:

Attempts allowed: 1
Time limit: 10 mins

Corrected

Welcome to the exam space!

Please read the instructions below carefully before you start your exam.

Timing

- This exam space will only be open **for one hour (from 12.00 to 13.00) on 15 June 2020.**
- The exam will **open at 12.10** and this is when we start counting the time.
- You will have **20 minutes** to write the exam. The exam closes after 20 minutes - at 12.30. The system will automatically submit whatever you manage to complete. While taking the test you will see a **counter showing how many minutes are left** until the end of the test on the right side of the screen.

Structure

- You will be able to make **only one attempt** at the test.
- Every page will display 1 question.
- **It's set as a "sequential" test,** which means that once you turn to every next page, you won't be able to go back and review or change your answers on previous pages.
- The actual exam consists of **7 exercises**. There are six types of tasks used in the exam, namely: two versions of multiple choice (choosing only one or several options from the ones provided), T/F questions, matching, filling in a short answer (one word) and an open question.
- **There is a 3-minute warm-up** exam that will show you how the actual exam is going to look like. It is not obligatory to complete the warm-up!

Emergencies

- If you lose your connection or for any other reason you lose your login on the Kampus platform, please log in again - the system will allow you to take the exam again starting from the place where the interruption took place (you must log in again as soon as possible).
- In case of further difficulties, please contact me via ZOOM (https://us02web.zoom.us/j/87906944294). I will be available from 11:45 until 13:15.

Results

- The maximum score is **10 points**. You will see your result **on your USOSWeb account** not later than on 20 June 2020 (we have to grade your answers manually).

Good luck!

Warm-up exam (non-obligatory)

Accessible Digital Assessment Exam

Teacher input:

Dear Student,
Welcome to the exam space!
Please read the instructions below carefully before you start your exam.

Timing

• This exam space will only be open for one hour (from 12.00 to 13.00) on 15 June 2020.

• The exam will open at 12.10 and this is when we start counting the time.

• You will have 20 minutes to write the exam. The exam closes after 20 minutes - at 12.30. The system will automatically submit whatever you manage to complete. While taking the test you will see a counter showing how many minutes are left until the end of the test on the right side of the screen.

Structure

• You will be able to make only one attempt at the test.
• Every page will display 1 question.
• It's set as a "sequential" test, which means that once you turn to every next page, you won't be able to go back and review or change your answers on previous pages.
• The actual exam consists of 7 exercises. There are six types of tasks used in the exam, namely: two versions of multiple choice (choosing only one or several options from the ones provided), T/F questions, matching, filling in a short answer (one word) and an open question.
• There is a 3-minute warm-up exam that will show you how the actual exam is going to look like. It is not obligatory to complete the warm-up!

Emergencies

• If you lose your connection or for any other reason you lose your login on the Kampus platform, please log in again - the system will allow you to take the exam again starting from the place where the interruption took place (you must log in again as soon as possible).

• In case of further difficulties, please contact me via ZOOM (https://us02web.zoom.us/j/87906944294). I will be available from 11:45 until 13:15.

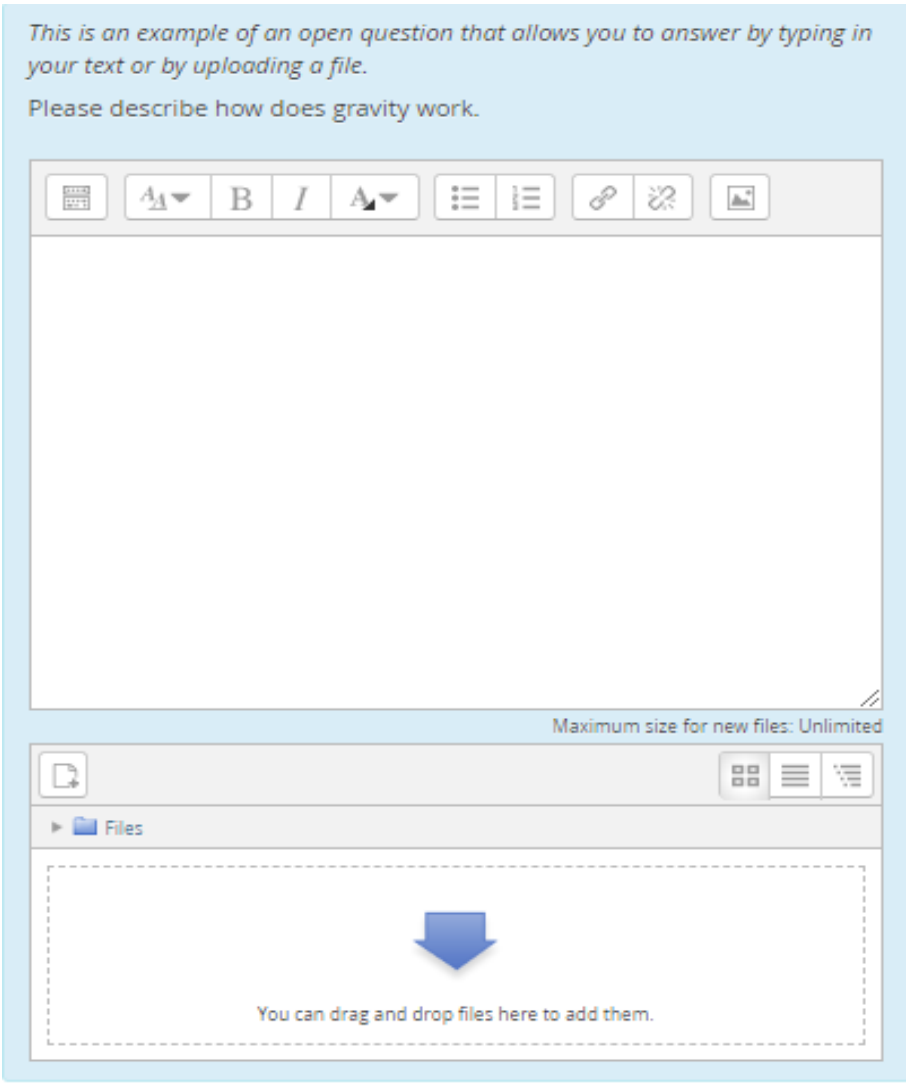
Results

• The maximum score is 10 points. You will see your result on your USOSWeb account not later than on 20 June 2020 (we have to grade your answers manually).
Good luck!

LMS input:
Attempts allowed: 1

Time limit: 20 mins

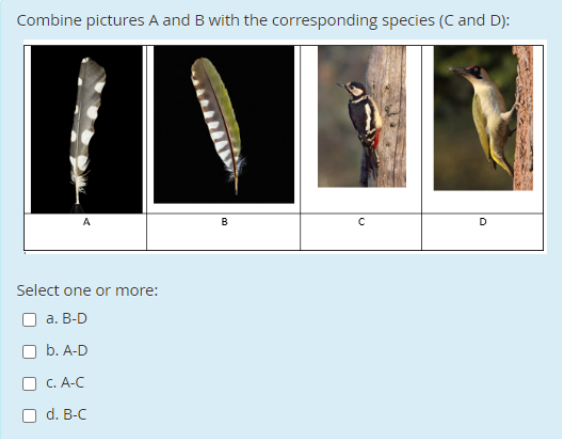
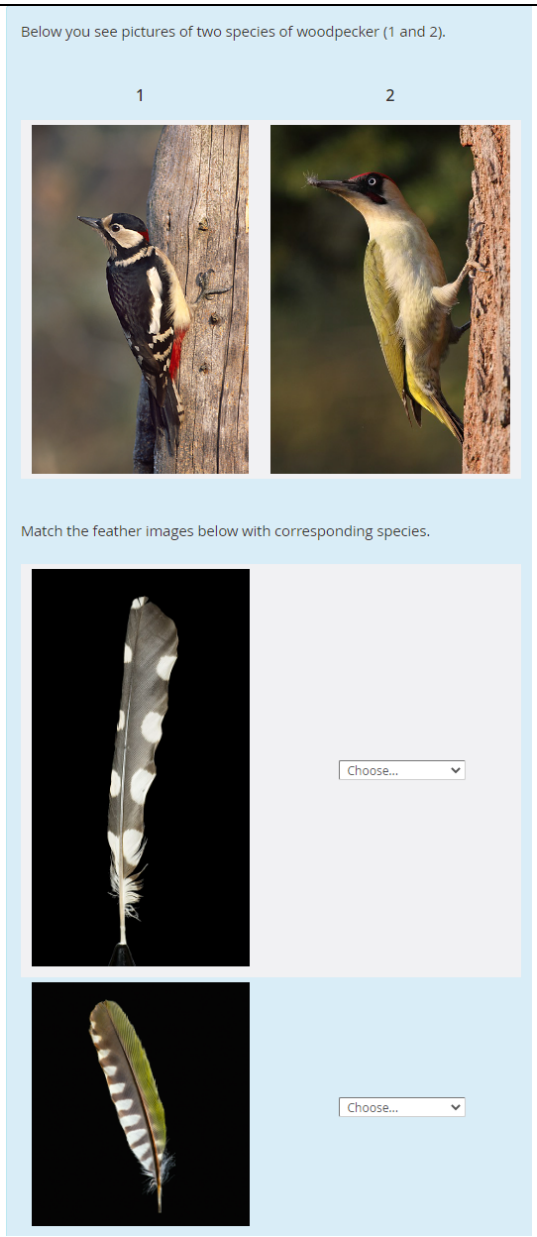
Figure 2. An example question from a warm-up exam



3.2 Question types

The proper use of the question types provided by the LMS allows the student to provide their answers in a more intuitive way, removing unnecessary difficulty related to comprehension of the instructions. Example (2) presented in Table 3 shows a matching question that was implemented as a multiple choice question on the e-learning platform.

Table 3: Example (2) - Matching question with illustrations, before and after corrections

Before	Corrected
 **Image description** Screenshot from Moodle platform. It's a multiple choice question. In the question instruction there is a table with 4 columns containing two images of feathers and two images of birds marked as A, B, C, D. Underneath there are answer options formatted as "lowercase a. uppercase A-D" etc. The learner has to choose an answer option that contains proper matching of birds and feathers.	 **Image description** Screenshot from Moodle platform. It's a matching question. In the question instruction there are two images of birds: 1 and 2. Underneath there are two images of feathers. There are drop-down lists of answer options next to the images. The learner has to match images of birds with corresponding images of feathers.

Response options in the original question contain a combination of letters used as listing elements and letters used as picture references and matched. This way of presenting information may be confusing and can increase the risk of choosing a wrong answer not as a result of lack of knowledge. The corrected version allows the student to directly match items and is consistent with the instruction.

In Example (3) presented in Table 4 the question type was chosen properly (multiple choice). The issue was the implementation on the LMS platform. It was probably supposed to mimic the appearance of a printed out test question; the response options were put into the instruction, and the possible answers were just merely letters below it. What is more, the question setting regarding shuffling answers was turned on.

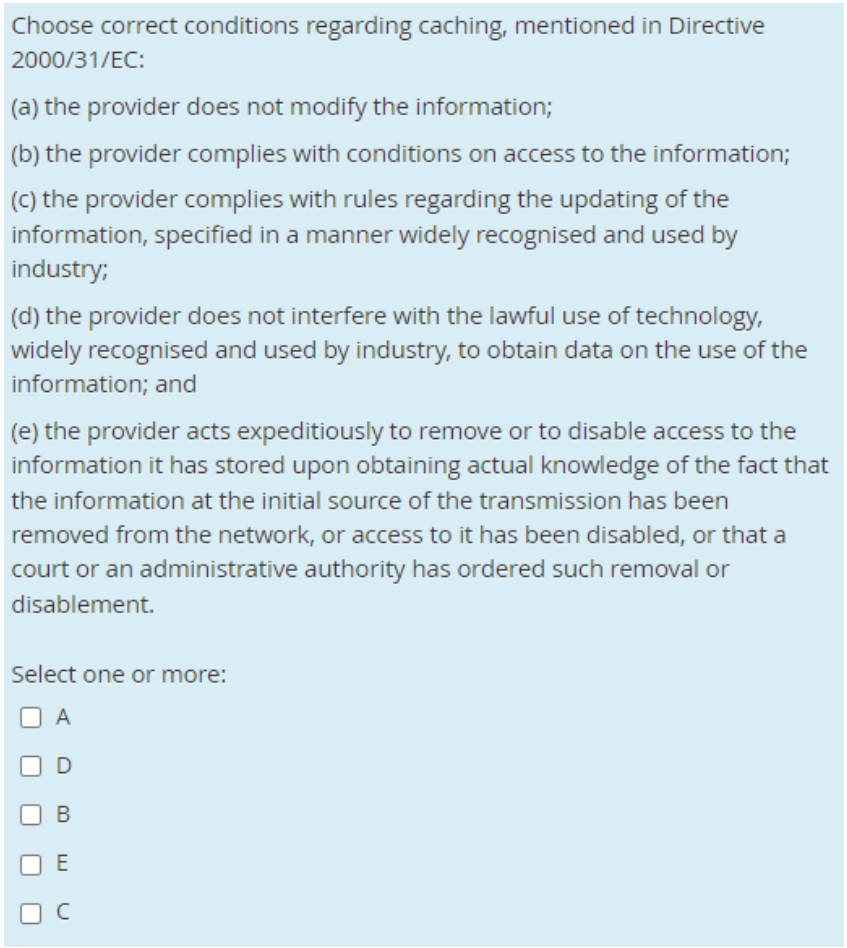
As a result, the question had an added layer of difficulty for the student that had to dedicate additional time to untangle the question's design. In the corrected version the answers were put in the possible answers section. The numbering of the possible answers was automatically done by the LMS and the shuffling of the answers, even when it is turned on, will not affect comprehension.

3.3. Ways of providing answers

One of the principles of Universal Design for Learning is "Multiple means of action and expression (the HOW of learning): strategic ways of demonstrating knowledge about the course content" (CAST, 2018). In Example (4) shown in Table 5 the question allows the student to put in their answer (a mathematical equation) in one way: through the maths editor embedded into the LMS. The editor requires precision in interacting with the interface. It is not a mistake per se, but the question could be designed in a more universal way: Moodle LMS lets the teacher decide whether to accept multiple ways of providing answers to open questions or not.

In the corrected version the student is encouraged to choose one of three methods to provide their answer (using the editor, taking and uploading a photo of a hand-written answer or uploading a TeX file), depending on their individual preference, habits or needs related to a disability (for example physical).

Table 4: Example (3) -Multiple choice question with improperly implemented response options, before and after corrections

Before
 **Image description** Screenshot from Moodle platform. It is a multiple choice question about an EU directive. The answering options (marked with lowercase letters) are provided in the question instruction. Beneath the instruction there are checkbox answer options marked as uppercase A to E. They are not presented in alphabetical order.

Corrected

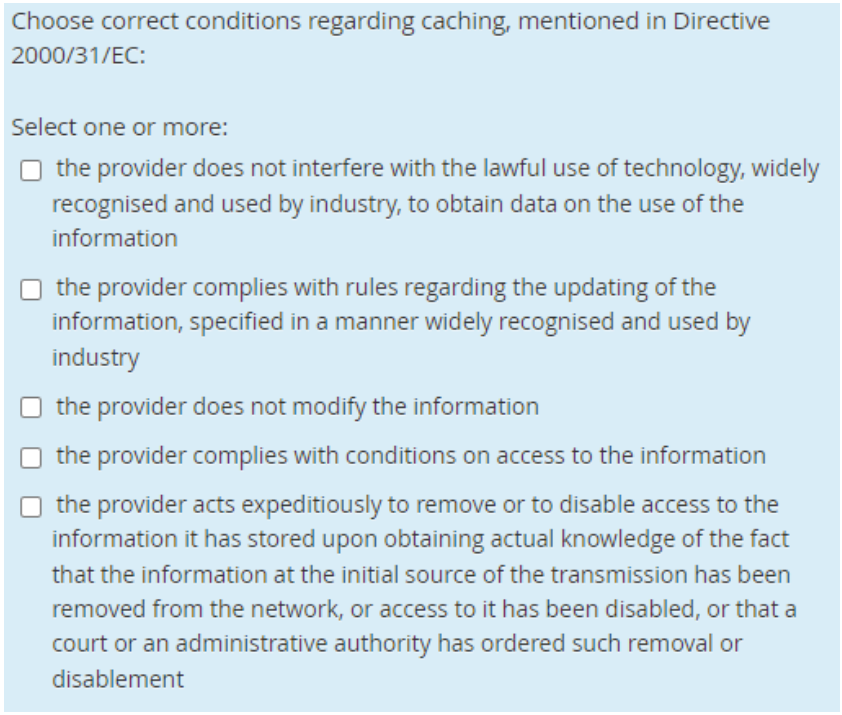


Image description

Screenshot from Moodle platform. It is a multiple choice question about an EU directive. The answering options with checkboxes are provided beneath the instruction.

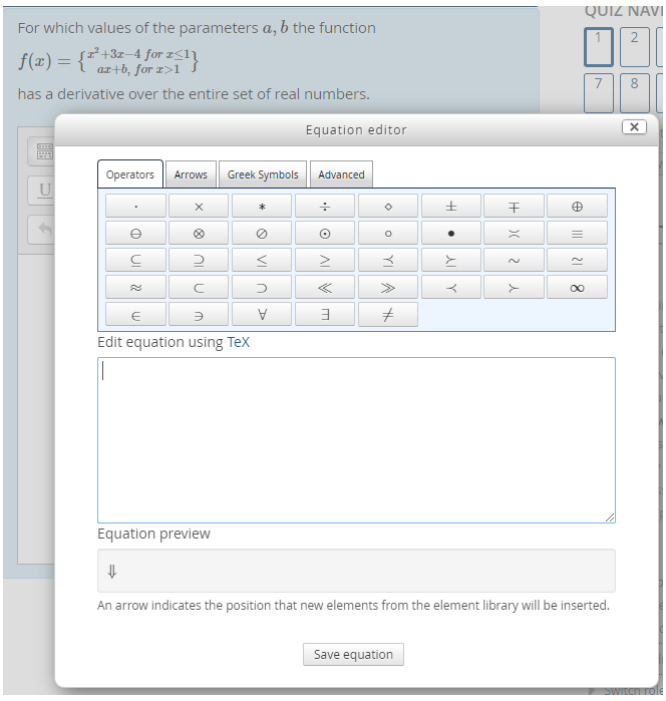
3.4 Source material: images, tables

The proper use of source images, tables and colour is an important part of Digital Accessibility approach (e.g., using alternative text, proper formatting / HTML coding of the tables, providing sufficient colour contrast etc.). Numerous additional guidelines, for example guidelines by The Office of Qualifications and Examinations Regulation (Ofqual), also underline the importance of considering whether those elements are:

> (a) a central element that is necessary to measure the construct
> (b) a useful element that might help to measure the construct, but is not strictly necessary
> (c) an incidental element that does not help to measure the target construct - for example, an image that is purely decorative. (Ofqual, 2021, p. 14)

Examples (5) and (6) presented in Table 6 and 7 show test questions that use images and tables as a central elements, but the way of their presentation is challenging for students. In Example (5) the source image provided by the teacher has an unnecessary high resolution, resulting in several problems: (a) the displayed image interferes with the LMS interface and it generates unnecessary difficulty especially for the students with visual impairments who use Assistive Technology. e.g., screen magnifiers; (b) the student has to scroll down to access the question itself and the answer field; (c) size of the file might be a challenge for the students with suboptimal internet connectivity. In the corrected version a resized image has been uploaded, also with the setting that allows a responsive image display (e.g. on smartphones).

Table 5: Example (4) – Open question requiring mathematical input before and after corrections

Before
 **Image description** Screenshot from Moodle platform. It is an open question requiring mathematical input. A TeX equation editor is open.

Corrected

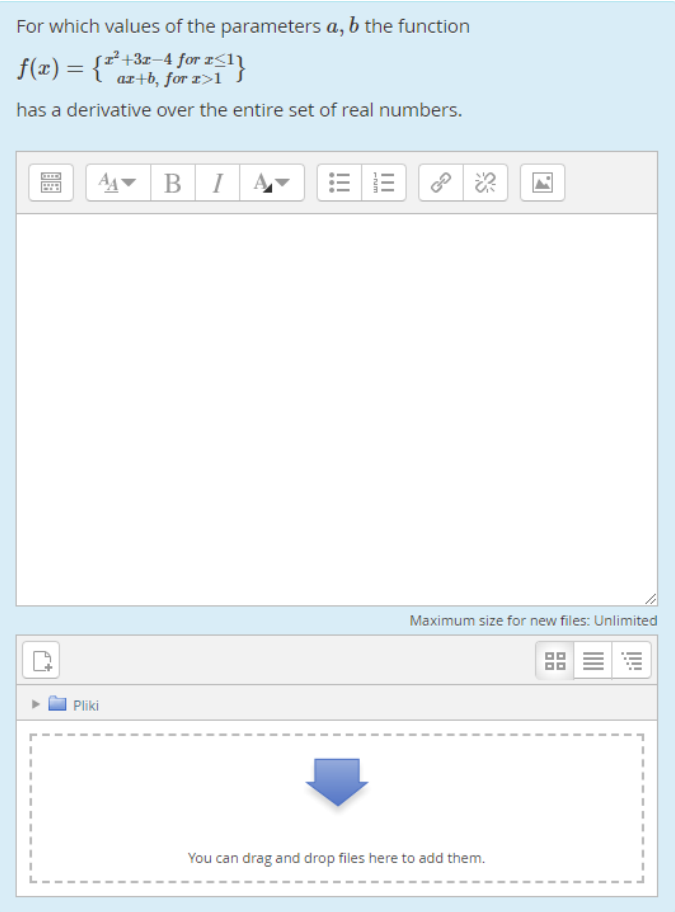
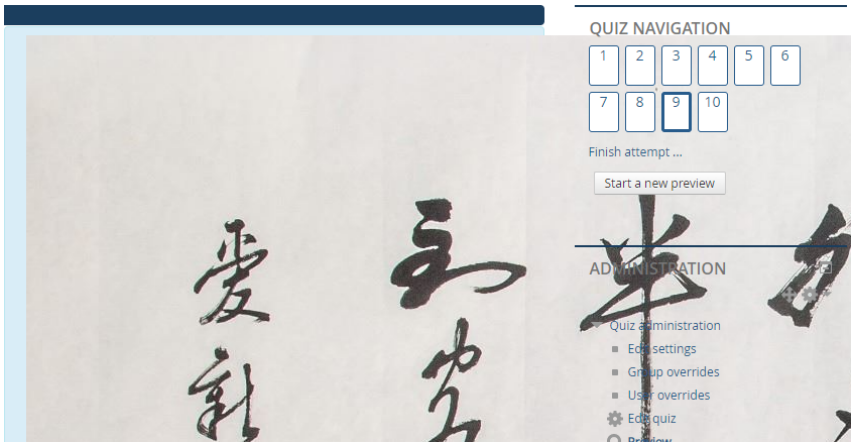
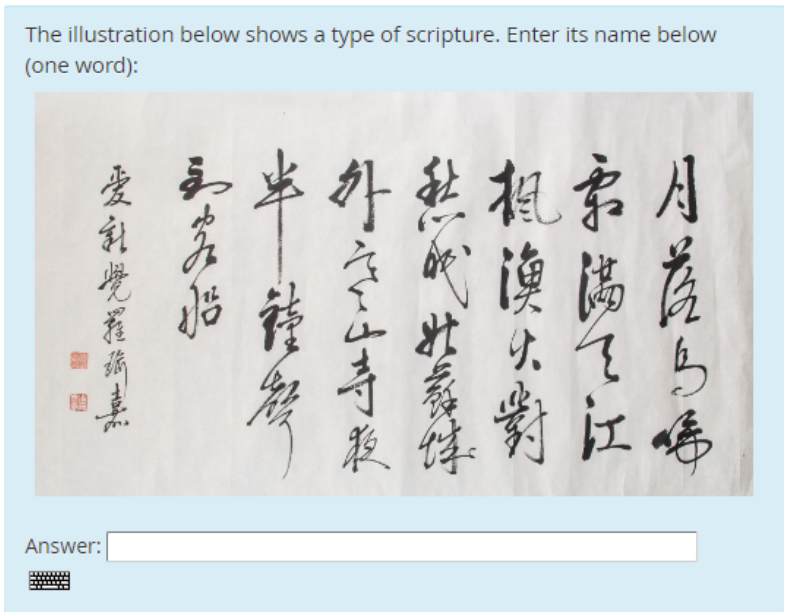


Image description

Screenshot from Moodle platform. It is an open question requiring mathematical input. There is a text box and a file drag-and-drop box underneath the instruction.

Table 6: Example (5). Question with an improperly inserted illustration before and after corrections

Before
 **Image description** Screenshot from Moodle platform. It is a short answer question. In the instruction there is an improperly embedded image of Chinese scripture - it is too large and overlaps the navigation menu in the quiz.
Corrected
 **Image description** Screenshot from Moodle platform. It is a short answer question. There is an embedded image of Chinese scripture.

Example (6) shows a way of inserting tables to LMS in a form of a screenshot from an external document (e.g., MS Word), probably an exam sheet that was prepared with the intention of printing out. The table is inaccessible for students using Assistive Technologies. In the corrected version the table is encoded in HTML.

3.5 Structure - sequential presentation of the questions

As mentioned before, the sequential organisation of the assessment questions became very popular among UW teachers trying to minimise the possibility of fraud during online summative assessment. Bearing in mind that this is not an optimal solution from the accessibility perspective, there are some good practices that might help make it less problematic.

During the SCALED workshop the sample exam was structured as described in Example (7) presented in Table 8. In general, the structure itself is an obstacle for the user, as it is not explained enough in the instruction nor logically arranged.

Table 7: Example (6) – Question with a table inserted as a picture before and after corrections

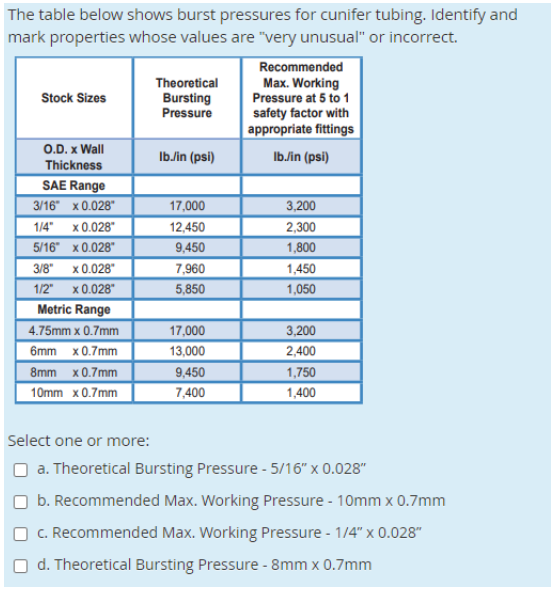
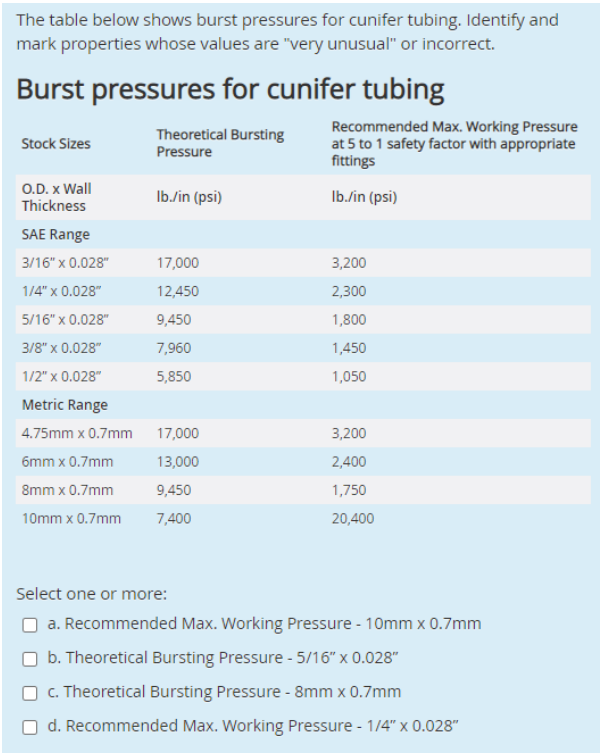
Before	Corrected
 **Image description** Screenshot from Moodle platform. It is a multiple choice question about burst pressure. In the instruction there is an inserted image of a table without a caption. Beneath the instruction there are answer options.	 **Image description** Screenshot from Moodle platform. It is a multiple choice question about burst pressure. In the instruction there is a HTML table with a caption. Beneath the instruction there are answer options.

Table 8: Example (7) – Sample exam structure before and after corrections

Before	Corrected
● Sequential question presentation (not explained to the student) ● Open questions mixed with closed questions ● Time-consuming questions mixed with quick-answer questions ● More demanding tasks placed at the beginning of the assessment	● Sequential question presentation (explained to the student in the instruction) ● Open questions placed at the end of the assessment (with an adequate information about it for the student) ● Quick-answer questions placed at the beginning of the assessment ● More demanding tasks placed at the end of the assessment

In the corrected version the test is more predictable and intuitive, both regarding the types of activities that the student has to perform and increasing difficulty level throughout the assessment. The corrected version, although not ideal, provides more support for all of the students, but especially for those who need more strategic planning of their activities (e.g. students on autism spectrum, students experiencing anxiety).

4. Results and Conclusions

On the basis of the theoretical approaches to assessment accessibility and the practical examples shown in this chapter, some recommendations for accessible digital assessment could be formulated.

1. **Raising LMS interface awareness among the teachers** is crucial for an accessible assessment design. Teachers / examiners should take into consideration not only what is going to be assessed and what way, but also:
    - What is it going to look like on-screen? Is it accessible for Assistive Tech?
    - What is it going to feel like to take that exam? Do my chosen LMS settings put an unnecessary layer of difficulty to the assessment?
    - What information is already automatically presented to the student in the LMS? What do I have to put in myself?

In this context using the preview feature of any online learning platform and beta-testing the assessment before it goes live is necessary.

2. **Extra effort should be put into preparing well-structured instructions with information that is specific to the online context of the assessment** (some not typically provided by the teacher during face-to-face assessment).
    - Information regarding:
        - the ratio between time limits and number of questions
        - the type of questions
        - mode of presenting questions, navigation
        - possible system restrictions

      is crucial for students' planning and strategy development.
    - Information on type of feedback (immediate vs delayed) might have an impact on their motivation and managing expectations towards the teacher / examiner.
    - Information on emergency contacts is especially important in online high-stakes assessment settings, when lack of direct contact with the teacher / examiner might be anxiety inducing.

These practical suggestions have all three accessibility perspectives as their source: Digital Accessibility, Assistive Technology and Universal Design for Learning. Although digital assessment design could be perceived as a mechanical approach to inclusive assessment (Nieminen, 2022), one might suggest it would be a part of Nieminen's (2022) Assessment for Inclusion concept (along with the Assessment of Learning, Assessment for Learning and Assessment as Learning) through, for example, promoting teacher awareness of students' point of view on the digital assessment activities and their interactions with the LMS interface, and also emphasising that digital (online, computer mediated) assessment is a form of communication between teachers and students.

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12. Accessible materials and accessible sharing - the perspective and practices of the Office for Persons with Disabilities (OPD) at the University of Warsaw

Agnieszka Bysko - University of Warsaw

Introduction

Accessible materials and the way we share them with members of an academic community is a core element of what we consider an accessible learning environment. However, accessible sharing was intentionally introduced in the title as a wild card because it may be understood not only as providing accessible materials but also as communicating in a way that is deliberately chosen to accommodate perspectives of different kinds of learners.

Accessible sharing is as much about pragmatic access to the content as about communicating and involves being transparent, engaging emotions, sharing personal interests, facilitating a sense of belonging and self-efficacy, and, last but not least, considering that the process of teaching and learning is a process of mutual sharing. In other words, fully accessible material covers both the practical and psychological perspective. A document that is readable, well-composed, and well-formatted but leaves the student with no sense of agency cannot be considered accessible.

Accessible sharing may be attained in many ways. The advice on accessible sharing presented below is based on the experience of the OPD's team members, their daily consultations with students, discussions with academic teachers, and moderating group discussions during training sessions for academic staff from different university faculties and units. The presented accessible sharing involves formats, content, framework for work, assessment, knowledge-sharing, methods, and class moderation.

1. Accessible formats of materials

Teaching materials may not be easily accessed by some students because of individual and specific sensory, physical, and cognitive abilities and needs. To make the materials accessible, one needs to understand the obstacles students with disabilities, for example, may encounter while reading or accessing information in print-based and digital-based materials. However, we may reduce potential barriers by preparing materials by default in the following ways.

It is paramount that the layout of the materials is clear and consistent on a plain background. It means that the use of colours, shapes, images, icons or italics may not be most convenient way to convey the information. Instead, a clear description should be used. However, if visual cues need to be used in a task, for example, when the original task is to conjugate a verb written in bold, they can be marked visually in a modified font shape, for example, and in parallel followed by * or # sign or a bracket [..] with a description of the marking system.

Description and simplicity are key. For example, the table of content should use basic tables with a grid layout, clear headings and an introduction describing their structure (e.g., “a table consists of five verses and three columns. Data in column 1 one represent …. Data in the lines that follow represent …”). Similarly, hyperlinks need a clear description. The use of “click here” or “here” should not be use because they only make a special correspondence to a paragraph, graphic element, or a title. The structure and main elements of the document must not be expressed solely by spacio-visual cues such as font size, an introduced spacing, a colour, or manually inserted numbering.

Here are other recommendations of how to make the material more accessible:

- large, sans-serif fonts, interlines of 1,5 points, left alignment, without underlining, ClipArt or WordArt options, and an unusual letter- and word-spacing;
- alternative text for each image to inform about graphics inserted for the decorative purpose.

- structured headlines and built-in styles;
- the use of Ctrl+Enter to mark the new page;
- high contrast colour combinations (a free online checker for colour-blind users or simulating colour-blindness in the web browser);
- correct punctuation and spelling – it may facilitate fluent understanding of a text by text-to-speech software users;
- videos that are captioned, audio-transcribed, and easy to play;
- navigation through the text by using the keyboard alone;
- PDFs with an accessible text layer or an alternative document in a plain text format to avoid relying on graphic objects; when a PDF text is copiable, it can be pasted to the text editor. If not “crushed”, it can be accessed by screen readers or be personalised.

2. Accessible content

Making the content more accessible is about making the context clear and understandable for all students. If specialised terms and jargon are used, synonyms and paraphrases should be provided. Whereas acronyms abbreviations should be explicitly introduced and explained. Students who will benefit from such an approach are those on the autism spectrum, with different cultural backgrounds, hard-of-hearing, and deaf students. It is paramount to keep in mind that some students may have had limited previous access to some meanings.

For example, deaf students may not be familiar with the ideas that represent the experience of hearing students. Therefore, when creating or choosing teaching materials, we need to avoid the one’s perspective or identity and be verify whether the identity aspects or personal characteristics are not represented negatively. When sensitive issues are about to be discussed, it is worth using trigger warnings according to the topics and content of the course to minimise instant stress and the effect on the mental condition of more vulnerable students.

3. Accessible framework for work, assessment, and sharing knowledge

The framework for work, assessment, and sharing knowledge can be made accessible in many ways. In general, eliminating time pressure and limits as well as excluding irrelevant competencies should be a default practice.

The arrangement of the learning environment is also important. The seating arrangement should facilitate communication and the lip-reading process – students sit in a circle and the teacher's face is continuously visible to the students.

Behaviour needs to be effectively monitored as some students may experience hypersensitivity. It is therefore important that only one person talks and sources of distraction are reduced as much as possible.

As for classroom activities, and listening tasks specifically, replaying and stopping of the recording should be allowed to facilitate answering the questions and selecting the correct option. However, considering the examination standards, this structured and step-by-step approach can be employed only in the learning process and formative assessment, for example, when preparing or practising for the listening part of the exam.

Students would also benefit from past papers and samples of previously submitted assignments so they can learn about the success criteria for a given assignment. In a similar vein, students should be allowed to operationalise and personalise their learning goals and co-create assessment methods. This will involve them in monitoring progress in learning. Reflective and guiding questions such as "How will I know that I have made progress?" or "How would I prefer to express or document this progress?" will support this process.

Considering that the focus in on the progress in learning, course assessment should be performed through different means and with the use of innovative methods. Students should also be allowed to exclude from the final grading the least successful samples of their performance.

However, what is important in regard to course objectives and assessment, is setting clear course requirements, expectations and pre-requisite skills needed for complete the course successfully. The course syllabus should also state any potential accessibility limitations. This information should be presented in the introductory session to the course and restated a few times during the course, along with the information on where students can seek assistance and accommodation services at the university.

From the practical point of view, before starting the course or moving to the next stage of the course, basic and competence relevant entrance performance assessments may verify whether a specific condition will not critically disrupt cognitive performance during the task. Students should be allowed to assess their physical as well as mental readiness to do practical tasks that may involve any kind of risk.

Last but not least, the teacher should be approachable and welcoming through maintaining ongoing contact with the students throughout the course via electronic correspondence and office hours. The correspondence may concern the specific class content, materials, progress criteria, deadlines, missed assignments, and other relevant issues that are important for successful course completion.

4. Accessible sharing methods and class moderation

Accessible sharing methods and class moderation concern the ways materials are available to students, what tools can support their learning, and how the course will be provided. By default, resources and learning and teaching materials should be available in the electronic version, displayed during the lesson and provided to the students before or after the lesson. If changes are made to the presentation or notes are made during the class, they should be prepared in the electronic version (e.g., notes can be taken in a Word document) and made available to students after the lesson.

Although technology is ubiquitous these days, some students may still find the online form of the course or using the Moodle platform challenging. Clear information on how the course will be run and where to seek for technical support should be provided at the beginning of the course. Students may also benefit from information

on programs that may support their learning and performance in the course, such as online grammar checkers (e.g., Ginger Software, LanguageTool, Grammarly), software supporting the reading processes (e.g., Balabolka), mind-mappers (e.g., FreeMind), software converting text into audio files (e.g., Balabolka), and the dictate function in online Office365 version.

5. Conclusive remarks on accessibility: Creating interactions, providing empowering experience, and facilitating engagement

Accessibility entails creating interactions, providing empowering experience, and facilitating engagement. The teacher should create a learning space where students can realise their plans, interests, social engagement, and reflect on the recently made progress. What will fuel students' intrinsic motivation is the personalisation of the evaluation process. If the evaluation are strongly personalised, inflexible procedures conventionally used to prevent cheating will not be needed.

Similarly, when students are engaged in material creation, they can reflect on their person needs and in this way they can pursue their learning goals more effectively. Teaching and learning materials should be diverse and their quality high to respond to multiple individual perspectives. Thus, materials created by people with special educational needs could be used as an affirmative and encouraging tool.

Communication is paramount to foster a sense of belonging among students. Students should be made aware of diverse communication strategies and different ways of experiencing the environment and varied aspects of its design. The questions that may be asked are, "How can Deaf people dance?", "How can a person who does not communicate verbally sing?", "What does lip-reading really mean?", "Can multilingualism be a challenge?", "Can an academic teacher who cannot move or speak give a lecture all by himself or herself?", and "How does a person that cannot see since childhood creates an inner representation of objects inaccessible by touch?".

Last but not least, the teacher should act as a positive role model. They can show students how they manage their uniqueness and what strategies they use to

overcome obstacles as a learner. Sharing successes and failures are crucial for students' professional development.

Also, it needs to be remembered that the course content and requirements are highly shaped by the teacher's personal experiences and beliefs. Course design and delivery should be free of stereotypes and previous teaching routines that create barriers. The teacher can use faculty-driven peer review to ensure the course to be more accessible. Feedback provided by colleagues is valuable and can point out barriers one may not be aware of.

The teacher can also help protect the confidentiality of sensitive information about a student. The student should be given a choice of whether to disclose the information; however, the teacher should create an environment that encourages the disclosure of the information. If the information is disclosed, the student may seek assistance more effectively. Therefore, the teacher should ongoingly inform students about interdisciplinary support offered by the institution they are studying in. In this regard, it is worth remembering that the assistance should be adequate to the student's needs. Disability is only one of many aspects of a person's identity, and the teacher may not be able to meet all the needs of the student. Therefore, it is paramount that the student is directed to the institutions that can provide adequate and efficient support.

6. Resources and procedures designed for broader access to the learning process, available in the OPD at the UW

6.1 Digital Library

What makes the project of the Academic Digital Library (Akademicka Biblioteka Cyfrowa) or ADL special is that it involves the cooperation of many major academic institutions from Poland. Students may order the adapted materials at the local ADL coordination unit. A wide net of cooperators across the country work together to expand the range of adapted materials available to students. This strategy makes the process more efficient and reduces the necessary time and effort. The ADL provides a special interface and remote training sessions that enable engagement in the preparation of adapted materials for volunteers aged 15 and over. Volunteers are

trained in using the Optical Character Recognition (OCR) software (i.e., technology that enables optical recognition of characters on graphic, printed and manually saved files) and correcting mistakes that occur as a result of the automatic recognition of the text from the scanned images of pages.

6.2 3-D printing lab

3-D printing creates many opportunities; however, it needs to be considered what may be printed to benefit a wide variety of users. We consider 3-D printing mainly as a tool for the inclusion of blind students but it does not mean that the printed materials cannot be useful and attractive for other students as well; for example, for those who need multisensory experience to understand complex spatial geometric relations. Objects whose 3-D representations may be printed are those that are too large and too difficult to reach to experience them by touch (e.g., a building or a boat), too small and too complex to distinguish easily their individual elements by touch (e.g., the features of a map), too fragile or prone to damage to be explored by touch and manipulation (e.g., a mosquito, a bird, a museum exhibit).

6.3 Tutors and mentors – ambassadors of the OPD

The OPD has a growing network of associates focused mainly on informational support for students on the autism spectrum, who may find all the rules at the University incomprehensible. Some of the tutors work within a stable exclusive dyad with students on the autism spectrum, and some of them work as buddies for more students from their unit. Their role as tutors is to facilitate the transition from the high school to the university. As we do not want students to drop out of a tutoring programme, we provide a careful qualification process for candidates for tutors, and regular supervision sessions with a psychologist for those who entered the programme. These sessions are aimed at facilitating communication and cooperation between students with a chance for regular debriefing.

6.4 Diverse team

The team of the OPD consist of persons representing diverse perspectives of possible final users of our services. For instance, IT team members use screen readers themselves and rely on accessible web design. We have a strong and

growing network of the OPD's "graduates" who are currently academic teachers and those who have used the OPD's services and know the strengths and limitations of different formal and practical supporting solutions.

7. Conclusion

As long as we work within an approach centred on accommodations, adequate character and range of support offered to a student should depend on the precise examination of interactions between the current student's condition, his or her challenges, tasks to do, and environmental design. That is why it should be time-limited and regularly updated. But still, choices and flexibility offered, as well as multiple means of presenting and expressing knowledge, may help overcome many recognised and unrecognised barriers.

Additional information:

http://www.washington.edu/doit/videos/index.php?vid=79
https://www.celt.iastate.edu/wp-content/uploads/2018/10/UDL-QM-accessibilitychecklist.pdf
https://www.umt.edu/accessibility/electronic-accessibility/guidelines/documents/default.php

13. Meeting the diverse needs of language learners

Agnieszka Kałdonek-Crnjaković - University of Warsaw

Introduction

Language learners' needs in today's classroom are very diverse and they can be met by applying inclusive practices, which have been labelled differently in the literature. This includes 'individualization', 'scaffolding', 'differentiated assessment', 'student-centred approach', 'adaptive instruction', or 'personalized learning' (Stadler-Heer, 2019; Suprayogi, Valcke, & Godwin, 2017). Although the labels are diverse, they imply similar ideas, that is, "to cope with the diversity of students, adopt specific teaching strategies, invoke variety in learning activities, monitor individual student needs and pursue optimal learning outcome" (Suprayogi & Valcke, 2016 in Suprayogi et al., 2017, p. 292). According to the UNESCO's Guidelines for Inclusion (UNESCO, 2005), teachers are expected to address and respond "to the diversity of needs" of their students by means of "changes and modifications in content, approaches, structures and strategies, with a common vision which covers all children (…)" (UNESCO, 2005, p. 13).

Conclusively, one-size-fits-all approaches should no longer be employed in the classroom. We now teach in the "post-methods era" (Celce-Murcia, 2014, p. 10). Dealing with learner variability and accommodating students with different strengths and weaknesses in the same class have become research and practice priorities (Canagarajah, 2016). Since contemporary second or foreign language methodology focuses on the relationship between the teacher and learner, "generalised, pre-packaged solutions in the shape of materials and strategies" have little validity (Adamson, 2004, p. 619). One method of teaching cannot be hailed as the best as all methods have some validity (Prabhu, 1990).

1. Integrating individual differences in the classroom setting

As proposed by Ribé (2003), teachers can respond to the diversity among their students convergently and divergently. When adopting the convergent position, the teacher attempts to integrate individual differences with the common learning objective, which is pre-established by the curriculum of the syllabus. In this position, students are provided with different teaching materials, which are “a constellation of tasks” (Candlin & Murphy, 1987, p. 2 cited in Ribé, 2003, p. 126). For example, consider foreign language curricular topics for upper primary school, such as private life and ways of spending free time. Learners can work toward the same learning objective (e.g., they will talk and write about their and their friends’ free time) by using grammatical and lexical structures that are key for the given context. They will work on different tasks depending on their individual differences, including target language competence and cognitive profile. Those who need scaffolding may attempt tasks such as the following:

Instruction: Finish the sentences using the phrases in the box.

I like reading _____.
I like _____.
She likes watching _____.
She likes _____.

riding a bicycle	TV
playing football	books

Others may require less structured support, for example:

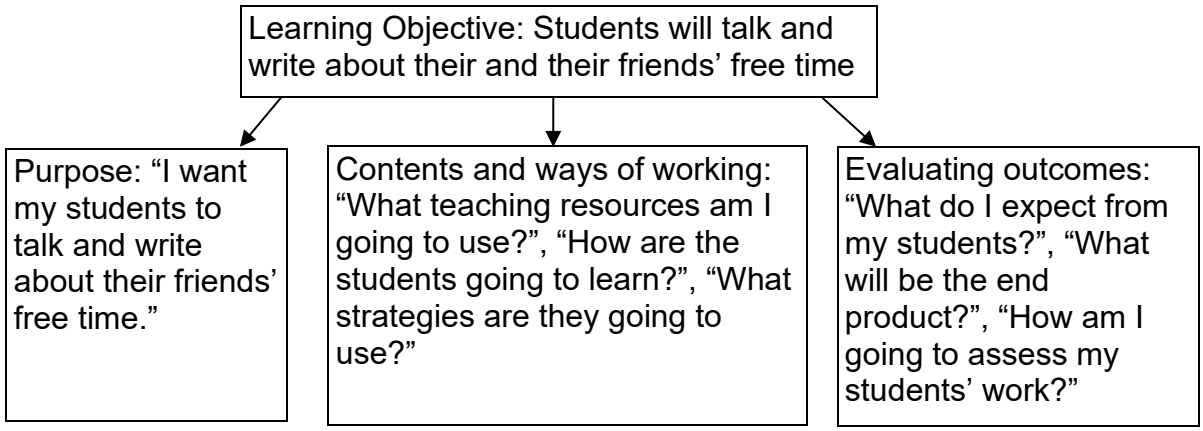
Instruction:
Write at least 3 sentences about what you do in your free time.
Write at least 3 sentences about what your friend does in her/his free time.

To closely monitor the completion of the tasks, the teacher should share success criteria with their students, using specific and measurable goals. For the above, the goals can be as follows: By the end of the lesson, the student will write at least 6 sentences about what he/she and their friend do in their free time using the correct form of the verb like and enjoy + gerund.

Such goals will form grounds for formative assessment. It consists of four steps – identifying the learner's learning gaps, feedback to guide the learner to the next step, developing strategies for self-regulation, and negotiating short-term goals to ensure further learning progress. According to many educators (Benjamin, 2003; Sterna, 2018; Tomlinson, 2001), formative assessment is part of inclusive practices.

The divergence-convergence position aims to develop learning through negotiation and monitoring the process. This negotiation falls under three main areas: establishing the purpose, deciding on contents and ways of working, and evaluating outcomes (Breen & Littlejohn, 2000, p. 294 in Ribé, 2003, p. 127). The following figure illustrates the learning negotiation and monitoring process in the three areas.

Figure 1. Learning negotiation and monitoring process in the divergence-convergence position



When answering these questions, the teacher needs to consider learner autonomy in the learning process. This can be achieved by providing many forms and variations of the classroom activity, with many starting points that represent simultaneous learning avenues or choices. When deciding on the starting point, the teacher should consider learner individual differences to a great extent, including their language proficiency and cognitive profile.

The convergence-divergence position is an expansion of the divergence-convergence position. It considers differences among learners to a broader extent because it creates more space for the learner at the end of the process. The result of the learner's work is "learner-dependent and unpredictable" (Ribé, 2003, p. 128). An

example can be a creative project or a poster. This position is the most favourable approach to meeting students' individual needs. However, it may be difficult to achieve in a pre-established curriculum (Ribé, 2003).

These three positions of integrating individual differences should not be considered separate models. They rather function on a continuum because they are all based on factors such as the increasing complexity of the learning-teaching interaction, a growing need for learner space and negotiation processes, and an inverse frequency of these positions in a real learning context. As observed by Ribé (2003), the convergence position is probably most common in teachers' practice. It relates to the pre-established curriculum, which, to some extent, derives from teaching and learning resources offered by the publishing industry. To turn toward the divergence position and, in this way, consider learners' differences to a broader extent, the teacher should attempt to design new learning tasks and create a more interactive environment. Yet, such a change may be limited due to prescribed teaching materials and fixed examination requirements.

2. New conceptualizations of language aptitude and giftedness

Historically, aptitude was understood through the cognitive perspective, as Carroll and Sapon (1959) proposed in the Modern Language Aptitude Test (MLAT) framework. The test measured the predicted language aptitude considering the learner's cognitive characteristics such as phonemic coding ability, grammatical sensitivity, inductive language learning ability, and rote learning.

The intensive research on individual differences has shifted the perspective on second language aptitude by recognizing its complexity, the specific learning context, and the learner's ultimate attainment (Robinson, 2002; Sternberg, 2002). It is defined as "a conglomerate of individual characteristics that interact dynamically with the situation in which learning takes place" (Kormos, 2013, p. 132). Both cognitive and non-cognitive learners' characteristics are considered. As for the former, undoubtedly, working memory plays a role (Sawyer & Ranta, 2001 in Kormos, 2013, p. 134). It will be important for all stages of language learning, that is, input processing, noticing, integrating new knowledge, and automatization. Input

processing will also require phonological short-term memory, phonological sensitivity, inductive ability, and metalinguistic awareness. The two latter will also be important for integrating new knowledge along with processing. Whereas in the automatization stages, perceptual speed will be assistive along with working memory (Kormos, 2013, p. 142).

Regarding non-cognitive characteristics, affective and conative characteristics (e.g., purpose, will, desire, motivation, personality traits, self-regulation skills) can be good predictors of success in language learning. External factors such as social aspects and the learning setting should not be ignored either (Dörnyei, 2005).

Similarly, giftedness is now understood broadly, encompassing various cognitive and non-cognitive qualities, external factors, and the focus on ultimate attainment (Biedroń & Pawlak, 2016). A gifted foreign language learner, as proposed by Biedroń and Pawlak (2016, pp. 155-156), "is a person who, owing to his/her exceptional inborn gift for learning languages, especially capacious verbal working memory, as well as expertise in L2 learning, is able to learn any foreign language to a near-native level of competence, given proper motivation, time and conducive environment."

The researchers present a number of cases to show how diverse giftedness in language learning operates. For example, the case of Christopher, who is an exceptional individual who has acquired more than 20 languages despite his severe mental retardation or Daniel with congenital child epilepsy and Asperger's syndrome, whose exceptional memory allowed him to acquire several languages (for more information see Biedroń & Pawlak, pp. 163-167).

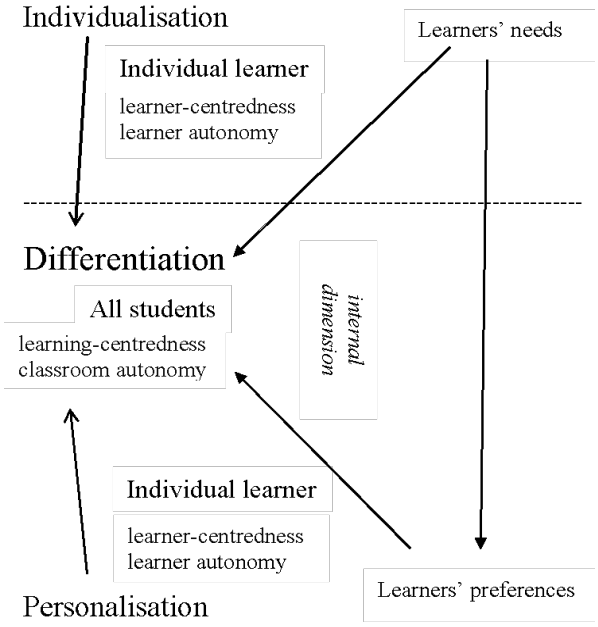
3. Differentiation of language instruction

The research on individual differences in language learning instigated the concept of differentiation (Blaz, 2016; Perk, 2017). It quickly became part of teachers' professional obligation and competence (Perk, 2017), enshrined in the educational legal framework in many countries (Kałdonek-Crnjaković, 2020).

'Differentiation' is associated with the concept of 'individualization' (Hattie, 2009; Janicka, 2018) and 'personalization' (e.g., Griffiths, Keohane, & Ur, 2000;

Waxman, Alford, & Brown, 2013). Although these three concepts are related, they are believed to be distinct (Bray & McClaskey, 2017; Courcier, 2007; Kałdonek-Crnjaković, 2020). Contrary to 'individualization' and 'personalization', 'differentiation' goes beyond the needs of individual learners. Drawing on the new conceptualization of language learner autonomy proposed by Little, Dam and Legenhausen (2017), 'differentiation' is a learning-centred approach that aims at creating classroom autonomy (Kałdonek-Crnjaković, 2020). Yet, it needs to be noted that "Individualisation and personalisation inform differentiation, and differentiation is the realisation of learners' individual needs and preferences in a classroom setting." (Kałdonek-Crnjaković, 2020, p. 177), as illustrated in Figure 2.

Figure 2. The relationship between individualization, personalization, and differentiation. (Kałdonek-Crnjaković, 2020, p. 176)



Tomlinson (2014) suggests that teachers can differentiate through content, process, product, as well as affect and environment. Teachers' actions should be guided by general principles of 'differentiation', which are encouraging and supporting learning environment, quality curriculum, assessment informed by teaching and learning, instruction that responds to student variance, and leading students. Students' readiness, interest, and learning profile, which mark each learner's starting point for learning specific material should be considered to the

broadest extent.

Similarly, but specifically for a language classroom, Convery and Coyle (1993) proposed ‘differentiation’ by ability, interest, outcome, support, task, and text. However, the authors stress that such a strict categorization should be avoided because there are frequent overlaps between categories. For example, potentially, the differentiation by task will overlap with the text and the ability.

Another taxonomy was proposed by Hass in the context of German language learning (2008 in Jaworska 2013, pp. 44-46). It includes the content, which involves the topic of texts and tasks to the text, the learner’s interest, and the way of presenting the learning material of various learning difficulties considering the length of the text and vocabulary use; lesson organisation, that is, using different teaching approaches; media, which concerns the mode of information presentation and new technologies; and goals, that is, learning targets.

Considering the above and the framework of the Universal Design for Learning (UDL), namely that students’ individual needs can be met by differentiating their engagement to boost their motivation for learning, the ways they express what they know, and by presenting information and content in different ways (Hall, Meyer, & Rose, 2012), differentiation can be divided into three main categories:

- by approach – differentiation by process, affect and learning environment (Tomlinson, 2014), by support and ability (Convery & Coyle, 1993), by lesson organization and media (Hass, 2008 in Jaworska, 2013);
- by content/task – differentiation by ability, text, task, interest (Convery & Coyle, 1993), by content (Hass, 2008 in Jaworska, 2013; Tomlinson, 2014); and
- by outcome – that is, differentiation by outcome (Convery & Coyle, 1993), product differentiation (Tomlinson, 2014), and goals (Hass, 2008 in Jaworska, 2013).

To further avoid overlapping in taxonomy, Corno and Snow (1986 cited in Raya & Lamb 2003, p. 19) suggested two-level differentiation to adapt to students’ individual differences. These are ‘macroadaptation’, that is, adaptation that is needed before teaching starts, and ‘microadaptation’, which is required while teaching and is

a result of classroom interaction. As suggested by Raya and Lamb (2003, p. 19), ‘macroadaptation’ is about “a willingness to incorporate a range of approaches”, whereas ‘microadaptation’, following the suggestion made by Convery and Coyle (1993, p. 2), may require distinguishing between core work that is done by the whole class and branching activities that allow practising the same language material in different ways, or extending learning to develop new skills.

‘Microadaptation’, therefore, encompasses differentiation by text, task, and interest as suggested by Convery and Coyle (1993). According to Jaworska (2013), the simplest way of this type of differentiation is by presenting the learning material with various difficulties. It is also necessary to consider the text length and its language features, including the vocabulary unknown to the learner, the complexity of syntax, as well as the learners’ knowledge of the topic presented in the text. Such a type of ‘differentiation’ can be either ‘quantitative’, that is, the number and range of tasks, or ‘qualitative’, that is, the level of difficulty (Jaworska, 2013, p. 45). However, according to Tomlinson (2001, p. 4), differentiated instruction “is more qualitative than quantitative.” It means that giving one student more work and another less does not make ‘differentiation’ effective. What matters is the quality of the assignment with the goal of moving the student’s learning forward.

4. Terminological issues

Addressing and responding “to the diversity of needs” of students (UNESCO, 2005, p. 13) have been named differently in the literature. Common terms include ‘adaptation’, ‘differentiation’, ‘individualisation’, and ‘personalisation’. However, these terms might be understood differently as to the scope of their application considering cultural and social dimensions and translation of the term into a given language.

For example, as warned by Professor Dina Tsagari during the SCALED meeting on 6 September in Warsaw, her Norwegian students had indicated the focus on ‘differences’ and ‘being different’ in the word ‘differentiation’, pointing at negative connotations. In contrast, this term has a rather positive connotation in the Polish language. It is ‘zróżnicowanie’, which can be translated as ‘diversity’, ‘diverseness’, ‘diversification’, or ‘multifariousness’. Considering the use of the term ‘neurodiversity’ in the education context (e.g., Rentenbach, Prislovsky, & Gabriel, 2017) and

research and practice considered from a neurodiversity perspective (Sewell, 2022), the terms that can be coined here are ‘diversification’ and ‘diversifying’.

Yet, considering the principles of Education for All, and especially the sixth goal of the Dakar Framework for Action (UNESCO, 2000), that is, to ‘improve all aspects of the quality of education and ensure the excellence of all so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills.’, ‘diversification’ should be understood within the framework and guidelines of the UDL, which has equity in mind to reduce systemic barriers to learning opportunities and achievements. This can be achieved by providing learners with multiple means of engagement, representation, and action and expression (for more information, see: https://udlguidelines.cast.org/).

5. Instruction for learners with additional language: The example of Polish as an additional language

Learners who arrive in a new country and start attending a mainstream school have a considerably varied proficiency in the target language. Depending on the school system, they attend individual language classes and/or need to attend mainstream subject classes straight after their arrival. Their language development usually goes through several stages.

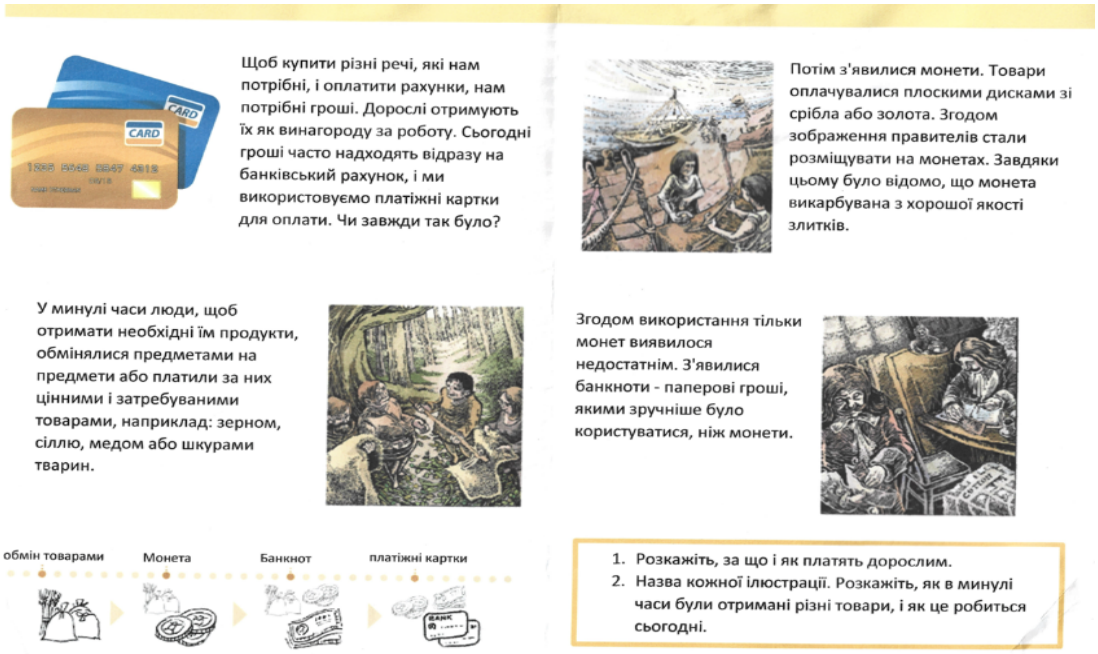
In the early phase, following the theoretical framework proposed by Cummins (1979), they develop basic interpersonal communicative skills (BICS), or conversational fluency in the target language (Cummins, 2008). This stage, which usually lasts up to two years, is very important for the inclusion of newly arrived students in the school system. By developing basic interpersonal communicative skills, these students can establish a relationship with their new schoolmates. In contrast, cognitive academic language proficiency (CALP) refers to the ability to understand and express orally and in writing about the topics relevant to the school curriculum. It usually lasts between five to seven years and is a highly cognitively demanding process for the learner (Cummins, 2008).

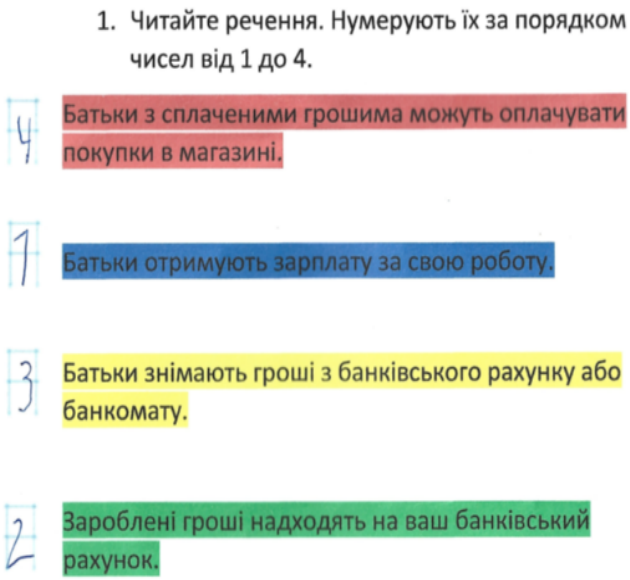
The development of academic skills can be supported in many ways. It is important to distinguish the subject and language aim (Otwinowska-Kasztelanic,

2010). The subject aim focuses on developing the learner's cognitive skills by ensuring access to the learning material, whereas the language aim focuses on developing target language skills with simultaneous support for the development of the heritage language of the learner.

The following document (Figure 3) was prepared by a Polish teacher for newly arrived students from Ukraine (the first grade of Polish primary school). The text was translated into the language of the students, and in this way, access to the learning material was ensured. The aim of developing the learner's cognitive skills was achieved.

Figure 3. An example of learning material for learners with Polish as a second language




1. Читайте речення. Нумерують їх за порядком чисел від 1 до 4.

4 Батьки з сплаченими грошима можуть оплачувати покупки в магазині.

1 Батьки отримують зарплату за свою роботу.

3 Батьки знімають гроші з банківського рахунку або банкомату.

2 Зароблені гроші надходять на ваш банківський рахунок.

However, the above material does not meet the language aim. To meet this aim, the keywords under the text could be provided in Polish, for example. The teacher could also introduce some grammatical elements by, for example, discussing the singular and plurals form of the keywords.

Teachers can support newly arrived students in the Polish school using the JES-PL method (Pamuła-Behrens & Szymańska, 2018). The theoretical framework of the method consists of six pillars, which are the concept of the school education language, the theory of second language acquisition, methods of developing language proficiency, the theory of information processing in the learning process, strategic language learning, self-determination theory. The method is realized in six steps, which include diagnosis of the learner's needs, text adaptation to facilitate the understanding of the learning material, developing subject-related vocabulary, occasional development of grammatical competence through observation and comparisons, developing productive skills through regular practice and models of expression, and meeting others (more information about the method can be found here http://metodajes.pl/)

The authors proposed a step-like approach. However, language, culture and social competencies need to be developed simultaneously. Also, in the first step, the authors mention the need for drafting an individual learning plan referring to students

with special educational needs. Diagnosis needs to be done cautiously and after a considerable time of attending school by the child to distinguish second language challenges from learning difficulties.

6. Conclusions

The diversity of learners' needs is reflected in the new conceptualizations of language aptitude and giftedness, which recognise an equal value and dynamic nature of the learning context, different stages of SLA, and cognitive and non-cognitive factors. Therefore, meeting the needs of today's language learners requires teachers to adopt a flexible approach to teaching and learning and respect learners' choices. A universally designed language classroom encompasses diversification and allows all students to choose what and how they want to learn with the common aim of making them autonomous learners that can regulate their learning process. Consequently, the focus is not on one learner but rather on the learning community created by learners and their teachers.

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Appendix: full text descriptions for figures

Figure 2. The relationship between individualization, personalization, and differentiation. (Kałdonek-Crnjaković, 2020, p. 176)

The diagram presents the relationship between individualisation, personalisation, and differentiation. This relation is shown by means of arrows. Differentiation is informed by individualisation and personalisation (the arrows going from individualisation and personalisation toward differentiation). Similarly, the arrows go from learners' needs and learners' preferences toward differentiation. There is an additional arrow that goes from learners' needs toward learners' preferences, which means that learners' needs inform learners' preferences.

14. Assessing SLLs with SEN: Challenges, opportunities and accommodations

Dina Tsagari – Oslo Metropolitan University

Introduction

In recent years there has been an increase in the population of students who is becoming increasingly culturally and linguistically diverse along with an increase in the numbers of children with Special Educational Needs (SEN) such as Specific Learning Differences (SpLDs), e.g., dyslexia, specific language impairment, attention deficits, as well as children with visual, hearing or physical impairments. This situation, combined also with greater awareness of individual human rights, has led to a bigger demand for teaching as well as testing and assessment provision that can accommodate the needs of special education students (Tsagari & Spanoudis, 2013). The latter is of particular concern to second or foreign language test providers (Taylor, 2012) and teachers (Kormos & Smith, 2012), who are very often faced with the challenge of offering special arrangements (accommodations) to their SEN learners.

This chapter discusses the ethical, research and practical considerations involved in assessing SLLs with SEN and reflects on the effectiveness of assessment accommodations employed in both high-stakes standardized tests and classroom-based. The chapter concludes with making suggestions for practice and research.

1. Some theoretical considerations

The field of language assessment research has witnessed the development of inclusive practices over the last decades primarily motivated by discussions of ethics in the research literature (Taylor & Nordby Chen, 2016; Kormos & Taylor, 2021; Vogt, 2021), in codes of practice (e.g., the ILTA Code of Ethics, 2000 https://www.iltaonline.com/page/CodeofEthics or the EALTA Guidelines for Good Practice, 2006 www.ealta.eu.org/guidelines.htm) and by activities of various professional associations such as the AEA Europe Inclusive Assessment SIG and

the EALTA Equality, Diversity and Inclusion (EDI) and Signed Language Assessment SIGs. As a result, test developers have taken on a social and ethical responsibility to introduce policies for accommodations suitable for SLLs with SEN and to establish equity in assessment contexts. Generally speaking, the aim of accommodations is to “minimise the impact of those test taker attributes that are irrelevant to the construct being measured” (Taylor & Nordby Chen, 2016, p. 378; see also Abedi, 2022). The term accommodation, often related to modification, refers to changes made on the established assessment protocol that often result in deviations from the expected assessment process. Fleurquin (2008) describes accommodations as tools and procedures that provide equity in the assessment for SLLs with SEN. Arras et al. (2013) also stress that linguistic changes refer to simplification of language in the test or changes in content which “have an impact on difficulty” (ibid, p. 276; see also Li & Suen, 2012; Schissel, 2010; Thurlow et al., 2006). Test modifications in particular qualify as alterations in the construct being tested and are likely to impact the validity of a test. Abedi (2010, 2014, 2022). Fulcher and Davidson (2007), Taylor (2012) and Kormos and Taylor (2021) also provide insightful discussion of the ethics, principles and practice of accommodations in relation to both tests of content knowledge and tests of language proficiency (see also Kormos & Kontra, 2008; Kormos & Smith, 2012; Martin, 2009).

The field highlights that assessment accommodations should be constructed and administered in the most flexible way possible avoiding retrofitting adaptations that are challenging to implement and time consuming (Case, 2003). The application of Universal Design for Learning principles to assessment seems promising and has been proposed by scholars even for large-scale assessment (e.g., Thompson et al., 2002). Thompson et al. (2002) match elements of Universal Design principles with Universally Design Assessment, as shown in Table 1.

Overall, assessments need to be inclusive of the whole learner group, and the construct assessed would have to be clearly defined. Simple, concise and clear instructions are important as these are closely connected to the readability and comprehensibility of the sources of information for the presentation that are available to all learners, not just SLL with SEN. Furthermore, even though the principle of accommodations is easily achievable in classroom-based language assessment

contexts attempts have been made to accommodate student needs for large-scale assessment (see next section).

Table 1: Principles of Universal Design and elements of universally designed assessments (Thompson et al., 2002)

Universal Design Principle	Elements of Universally Designed Assessments
Equitable Use – design is useful and marketable to people with diverse abilities.	Reflected in all elements.
Flexibility in Use – design accommodates a wide range of individual preferences and abilities.	Especially reflected in inclusive assessment population, accessible, non-biased items, amenable to accommodations, and maximum readability and comprehensibility.
Simple and Intuitive Use – design is easy to understand, regardless of user's experience, knowledge, language skills, or current concentration level.	Especially reflected in simple, clear, intuitive instructions and procedures, maximum readability and comprehensibility, and maximum legibility.
Perceptible Information – design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.	Especially reflected in amenable to accommodations, simple, clear, intuitive instructions and procedures, and maximum legibility.
Tolerance for Error – design can be sed efficiently and comfortably and with a minimum of fatigue.	Reflected in precisely defined constructs and simple, clear, intuitive instructions and procedures.
Low Physical Effort – design can be used efficiently and comfortably and with a minimum of fatigue.	Primarily reflected in maximum legibility.
Size and Space for Approach and Use – appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.	Primarily reflected in amenable to accommodations, and maximum legibility.

2. Accommodations in high-stakes standardized language tests

In a historical review of test development for test takers with disabilities, Taylor and Khalifa (2013) note that in the early 1990s, test developers modified tests upon request.

Classifications of accommodations and modifications have been taken up and adapted by Kormos and Smith (2012, p. 152), Kormos (2017, p. 101) and Nijakowska (2021), with a focus on accommodations. These can be classified into accommodations in presentation format, in response format, in timing and accommodations in setting. Table 2 presents the most often used accommodations in language assessment (not an exhaustive categorization).

Table 2: Types of accommodations (adapted from Kormos & Smith, 2012; Nijakowska, 2021)

Accommodations in presentation format	Accommodations in response format	Accommodations in timing	Accommodations in setting
oral reading large print / large font size and spacing magnification devices assistive technology, e.g., using a screen reader transparent coloured overlays windows limiting the text area Braille	using a word processor using a scribe answering comprehension questions orally rather than in writing responding directly in the test booklet rather than on an answer sheet using organizational devices such as spelling assistive devices, visual organisers	extended time multiple or frequent supervised breaks change in testing schedule testing over multiple days	administering the test individually testing in a small group testing in a separate room adjusting the lighting reducing noise, providing noise buffers (noise-cancelling headphones, earplugs) making location accessible for persons with reduced mobility (e.g. wheelchair users)

An overview of accommodations frequently used in high-stakes standardised tests in the United States is presented in Taylor and Nordby Chen (2016, p. 383) – see Table 3. These accommodations have now become well-established traditions and are the first step towards supporting SLLs with SEN in various high-stakes exams, e.g., university entrance examinations (e.g., Georgakis & Hatzidakis, 2016; Tripolitakis, 2016).

Table 3. Categories of special needs and typical accommodations (adapted from Taylor and Nordby Chen, 2016, pp. 383-384)

For test takers with	Presentation: text	Presentation: audio	Response conventions	Timing and scheduling	Setting
Visual impairments	large print colored paper magnifier		amanuensis or scribe enlarged score sheets	extended response time	larger desk surface special lighting
	braille graphics adapted to text reader screen reader		amanuensis keyboard (braille or other)	extended response time additional breaks	larger desk surface
Hearing impairments		amplification headphones face-to-face video mediated sign language interpreter for instructions	adjust paired speaking test format	extended response time additional breaks	seating near audio source
Learning difficulties (dyslexia; dysorthogra-phia; ADHD)	colored test books or overlays text marking device, such as a ruler		keyboard scribe	extended response time additional breaks	seating away from distraction
Physical challenges (paralysis; diabetes; broken arms)			amanuensis or scribe keyboard	extended response time additional breaks	special seating or furniture

Test developers, now, have gained substantial experience in test design and tests are available when needed, and applicable for larger groups of test takers. Thus, experience in test design seems to be an important key in the selection of

appropriate accommodations and the actual modification of a test. Recently a systematic approach of “pre-modified tests” (Taylor & Khalifa, 2013, p, 239) has been introduced which can be provided whenever applied for.

Well-known international language examination boards offer accommodations to their test-takers, evaluators, disability services providers, and other groups, e.g., Educational Testing System (ETS), Cambridge English Language Assessment, Pearson, etc. Interestingly examination boards operating locally such as the Bergen Test of Norwegian also offer basic accommodations, the National Foreign Language Exam System (KPG), University of Athens.

The above literature shows that research in high-stake tests and SLLs with SEN is ongoing and very often undertaken by assessment institutions. However, a significant issue is how fairness in the assessment of the second-language competence of SLLs with SEN can be ensured. Also, the needs of these groups of SLLs especially in the case high-stakes exams, such as university admissions, and job recruitment procedures, serve as gatekeepers. Even though the results of such assessment procedures affect the lives of so many students in Europe (Georgakis & Hatzidakis, 2016; Skoundi, 2016; Tripolitakis, 2016; Tsagari, 2016) and elsewhere unfortunately, insufficient consideration has been given to such assessment contexts and little research has been conducted so far.

3. Classroom-based assessment

While the importance of valid high-stakes tests for students with SEN is unquestionable, language assessment in classroom-based contexts (e.g., progression to a higher grade) is equally important with serious consequences for learners. Kormos and Taylor (2021:419) propose that for assessment taking place in classrooms, especially when classroom tests are designed and administered, it is important for teachers to allow sufficient time for all students to complete them where time pressure is not part of the construct to be assessed. Also, multi-modal presentation of test instructions might help students understand how to perform the test tasks. In terms of formatting, the visual layout of tests should follow accessibility guidelines. Students with SEN should also display their knowledge better in tasks that have selected response formats. Finally, previewing questions before listening

input can help students with SEN to focus their attention on relevant parts of the text to be comprehended.

Various other practical suggestions have been made in the literature. The following list (not exhaustive) offers useful and practical suggestions for accommodating SLL students with SEN and ensuring fairness in language classrooms. Overall, when conducting classroom assessment, teachers need to:

- Ensure that instructions of tasks and activities are simple, clear and do not require multiple tasks
- Shorten all sentences in texts and turn passive verbs into active
- Ensure that you spread out the text so that it is less dense on the page
- Change fonts or use more friendly fonts, e.g., Century Gothic (http://opendyslexic.org)
- Key points can be highlighted in the form of bulleted list
- Use visual aids and headings/subheadings
- Allow coloured filters e.g., overlays
- Monitor learner's work
- Provide additional time, if requested
- Allow use of laptops or scribe if necessary
- Avoid tasks where answers have to be transferred from page to page
- Ensure questions are logical
- Avoid double negatives
- Avoid metaphor or allusion in questions
- Pay attention to problems with T/F (Don't know/Doesn't say) items
- Avoid open ended questions involving abstract or incomplete instructions
- Use English dictionaries/glossary
- Use bilingual dictionaries/glossaries
- Use computer testing

According to British Dyslexia Association, 'the use of cream or pastel coloured backgrounds can mitigate this difficulty as can coloured filters either as an overlay or as tinted reading glasses' (http://www.bdadyslexia.org.uk/dyslexic/eyes-and-dyslexia); however, the use of fancy fonts or intense and complex backgrounds

produce obstacles to reading (Jameson, 1998). Students can copy handouts on to tinted paper and they can also change fore- and background colours on their computers (Jameson, 2006).

Erbeli and Pižorn (2013) also propose a range of assessment accommodations and modifications for groups of students with *Specific Reading Differences* (SRDs), e.g.,

- Use more than one type of assessment.
- Maintain a close match between instructional and assessment accommodations.
- Ask students to produce short poetry presentations, dramatic performances, letter groups and words on lists for beginning readers.
- Assess students' fluency on the spot (every day) rather than at intervals (once a month).
- Modify the timing of assessment tasks: ask students with SRDs to show their effort at daily vocabulary quizzes.
- Allows students with SRDs to read only shorter texts simplified written input, textual input enhancement, and glossing.
- When assessing grammar, students should be given exercises that support multi-sensory structured learning, such as modified grammatical exercises including the use of drills.
- When assessing orthographic skills in class, assessment can include word searches, anagrams and peer proofreading. If spelling problems nevertheless remain, assessment modifications could include disregarding spelling errors, using mnemonic aids for spelling or using spellcheckers.

Kormos and Smith (2012), Smith (2013), Brannen and Kozlowska (2013), D'Este and Ludbrook (2013), Banerjee et al. (2013) and Fairbairn and Spiby (2019) make similar suggestions for classroom-based assessment.

However, Nijakowska et al. (2016) urge that certain questions need to be considered when choosing and using accommodations for assessment purposes, e.g.,

- How do the accommodations influence the validity of the assessment?

- What are the student's strengths and needs resulting from their SEN?
- Does the student need accommodations?
- What accommodations increase the students' access to (instruction and) assessment?

Questions to consider in selecting and designing assessment tasks for students with SEN are suggested by Kormos and Smith (2012, p.160):

- Does the task measure the targeted skill or knowledge?
- Is the task enjoyable and motivating?
- Is the task relevant for the students?
- Can the task be marked reliably?
- What kind of difficulties might students with SEN experience when working the assessment task?
- Is the time needed to complete the task sufficient for students with SEN?
- Are the instructions clear?
- Is the level of difficulty appropriate?

Formative assessment methods such as peer assessment or self-assessment could be combined with teacher assessment for SLL students with SEN, and some of the UDL principles could be applied to the assessment situation supported by constructive feedback (see Vogt, 2021).

4. Considerations of assessment accommodations

There are many variables that need to be considered when assessment accommodations are provided, and it is hard to ensure that the balance between reliability and validity is managed effectively. As SLL students with SEN require a specific approach to foreign language learning (Kormos & Smith, 2012), adequate knowledge and training for effective instruction is a pre-requisite for teachers to promote literacy attainment for respective learners. This emphasizes the important role of supportive learning environments in schools and effective training of teachers.

Teachers also face various assessment challenges, e.g., how to design language tests or grade the performance of SLLs with SEN or how to provide adequate accommodations and pre-service and in-service teacher training of

teachers in education is still not adequate. Research carried out by Nijakowska (2014) found that pre- and in-service English language teachers display an apparent lack of enthusiasm and relative reluctance to incorporate research-based assessment methods and instruments into their teaching and that teacher training is not yet regularly offered or easily accessible. Teachers, however, stated a clear and strong need and eagerness in learning more about learners with SpLDs, e.g., dyslexia and receiving training which is tailor- made for their specific classroom purposes (Nijakowksa, 2014). This shows that teachers, by all means, are willing to take on the task to accommodate learners with dyslexia in their classrooms for teaching and assessment purposes (see also Lemperou *et al.,* 2011; Rontou, 2012, Gustavsson, 2013; Loumbourdi & Kracic, 2013). Researchers (Vellutino *et al.*, 2004) also stress the need of effective educational programs and training for language teachers to become experts in the field of reading strategies to provide their learners with SEN efficient and sustainable support (Nijakowska, Tsagari & Spanoudis, 2018; 2020).

The constant rise of the number of children with diagnosed SEN in mainstream education has changed educational requirements in the foreign language classroom too (Taylor & Khalifa 2013, pp. 229-230). Even though foreign teachers play a crucial role, the access to adequate foreign language learning for SLLs with SEN requires the contribution of important stakeholders such as educational psychologists, authorities and researchers towards the implementation of appropriate measures (Rontou, 2012). These stakeholders are ultimately connected to the field of education and disabilities, and have a strong impact on the successful work of language teachers.

5. Future directions in the field of assessment of SLLs with SEN

The following suggestions are the result of the reflection on current issues in the field of assessment of SLL students with SEN. They may not be exhaustive but indicate the several points for future research.

Empirical research is required to evaluate general assessment practices in schools and high-stake tests, to provide “targeted guidance” (Taylor & Khalifa 2013,

p. 247) for language teachers in test development and evaluation, and the impact of pre-service and in-service.

Much more research is needed to provide the basis of clearer definitions, classifications and identification of SEN in the SLL population that expand on our current classification systems. Future researchers could replicate SEN studies that have been conducted among monolingual students. Data from both cross-sectional and longitudinal studies should be used in order to develop a classification system that can provide developmental language and cognitive benchmarks and simplify the identification procedures of SEN children. It is also important to develop identification strategies that can improve understanding of comorbid conditions such as attention deficits and intellectual disabilities.

In tandem with designing appropriate accommodations for standardized accountability assessments, research should also provide empirical evidence that assessment practices for SLLs with learning and other disabilities are appropriate and work well (Abedi *et al*., 2004). Taylor and Norby Chen (2016) also suggest that research need to be conducted in the effects of accommodations on the underlying construct being assessed, on the role of assistive technology in testing accommodations, in the interpretation of scores resulting from accommodated tests and in designing accurate and valid measures of SLLs with SEN (see also Kormos, 2013)

The field would also benefit from more qualitative research in students' test-preparation and test-taking experiences and strategies. Research that aims to present students' and other stakeholders' perspectives, and which adopts an insider's perspective, needs also to be conducted.

Additionally, investigations on the implementation and impact of the use of Action Research methods (Burns, 2009; Afantiti Lamprianou, 2015) in classroom-based assessment for SLLs with SEN will contribute to the enhancement of assessment literacy of teachers and support research in the field.

Research in educational policies and guidelines set by authorities for SEN students needs to explore the extent to which policies and regulations for classroom-based assessment of such students promote equity in education. Also,

comprehensibility and feasibility of policies and regulations for language teachers and school administration, and the extent to which policies and regulations support or hinder language teachers and school administration with regard to the execution of classroom-based assessment.

Finally, research should be carried out with regard to specific conditions that are necessary to promote collaboration between an educational advisor, psychologists, school and authorities to enhance the process of adequate language instruction and assessment.

6. Conclusion

This chapter has discussed important achievements in the field of language assessment for students with SEN and raised important questions that demonstrate the beginning of a new era of conscious epistemological traffic between various disciplines. Hopefully this chapter contributes to recent discussions about the assessment of SLL students with learning and other disabilities and offers a springboard for discussion that can help meet the assessment needs of these special groups of second language learning in our increasingly globalised and multicultural world.

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