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TRAINING PROGRAMME

Topic area II: Universal Design in the distance learning in the context of the needs of learners with diverse learning needs

Topic: UD and UDL frameworks – implications for the distance learning

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1. INFORMATION ABOUT THE TRAINING

1.1. Training needs analysis

The development of more and more effective systems of inclusive education is not only a necessity but also a challenge for all European countries. It has been noted that the inclusive education allows for overcoming numerous differences between learners. It is possible not because of the differentiation of measures oriented on some groups, but rather thanks to the extension of possibilities available for everyone (Spratt, Florian 2014). In the model view, the scientific environment available for every learner is the environment in which every individual, regardless of his/her possibilities or handicaps, has an equal chance of access to knowledge and participation in the educational process, as well as the adjusted assessment. The assumption that access to education for every student is not a possibility, but rather his/her inalienable right, may help us to create educational environments that are more accessible for the extending number of learners.

The research shows that most teachers in most countries in the world are in favour of inclusive education. They claim that people with disabilities and special educational needs have a right to participate in the educational process together with their peers. At the same time, in many countries, including Poland, teachers consider themselves not to be qualified properly to work with students with disabilities and special educational needs. Moreover, they maintain that the schools are not prepared to facilitate such students. Their doubts are also connected with other areas: architectural barriers, the adaptation of study programmes, peer relations, and coping with the differentiated needs and possibilities of students by teachers. The solution seems to be the Universal Design which, in the context of education, is understood as a framework, or to put it in practical terms, the guidelines concerning the organisation of the teaching process. It aims to satisfy the diverse needs of learners and reduce the barriers hindering them from the actual integration into mainstream learning (Black et al. 2014, Anderson 2019).

The UDL framework is considered by the school and academic teachers to be the approach based on so-called “good practice”. It can be easily worked out by the implementation of differentiated active learning strategies, universal study programme design, and appropriate



realisation methods. Thus, the present training on the Universal Design meets the demands of the students of pedagogy programmes, schoolteachers, tutors, therapists, and academic teachers. It aims at indicating the possible solutions connected with the organisation of the didactic process that could facilitate access to education for more and more diverse needs of learners.

1.2. Learning objectives

Main objective

To equip the training participants with the knowledge concerning the Universal Design (UD) and Universal Design for Learning (UDL) frameworks and the possibilities of their implementation in distant learning.

Detailed objectives

The training participants shall:

in terms of knowledge:

- know terms connected with the universal design and its frameworks concerning adjustment, accessibility, and efficient improvements;
- know the assumptions and principles of implementation of the UD and UDL frameworks, as well as the strategies of promotion of active participation and motivation in the contemporary diverse groups of learners, also in the distant learning environment;
- know the legal frameworks of accessibility and Universal Design.

in terms of skills:

- be able to implement the principles of UD and UDL for methodical/didactic solutions they design (educational products/services);
- be able to indicate various rational accommodation elements aiming at the elimination of architectural, digital, and communicational barriers;
- be able to use the guidelines, strategies, and techniques of the implementation of UD and UDL to improve the didactic process design and support the high level of involvement and achievements of all the learners;
- successfully argue for the suggested solutions.



in terms of attitudes:

- be aware of the necessity to consider the needs of different types of users in the didactic/methodical solutions they design (educational products/services);
- be aware of the role that Universal Design plays in terms of ensuring high-quality education available for everyone;
- be willing to support persons with diverse educational needs in terms of including them in educational and social life.

1.3. The target group of the training

The training is intended for the academic teachers, primary and secondary school teachers, students preparing to work with children, adolescents, and adults, as well as post-graduate students who are willing to increase their methodical competencies. The target group of the training are people who wish to develop their ability to employ the universal design framework in distant learning.

1.4. The form of training implementation

In order to ensure the effectiveness of the training, it is recommended to implement it in a training group including from 12 to 18 people. However, the instructor may adapt the programme for the conditions of their own training group. The training has been designed to be implemented in the form of distant learning, but the in-person form can also be applied. It has been assumed that the training in the inline mode shall be implemented via Moodle Learning Platform or Microsoft Teams.

1.5. Duration time

The duration of the training is 4 hours and 30 minutes.

2. TRAINING PROGRAMME

2.1. The learning contents

During the training, participants gain knowledge concerning the Universal Design (UD), the frameworks of the Universal Design for Learning (UDL) and the possibilities of using them in distant learning.

The discussed problems shall focus on three subject areas concerning the notion of universality in designing the environment available for everyone that follow the rule of “equal opportunities”.

The first subject area shall revolve around the frameworks of Universal Design – its pioneer and visionary, notions and definitions, objectives, and rules that should be applied in creating universal projects, as well as the analysis of its practical implementation. The legal frameworks of accessibility and reasonable accommodation are also discussed in this section.

The second area relates to the methodical aspect of the Universal Design implemented in education.

The third subject area constitutes the guidelines concerning the implementation of the assumptions of the UDL in distance learning.

2.2. The training schedule

Subject areas	Duration time
1. <i>Universal design</i> (UD) - from theory to practice	1,5 h
2. Frameworks of <i>Universal design for learning</i> (UDL)	1,5 h
3. UDL in the distance learning	1,5 h



2.3. Didactic means and materials

Means and materials used:

- Computer with the Internet connection
- Moodle Learning Platform
- Microsoft Teams
- the Internet browsers (Google Chrome/Firefox)
- an online whiteboard enabling cooperation (e.g., Miro)
- didactic materials (1-29)
- YouTube platform

2.4. Teaching methods

- brainstorming
- mind map
- free association method
- open-ended sentences
- practical exercises
- discussion
- lecture
- explanation

2.5. Recommended references and Internet sources

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3. LESSON PLANS

3.1. Universal Design (UD) – from theory to practice

Detailed objectives:

- participants know the frameworks, creators, objectives, and principles of the Universal Design;
- participants are able to indicate and discuss seven principles of the Universal Design;
- participants are able to identify and explain differences between the adjustment and Universal Design;
- participants are able to identify and describe various mechanisms of reasonable accommodation in order to eliminate the architectural, digital, and communication barriers;
- participants cooperate with each other;
- participants develop their creativity.

Task 1. What is *Universal Design*?

Didactic methods:

- brainstorming
- free association method
- discussion
- explanation
- informative lecture

Duration time: 30 min.

Didactic means and materials:

- computer with the Internet access, loudspeaker, and microphone
- access to Moodle Learning Platform/MS Teams
- didactic materials (1-6)



Course of training:

1. Participants log into the Moodle Platform, module I in Big Blue Button service/MS Teams:
What is *Universal design*?
2. The instructor greets the participants and presents the subject of the training, as well as its objectives.
3. The instructor asks participants for the associations with the term “universal” (they can say their answers or write them in the chat box or “shared notes” section) (Question: “*Universal*” – *what does it mean?*). The instructor also asks the participants to give ideas to exemplify their associations (products, services, situations, solutions, types of behaviour, etc.)
4. Participants of the training share their associations, knowledge, and experience concerning the use of universal design.
5. The instructor analyses and sums up the answers of participants and chooses those of them that may illustrate or exemplify the notions discussed during the training.
6. The instructor refers to the answers of participants to present the frameworks of *Universal Design* – its creator, definition, and semantic analysis, as well as various terms used around the world to describe this notion and their interpretation (didactic materials nr 1-4).
7. The instructor points out that universal design is frequently associated with adapting the space to the needs of persons with disabilities. He/she uses didactic materials nr 5 to explain the difference between those two approaches.
8. The instructor explains the dependency between accessibility and reasonable accommodation – he/she discusses examples and solutions basing on didactic materials nr 6.
9. The instructor asks participants to provide other solutions (their own ideas), that are the implementation of reasonable accommodation (they can say their answers or write them in the chat box or “shared notes” section).



Task 2. Objectives and principles of the *Universal Design* and their implementation

Didactic methods:

- free association method
- discussion
- explanation
- video material

Duration time: 30 min.

Didactic means and materials:

- computer with the Internet access
- Moodle Learning Platform/MS Teams,
- didactic materials 7 and 8

Course of training:

1. The instructor explains to participants that the universal design, similarly to other ideas resulting from the diagnosed needs of its target group, has clearly stated objectives and principles. They can be implemented in creating any type of product, service, or environment.
2. The instructor presents and discusses the aims of the *Universal Design* developed by the scientists from the IDEA Center (didactic materials nr 7).
3. The instructor discusses the presented solutions with the participants. He/she points out the target groups of each solution (*Universal Design – for whom?* – didactic materials nr 9).



Task 3. Universal Design in practice – based on the animated film “Budynek dostępny” (“Accessible building”)

Didactic methods:

- working with an instructional video
- practical exercises
- discussion

Duration time: 25 min.

Didactic means and materials:

- computer with the Internet access
- Moodle Learning Platform/MS Teams
- didactic materials nr 10

Course of training:

1. The instructor randomly divides the participants into 5 groups. Each group is assigned one task from didactic materials nr 10.
2. The instructor presents the „Budynek dostępny” (“Accessible building”) animation to the participants (link: <https://youtu.be/YreZuKAO08I>).
3. After watching the video, participants work on their designated tasks in groups for about 5-7 minutes.
4. When the time is up, the instructor asks one person from each group to present the outcomes of their work.
5. The instructor sums up the task (paying attention to the *Hint for the instructor* in didactic materials nr 10).



Task 4. Conclusions

Didactic methods:

- open-ended sentences

Duration time: 5-7 min.

Didactic means and materials: didactic materials nr 11

Course of training:

1. The instructor pastes sentences into the chat box and gives the instruction:
“Think of the first association you have for each of the sentences and finish them according to your own thoughts.”
2. Participants write their own comments finishing the sentences using their first associations.
3. The instructor sums up the training, everyone may share their thoughts. Everyone signs off.

Task 5. Universal Design – policies and regulations (*optional module*)¹

Didactic methods:

- lecture
- discussion

- explanation

Duration time: 30 min.

Didactic means and materials:

- computer with the Internet access, loudspeaker, and microphone,
- access to Moodle Learning Platform/MS Teams,
- didactic materials nr 12

¹ To be used if the organiser/the instructor can devote more time to the training

Course of training:

1. The instructor presents the regulations concerning equality, accessibility, and universal design (didactic materials nr 12).

Note: *due to the differences in the process of implementation of the discussed regulations in respective European countries the instructor should complement the presented data (didactic materials nr 12, point 3) with the information concerning the country in which the training takes place.*

2. The group discusses the actual situation of the persons with differentiated needs in the context of the discussed regulations.
3. Conclusions and signing off the meeting.



3.2. Frameworks of the *Universal Design for Learning (UDL)*

Detailed objectives:

- participants know the idea of diversity in learning and are able to explain its meaning in designing the didactic process;
- participants are able to identify the meaning of the Universal Design for Learning in the context of inclusive education;
- participants understand the basic principles of the UDL and can apply them in designing their own classes;
- participants are aware of the individual and social benefits of the Universal Design for Learning and the possibilities of using it in inclusive education.

Task 1. Diversity in the learning process

Didactic methods:

- presentation
- explanation
- discussion

Duration time: 30 min.

Didactic means and materials:

- computer with the Internet access, loudspeaker, and microphone
- access to Moodle Learning Platform/MS Teams
- didactic materials 13

Course of training:

1. Participants log into the Moodle Platform, module II in Big Blue Button service/MS Teams: Frameworks of the *Universal Design for learning*
2. The instructor greets participants and presents the subject of the training.



3. The instructor explains the notion of variability as a feature of the nervous system (didactic materials nr 13, point 1)
4. The instructor explains the notion of diversity in the learning process (didactic materials nr 13, point 2)
5. The instructor raises the question “Why should we consider diversity in learning?” and asks participants to write their answers in the chatbox. The answers might be used later during the training in the discussion concerning the video *Variability Matters*.
6. The instructor introduces the subject of Todd Rose’s speech and pays participants attention to the myth of “an average student” and its impact on education (didactic materials 13, point 3).
7. The instructor presents the video – Tedd Rose *Variability Matters* (the language of the video is English so the instructor should choose the option of the automatic translation to the native language of the participants in the settings).
8. Discussion about the video – the instructor randomly divides participants into 2 or 3 groups by assigning them to work in separate meeting rooms. Participants’ task is to share their impressions and thoughts concerning the contents of the video. Time for the group work – 5 minutes.
9. The instructor asks participants to share their thoughts. He/she refers to the questions from didactic materials nr 13, point 3, as well as the participants’ answers to the question “*Why should we consider diversity in learning?*”
10. The instructor concludes the discussion.

Task 2. What is UDL? – definitions, principles, and guidelines for universal design of classes

Didactic methods:

- lecture
- practical exercises/SWOT Analysis technique
- discussion

Duration time: 50 min.



Didactic means and materials:

- computer with the Internet access, loudspeaker, and microphone
- access to Moodle Learning Platform/MS Teams
- access to Miro Platform/Google (optional)
- didactic materials (14-20)

Course of training:

1. The instructor discusses the frameworks of UDL beginning with the idea of universal design as a way of fulfilling diversified educational needs on the example of the Rubik's Cube (didactic materials nr 14). He/she presents and describes each of the versions of the cube (pictures 1-5). The instructor should take breaks between introducing the consecutive modifications to the cube.
2. The instructor discusses the frameworks of UDL, presents its definition, and its beginnings (didactic materials nr 15).
3. The instructor presents the principles of UDL and the guidelines for their use (didactic materials nr 16 and 17).
4. The instructor encourages the participants to look for examples of practical implementation of UDL frameworks in the environment of school – free statements (so-called good practice).
5. The instructor discusses the implementation of UDL for the selected components of a lesson and the cycle of designing classes with the use of UDL (didactic materials nr 18 and 19).
6. Optional (if the instructor is able to devote to this part more time than it is included on the schedule): The instructor, together with the participants, analyses the actual chances of implementing the UDL frameworks in the workplace of participants (school/university/institution). To perform this task, the instructor may use the Miro Platform. He/she needs to sign up to the platform beforehand and prepare the template for the SWOT Analysis technique for the participants (name it "SWOT Analysis Template"). He/she may also use the didactic materials nr 20 and share them with the participants as an editable Google Disc document so that they can work together.



Task 3. Conclusions

Didactic methods:

- diagnostic test
- discussion

Duration time: 10 min.

Didactic means and materials:

- computer with the Internet access, loudspeaker, and microphone
- access to Moodle Learning Platform/MS Teams
- Google Form (with pre-prepared test concerning UDL – didactic materials nr 21)

Course of training:

1. The instructor sums up the discussed materials and the conclusions of the group work pointing out the crucial elements of the Universal Design for Learning (UDL) frameworks and their implementation in the workplace of the training participants.
2. The instructor presents a video prepared by CAST entitled „*UDL At A Glance*” to summarize the learning contents. The video is available here: <https://youtu.be/bDvKnY0q6e4/>
3. After the presentation of the video, the instructor asks participants to fill in the test concerning UDL (didactic materials nr 21) (duration time – 5 minutes)
4. The instructor discusses the results of the test and answers the questions of the participants.

3.3. The UDL frameworks in the distance learning

Detailed objectives:

- participants know the guidelines for designing classes in the distant learning according to the frameworks of UDL;
- participants know the guidelines for the Universal Design of available didactic materials for the distant learning;
- participants are able to indicate the online tools that facilitate distant learning;
- participants are able to analyse the online course considering the UDL principles;
- participants are able to provide arguments for the use of the solutions that they have proposed;
- participants are aware of the role of the Universal Design for distant learning in the process of providing high-quality education based on the rules of equality.

Task 1. How to design a class in distant learning according to the UDL frameworks?

Didactic methods:

- lecture
- explanation
- discussion
- brainstorming
- practical exercises

Duration time: 45 min.

Didactic means and materials:

- computer with the Internet access, loudspeaker, and microphone,
- access to Moodle Learning Platform/MS Teams,
- didactic materials nr 22 – 24

Course of training:

1. Participants log into Moodle Learning Platform/MS Teams, module III: *The UDL frameworks in distant learning*.
2. The instructor greets participants of the training and gives its subject.
3. The instructor explains the guidelines for designing classes for distant learning according to the UDL principles (didactic materials nr 22).
4. The instructor encourages participants to discuss the similarities and differences between designing classes for in-person and distant learning. Participants can say their ideas out loud or write them in the “shared notes” section.
5. The instructor describes 10 steps in the universal design of courses conducted in distant learning (didactic materials nr 23 and 24). He/she gives examples and presents the guidelines and solutions for preparing accessible didactic materials.
6. Referring to the suggested *discussion board guidelines*, the instructor asks participants for their ideas for additional pieces of advice (brainstorming based on participants’ own practice and experience of working with various groups of learners).
7. The instructor shares the photo of a carrot from didactic materials nr 24 and gives an example of an alternative description of the photo. Then, the instructor shares a photo of his/her choice.
8. The instructor randomly divides participants into three groups. He/she asks them to prepare the alternative text to describe the shared photo.
9. Participants work in groups in separate rooms of the meeting so that they can talk to each other while preparing the task. The leader, chosen by the group, writes the alternative text down and submits it in the “shared notes” section.
10. After completing the task, the instructor discusses it with the participants.



Task 2. Digital tools in the implementation of UDL frameworks

Didactic methods:

- lecture
- explanation

Duration time: 30 min.

Didactic means and materials:

- computer with the Internet access, loudspeaker, and microphone
- access to Moodle Learning Platform/MS Teams,
- didactic materials nr 25 - 28

Course of training:

1. The instructor describes and presents digital tools in the implementation of the UDL principles and ideas for their usage in distant learning (didactic materials nr 25, 26 and 27).
2. The instructor presents examples of UDL implementation in distant teaching and learning (didactic materials nr 28).
3. The instructor asks the participants of the training to share their own ideas, methods, tools they use, or experiences in using digital tools for the distant work.

Task 3. Analysis of the online course considering the UDL principles

Didactic methods:

- assessment
- discussing

Duration time: 15 min.



Didactic means and materials:

- computer with the internet access, loudspeaker, and microphone,
- access to Moodle Learning Platform/MS Teams,
- Google Form with the *UDL online course checklist* (prepared by the instructor) – didactic materials nr 29

Course of training:

1. The instructor shares the link to the *UDL online course checklist* in the chatbox. He/she asks participants to analyse their own courses/classes conducted in the distant mode.

Exemplary instruction for the task:

It's time to assess one of your own classes or courses conducted online, taking into consideration the UDL frameworks. Choose a module of the course or a class that you have designed and conducted. You can use the present checklist. Take a moment to consider the following:

Pay attention to the points in which you have chosen “No” or “Not sure” options.

- Do they relate to one or more of the UDL principles?
 - Reflect on how you can change your class or course so that your answer would be “Yes” on those points.
2. The instructor discusses the self-analyses with participants, as well as answers their questions and clarifies their doubts.
 3. The instructor concludes the meeting.



4. DIDACTIC MATERIALS

4.1. Didactic materials - 1

What is Universal Design?

A Process:

- Universal design, when used in conversation as a verb, is a process of designing something to be functional as possible for as many people as possible.

An Outcome:

- Universal design, when used as a noun, is an outcome of a design process, indicating that something is as functional as possible for as many people as possible.

Source: <https://universaldesign.org/definition>. [accessed: 19.01.2022]

Universal Design (UD) is an approach to design that increases the potential for developing a better quality of life for a wide range of individuals. **It is a design process** that enables and empowers a diverse population by improving human performance, health and wellness, and social participation (Steinfeld and Maisel, 2012).

It creates products, systems, and environments to be as usable as possible by as many people as possible regardless of age, ability, or situation.

Universal design (UD) is an enduring design approach grounded in the belief that **the broad range of human ability is ordinary, not special**. Supported by the Goals of UD, UD addresses barriers faced by people with disabilities, older adults, children, and other populations whom the design process usually overlooks. UD reduces stigma and provides benefits for all users.

Important!

Universal design **is not a synonym for accessibility**. Accessibility usually refers to minimum compliance with prescriptive codes and standards for people with disabilities. UD is performance-based and addresses usability issues for people of all ability levels.

Universal design is not a “one-size-fits-all” approach to design; rather it is a user-centred approach that considers the functionality of the widest possible range of users (Bringolf, 2010).

4.2. Didactic materials - 2

Ronald Mace – Design Pioneer and Visionary of Universal Design



Photo: Courtesy of the [National Museum of American History: Behring Center](#)

Ron Mace, a polio survivor, architect, and advocate who coined the term “universal design”.

Ron Mace graduated from the School of Design at North Carolina State University in 1966 with a Bachelor's degree in architecture. After four years of practising conventional architecture, he became involved in the effort to produce the first building code for accessibility in the nation. This code became mandatory in North Carolina in 1973 and served as a model for other states. His pioneering work in accessible design was instrumental in the passage of national legislation prohibiting discrimination against people with disabilities, the Fair Housing Amendments Act of 1988 and The Americans with Disabilities Act of 1990 (Saxon, 1998).

In 1989, Ron Mace established the federally-funded Center for Accessible Housing, currently known as “The Center for Universal Design”², at the School of Design at North Carolina State University in Raleigh.

Under Mace's direction, the Center has become a leading national and international resource for research and information on universal design in housing, products, and the built environment.

² More info about CUD can be found here <https://www.udinstitute.org/accessiblehousing>

4.3. Didactic materials - 3

1. The Universal Design – definition

Universal design is defined as follows:

Universal design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design³.

– Ronald Mace

2. Universal Design – clarification of the definition⁴

- the design of products and environments

The universal design strategy applies to products and environments within all sectors and subject areas. The term environments refers to all the physical and technical environments that are shaped by humans.

The term products here also encompasses products and software in the ICT sphere as well as products used in the provision of services. Universal design requirements in the service sector are linked to the physical and technical conditions governing access to or use of the relevant service.

In the educational sphere, universal design is linked to the physical and technical features of the teaching environment.

- to be usable by all people

The phrase “usable by all people” is to be incorporated as a first starting point without exception.

Environments and products are to be designed in such a way that they may be utilised by persons of all ages with different levels of skill, ability, and functionality. Factors relating to mobility, vision, hearing, comprehension, and sensitivity to the environment (asthma/allergies) are important in this context.

³ This definition was coined by Ronald Mace and then developed by the Center for Universal Design (CUD) at North Carolina State University.

⁴ Source: *Universal design. Clarification of the concept*, Published by: The Norwegian Ministry of the Environment, 2007, <https://www.regjeringen.no/globalassets/upload/md/vedlegg/rapporter/t-1468.pdf#:~:text=Universal%20design%20-%20clarification%20of%20the%20concept%20Introduction.ensures%20full%20equality%20and%20participation%20for%20all.%201>



- to the greatest extent possible

A key feature of the universal design strategy is its focus on seeking ever-better solutions.

Universal design is an innovative strategy. Technology, knowledge, and awareness levels are subject to rapid-paced change. The principle of universal design is a dynamic tool that reflects the need for ongoing consideration of new means of minimising limitations.

The ability to design products and environments in such a way that they are usable by all may be inhibited by certain limitations relating to current knowledge, technological development, access to products and solutions and practical and formal circumstances.

The universal design strategy may come into conflict with other areas of statutory regulation, such as conservation and safety considerations. In such cases, an effort should be made to seek solutions that satisfy universal design requirements to the greatest possible degree.

- without the need for adaptation or specialized design.

This phrasing emphasises that the primary solution chosen is to be usable by all. Primary solutions are presumed to consider the use of technical aids for personal use, such as wheelchairs, hearing aids, etc.

There should not be a need for any supplementary activity or work to make a solution usable for individual groups.

Separate solutions for persons with disabilities should not be established, nor should the solution in any way manifest that it has been designed specifically for persons with functional impairments. Special solutions intended to compensate for general solutions that are not usable by all, such as stair lifts, should be avoided.

If special solutions or technical devices must be employed to render a universally usable solution, the primary solution must be designed in a manner that functions alongside or in an integral fashion with the special equipment.

Current development trends indicate that roles traditionally filled by people become automated increasingly. The self-service solutions that are introduced must be based on the principle of universal design, but this should not exclude the provision of personal service and assistance.



Characteristics of any UD product or environment are that it **is accessible, usable, and inclusive.**

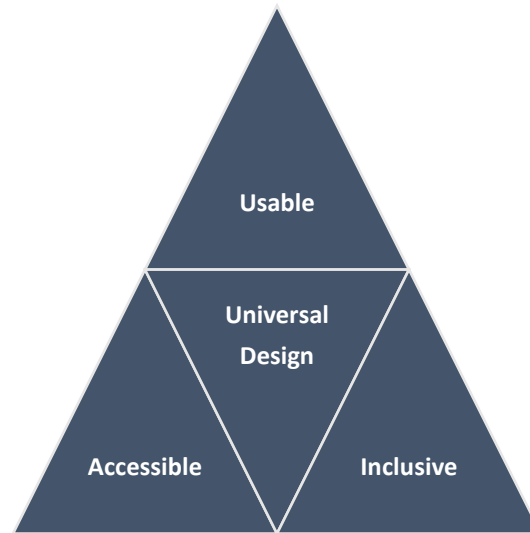


Fig. 1. Characteristics of any UD product or environment

Source: <https://www.washington.edu/doit/universal-design-process-principles-and-applications>



4.4. Didactic materials - 4

Terms for Universal Design used around the world

Other terms for Universal Design used around the world include *Design for All*, *Inclusive Design*, and *Barrier-Free Design*.

UD terminology and meanings differ from one country to another and often reflect each nation's societal values. Cultural differences influence how the movement has been adopted in different countries. However, the common goal of social inclusion transcends national laws, policies, and practices.

Terms for Universal Design used around the world

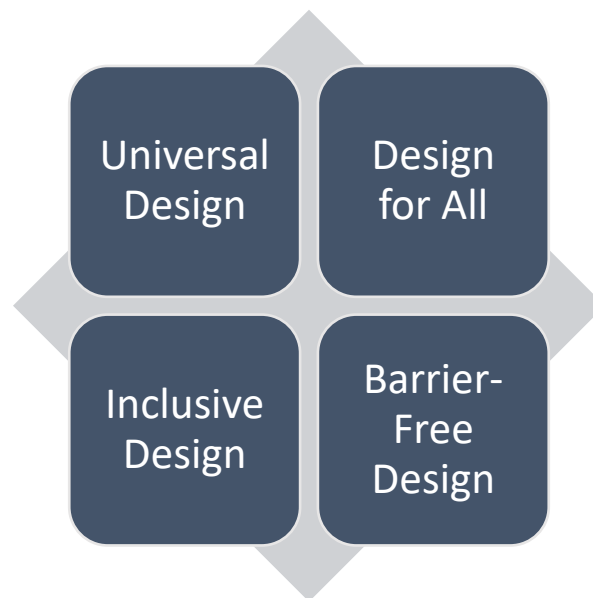


Fig. 2. Terms for Universal Design used around the world

Suggestions for the instructor:

Design for All/ Barrier-Free Design – Universal design looks for solutions that might be needed by some, but they are good for everybody – which means avoiding the stigma associated with the ‘special solutions for special needs’ that characterise the accessible design.

Inclusive design - “Universal design is about equality [so that] anyone can participate in an equal manner.”



4.5. Didactic materials - 5

The difference between accommodation and universal design

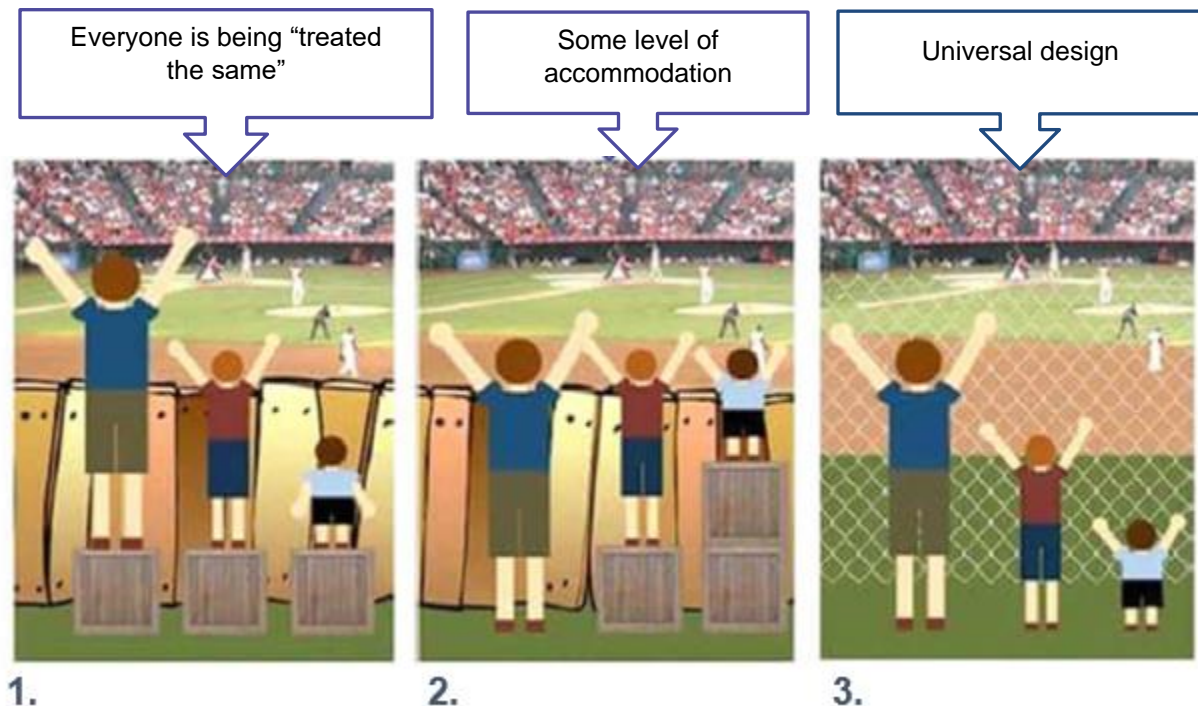


Fig. 3. Difference between accommodation and universal design

Source: images taken from <https://oit.utk.edu/wp-content/uploads/Screen-Shot-2017-10-05-at-9.32.55-AM.png>
<https://oit.utk.edu/wp-content/uploads/Screen-Shot-2017-10-05-at-9.32.55-AM.png> [accessed: 28.12.2021]

An explanation that can be used by the instructor:

The images above show some boys presented in three situations: “treating everyone the same”, appropriate accommodation leading to equity and universal design.

Image no. 1 presents the scenario showing that everyone is being “treated the same”. Everyone has a box of the same size to stand on. The short boy cannot spectate the match at all as the environment is inaccessible.

In the second image, there is some level of accommodation. This is individualised accommodation where the medium height boy gets one box, and the short boy gets two boxes to stand on. The tall boy needs no boxes. All of them can spectate the match equally. The accommodation leads in that context to equity.

Image no. 3 is an example of universal design. The wall has been replaced by a transparent net. There is no accommodation (boxes) needed now, everyone can spectate the match. The barrier

(wall) has been removed and the design caters to all. All the boys, regardless of their height, can spectate the match.⁵

⁵ Based on explanation taken from <https://deoc.in/view-point/difference-between-accessibility-accommodation-and-universal-design/>



4.6. Didactic materials – 6

Accessibility and the reasonable accommodation mechanism

Accessibility is the property of the environment, transportation, technology, and information and communication systems, as well as commodities and services that allows people with disabilities to use them equally with other people.

For many people with disabilities, accessibility is the preliminary condition to live independently and fully participate in the social and economic life.

Important!

Accessibility can be assured mainly by following the frameworks of Universal Design. Also, removing the existing barriers and using a “reasonable accommodation mechanism” is of great importance.

Reasonable accommodation means necessary and appropriate modification and adjustments not imposing a disproportionate or undue burden, where needed in a particular case, to ensure to persons with disabilities the enjoyment or exercise on an equal basis with others of all human rights and fundamental freedoms.

Article 2 of the CONVENTION ON THE RIGHTS OF PERSONS WITH DISABILITIES (CRPD)

of December 13, 2006 (New York)

Reasonable accommodation mechanism – examples:

1. Special transportation



Source: [individual transportation for people with disabilities](#) [accessed: 19.01.2022]



Co-funded by the
Erasmus+ Programme
of the European Union

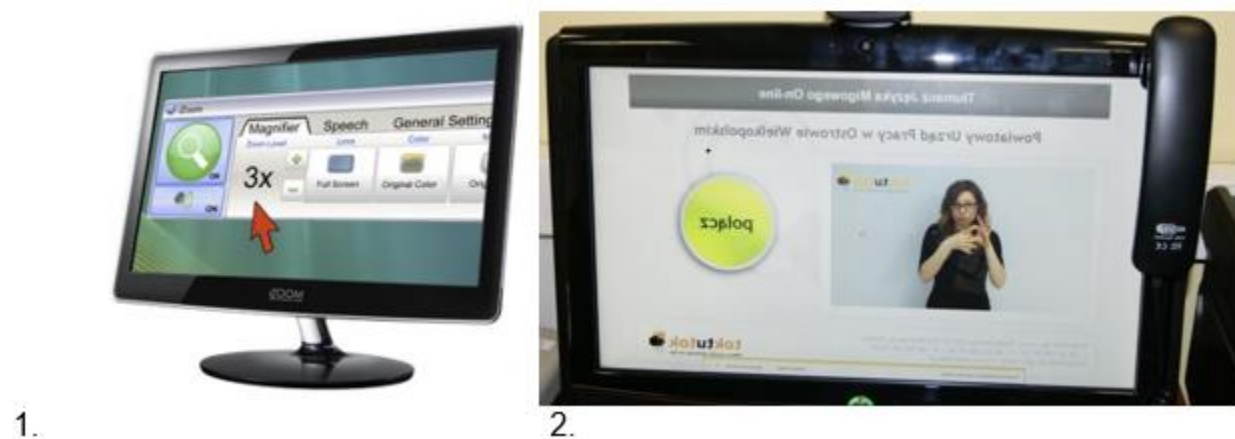
The European Commission support for the production of this publication does not constitute endorsement of the content which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

2. Architectural accommodation of inaccessible buildings (e.g., by building wheelchair ramps, appropriate flagging of buildings by introducing contrasting and raised elements)



Sources: 1. <https://www.likwidacja-barier.pl/2016/06/co-wybrac-winde-czy-podjazd/>, 2. <http://www.masterpunkt.com/en/node/11>, 3. <https://sklep.szymkowiak.pl/product-pol-5897-Plyta-BRAJL-dla-niewidomych.html> [accessed: 19.01.2022].

3. Adjustment of the electronic systems (e.g., renting or buying and installation of enlarging programs, speech synthesizers, equipment for the persons using the sign language, Braille alphabet printers)



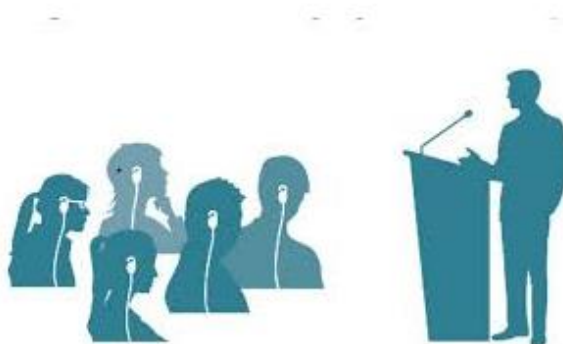
Source 1. <https://www.apollo.pl/produkt/program-powiekszajacy-i-udzwiekawiajacy-izoom-wersja-pendrive.139244.html>, 2. <https://www.powiat-ostrowski.pl/artukul/2837>, [accessed: 19.01.2022].



4. Acoustic adjustments (buying and installation of the systems that enhance hearing, e.g., hearing loops, FM systems).



1.



2.

Source: 1. https://www.smartear.pl/pl/products/stacja-petla-indukcyjna-dla-niedoslyszacych-geemarc-loophear-lh160-z-petla-do-montazu-na-sciane-1134?utm_source=iai_ads&utm_medium=google_shopping, 2. <https://bel-aqustic.com.pl/rozwiazania-petla-indukcyjna-naszyjna-fm.php>, [accessed: 19.01.2022].

5. Ensuring help from the assistant (e.g., a translator to the simplified language, an assistant of a person with a disability, a sign language translator, a guide for a person with visual impairments)



1.



2.



3.

Source: 1. <https://www.externus.pl/zawody/asystent-osoby-niepelnosprawnej>, 2. <http://www.pznlubaczow.iap.pl/>, 3. <https://zamigam.pl/>, [data dostępu: 19.01.2022].



6. Taking into consideration special nutritional needs



Source: 1. <https://www.glutenfreesociety.org/foods-to-avoid-with-gluten-allergy/>, 2. https://www.iconfinder.com/icons/4538582/sugar_sugarfree_sugarless_icon, [accessed: 19.01.2022].

7. Alternative forms of preparing information materials (instructional, informative, e.g., electronic versions of the documents, enlarged print versions, Braille alphabet versions, easy-to-read print versions, recording of the sign language translation)



Source: 1. <http://www.masterpunkt.com/oferta/brajil/druk-w-brajilu-dla-firm>, 2. <https://www.gov.pl/web/kppsp-brzeg/tekst-latwy-do-czytania>, [accessed: 19.01.2022].



4.7. Didactic materials – 7

Goals of the Universal Design – The IDEA Center

The Center for Inclusive Design and Environmental Access (IDEA Center)⁶ expands the conceptual frameworks of universal design beyond usability to include social participation and health as well as acknowledges the role of context in developing realistic applications.

The group of IDEA Center researchers developed the Goals of Universal Design© in order to define the outcomes of UD practice in ways that can be measured and applied to all design domains within the constraints of existing resources.

The eight goals of Universal Design and their practical examples

1. **Body Fit** – accommodating a wide range of body sizes and abilities.



2. **Comfort** – keeping demands within desirable limits of body function and perception.



⁶More info about The IDEA Center can be found on <http://idea.ap.buffalo.edu/>

3. **Awareness** – ensuring that critical information for use is easily perceived.



4. **Understanding** – making methods of operation and use intuitive, clear, and unambiguous



5. **Wellness** – contributing to health promotion, avoidance of disease, and protection from hazards.



6. Social Integration – treating all groups with dignity and respect.



7. Personalization – incorporating opportunities for choice and the expression of individual preferences.



8. Cultural Appropriateness – respecting and reinforcing cultural values, and the social and environmental contexts of any design project.



Source: E. Steinfeld, J. Maisel, (2012). *Universal Design: Creating Inclusive Environments*, <http://idea.ap.buffalo.edu/about/universal-design/> [accessed: 09.12.2021]

Conclusions

The abovementioned goals show that the feelings of the participants of a given project, respect for the people regardless of their diversity, and the possibility of fulfilling their individual social and cultural needs, are equally important to the parametric merits.



4.8. Didactic materials - 8

The seven Principles of Universal Design

The Principles of Universal Design were developed in 1997 by a working group of architects, product designers, engineers, and environmental design researchers, led by Ronald Mace at the North Carolina State University (NCSU). The purpose of the principles is to guide the design of environments, products and communications.

According to the Center for Universal Design at NCSU, the Principles “may be applied to evaluate existing designs, guide the design process and educate both designers and consumers about the characteristics of more usable products and environments.”⁷

1. **Equitable Use** – the design is useful and marketable to people with diverse abilities.

Guidelines:

- 1a. Provide the same means of use for all users: identical whenever possible; equivalent when not.
- 1b. Avoid segregating or stigmatizing any users.
- 1c. Provisions for privacy, security, and safety should be equally available to all users.
- 1d. Make the design appealing to all users.

2. **Flexibility in Use** – the design accommodates a wide range of individual preferences and abilities.

Guidelines:

- 2a. Provide choice in methods of use.
- 2b. Accommodate right- or left-handed access and use.
- 2c. Facilitate the user’s accuracy and precision.
- 2d. Provide adaptability to the user’s pace.

⁷ https://projects.ncsu.edu/ncsu/design/cud/about_ud/udprinciples.htm

3. **Simple and Intuitive Use** – the use of the design is easy to understand, regardless of the user’s experience, knowledge, language skills, or current concentration level.

Guidelines:

- 3a. Eliminate unnecessary complexity.
- 3b. Be consistent with user expectations and intuition.
- 3c. Accommodate a wide range of literacy and language skills.
- 3d. Arrange information consistent with its importance.
- 3e. Provide effective prompting and feedback during and after task completion.

4. **Perceptible Information** – the design communicates necessary information effectively to the user, regardless of ambient conditions or the user’s sensory abilities.

Guidelines:

- 4a. Use different modes of presentation (pictorial, verbal, tactile) of essential information.
- 4b. Provide adequate contrast between essential information and its surroundings.
- 4c. Maximize “legibility” of essential information.
- 4d. Differentiate elements in ways that can be described (i.e. make it easy to give instructions or directions).
- 4e. Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

5. **Tolerance for Error** – the design minimizes hazards and the adverse consequences of accidental or unintended actions.

Guidelines:

- 5a. Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.
- 5b. Provide warnings of hazards and errors.
- 5c. Provide fail-safe features.
- 5d. Discourage unconscious action in tasks that require vigilance.



6. **Low Physical Effort** – the design can be used efficiently and comfortably and with a minimum of fatigue.

Guidelines:

- 6a. Allow the user to maintain a neutral body position.
- 6b. Use reasonable operating forces.
- 6c. Minimize repetitive actions.
- 6d. Minimize sustained physical effort.

7. Size and Space for Approach and Use

Appropriate size and space are provided for approach, reach, manipulation, and use regardless of the user's body size, posture, or mobility.

Guidelines:

- 7a. Provide a clear line of sight to important elements for any seated or standing user.
- 7b. Make reach to all components comfortable for any seated or standing user.
- 7c. Accommodate variations in hand and grip size.
- 7d. Provide adequate space for the use of assisting devices or personal assistance.⁸

Important!

All guidelines may not be relevant to all designs.

⁸ <https://www.udinstitute.org/>

The seven Principles of Universal Design



1. **Equitable Use** - The design is useful and marketable to people with diverse abilities.



2. **Flexibility in Use** - The design accommodates a wide range of individual preferences and abilities.



3. **Simple and Intuitive Use** - The use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.



4. **Perceptible Information** - The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.



5. **Tolerance for Error** - The design minimizes hazards and the adverse consequences of accidental or unintended actions.



6. **Low Physical Effort** - The design can be used efficiently and comfortably and with a minimum of fatigue.



7. **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.

Source: author's own elaboration based on <https://www.udinstitute.org/>. [accessed: 20.12.2021]



4.9. Didactic materials – 9

UD target groups



Fig. 5. UD target groups

Source: <http://squareone.blog/universal-design-and-the-five-why-and-how/> [accessed: 28.12.2021]

Practical skills in applying universal design, in addition to knowledge of its principles, require knowledge and understanding of the needs of future users of designed spaces, objects, products and services.

In the area of universal design, the needs of the following groups are considered:

- people using wheelchairs, crutches, and people with reduced mobility;
- blind and visually impaired people;
- deaf and hard of hearing people;
- deaf-blind people;
- people with mental and intellectual disabilities, and people with impaired cognitive functions;
- elderly people;
- pregnant women;
- people with young children, including prams;
- people who have difficulties in communicating with the environment (also with understanding the written or spoken language);
- people with unusual height (including children);
- digitally excluded people;
- people with heavy or bulky luggage, or goods;
- and others (e.g. temporary exclusion, with limited manual dexterity).



4.10. Didactic materials – 10

Universal Design – Policy and Legislation

1. United Nations Convention on the Rights of Persons with Disabilities (CRPD)⁹

The United Nations Convention on the Rights of Persons with Disabilities 2006 recognises that every person must be empowered to participate in society and to live life to his or her fullest potential. This universal, legally binding standard ensures that the rights of persons with disabilities are guaranteed. The UN Convention on the Rights of Persons with Disabilities was adopted in 2006.

With respect to Universal Design, signatory countries are instructed:

To undertake or promote research and development of universally designed goods, services, equipment and facilities, which should require the minimum possible adaptation and the least cost to meet the specific needs of a person with disabilities, to promote their availability and use, and to promote universal design in the development of standards and guidelines

2. European policy and legislation

European Commission

The Barcelona Declaration (1995), which resulted from the European Congress “The City and the Disabled”, was a commitment at the local government level to promote the inclusion of people with disabilities in Europe. In signing, local authorities and municipalities agreed to develop a plan of action for implementation, including consulting people with disabilities and their advocates. The Declaration stated that “the undersigning cities assume that the limits between “normality” and disability are ill-defined, and therefore it is necessary to consider the differences between citizens as a part of the diversity of which society is made up, designing services and structures so that they can be used by everyone, and making unnecessary, in most cases, the existence of specific elements for disabled persons.”

In 1999, the European Commission’s eEurope initiative was launched, aiming to develop Information and Communication Technology (ICT) that promoted social inclusion. Adopting a Universal Design approach, a series of action plans (eEurope 2002, eEurope 2005, and currently i2010) have steered the member states towards the three key objectives:

- Bringing every citizen, home and school, every business and administration, online and into the digital age.
- Creating a digitally literate Europe, supported by an entrepreneurial culture ready to finance and develop new ideas.

⁹ More about the Convention: <https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html>



- Ensuring that the whole process is socially inclusive, builds consumer trust and strengthens social cohesion.

a) European Union

Article 13 of the Treaty of Amsterdam

Article 13 of the Treaty of Amsterdam (1997), the first Treaty to mention disability in the European Union, provides a strong legal basis for action against discrimination on the grounds of disability.

European Union anti-discrimination Directives

European Union anti-discrimination Directives (such as the Council Directive 2000/78/EC) ensure that all member states introduce relevant legislation on a national basis.

Disability Action Plan 2006-2015

The Council of Europe Disability Action Plan 2006-2015 suggests that the principles of Universal Design are vital to the implementation of the listed actions. Specifically, member states are recommended to implement Universal Design principles into new developments in the following areas: ICT, transport, the built environment and product research. Member States are also urged to establish centres that promote the concept of Universal Design.

The Tomar Resolution (ResAP (2001)1)

The Resolution “on the introduction of the principles of universal design into the curricula of all occupations working on the built environment” aims to improve the accessibility of the built environment by recommending the inclusion of the principles of Universal Design into the curricula and training of all vocations working on the built environment, in particular architects, engineers and town planners.

ResAP (2001)3

Resolution ResAP (2001)3 “Towards full citizenship for people with disabilities through inclusive new technologies” recommends drawing up national strategies to ensure that people with disabilities benefit from the opportunities of new technologies, rather than being excluded due to newly created barriers caused by inappropriate technology design or provision.

ResAP (2007)1

Resolution “On achieving full participation through Universal Design” recommends a more general implementation of Universal Design into “all aspects of society”, including the built environment, ICT networks, transport, services, tourism, products and goods, information, employment, and education

3. National policy and legislation

This issue needs to be completed according to the needs of the instructor in the specific EU Member State



4.11. Didactic materials – 11

Video „Budynek dostępny” (“Accessible building”)

Task:

The instructor divides participants into five groups. Each group is assigned one task. They need to follow the instructions:

Instructions:

Use the pieces of information from the present training concerning the Universal Design and the “Accessible building” video write down and present to other participants your conclusions on how the building in the video is suitable for:

Group 1 – people with mobility impairment

Group 2 – people with visual impairment

Group 3 – people with hearing impairment

Group 4 – elderly people

Group 5 – children/mothers with small children

Time for the task: at least 20 minutes.

Tip for the instructor:

Some of the ideas of the groups may relate to the same solutions. It is crucial to underline their universal character and accordance with the idea of “accessibility and participation for all”.

Link to the video: <https://youtu.be/YreZuKAO08I>



4.12. Didactic materials – 12

EXERCISE – OPEN-ENDED SENTENCES

Instructions:

Copy each question separately and paste it into the chatbox. Give the instructions:

“Think of your first associations with those sentences and finish them according to your own ideas”

Participants submit their comments – the first associations they can think of.

Exemplary sentences:

- Today I've learned that...
- It surprised me that...
- I didn't expect that...
- Now I understand...

4.13. Didactic materials – 13

Understanding learner variability

1. There's no “average brain”

“Variability is the dominant feature of the nervous system. Like fingerprints, no two brains are alike”.



Fig. 6. Unique Brain 'Fingerprint'

Source: <https://inclusive.tki.org.nz/guides/universal-design-for-learning/learner-variability-matters/> [accessed: 12.12.2021]

Findings from neuroscience indicate that each human brain learns using three primary networks in the brain.

- Our **affective networks** influence our emotions and motivations.
- Our **recognition networks** influence what we perceive and understand through our senses.
- Our **strategic networks** influence how we organise and communicate our thinking.

These networks make unique interconnections influenced by:

- the context in which learning happens
- our emotional state
- our experiences, background knowledge, interests and abilities.

This combination makes learning highly variable.¹⁰

¹⁰ Source: <https://inclusive.tki.org.nz/guides/universal-design-for-learning/learner-variability-matters/>

2. What is learner variability?

Based on research from learning sciences and cognitive neuroscience, **learner variability** is the idea that all individuals are unique in how they learn. Not only do we all learn in unique ways, but our abilities continually change in response to the environment in real-time. Instead of thinking about learner variability in our classroom as something to reduce, we can think of it as a normal and predictable part of teaching any group of learners. Then, we can proactively plan for and even celebrate it. This way of teaching is in contrast to a focus on what is similar or average about our students.

When we shift our focus from what is similar about learners to their variability, the payoff is great. Educators who embrace the idea of learner variability can use UDL principles to design opportunities for all students to engage, understand, and respond to meaningful learning. They see learner variability as an asset, and therefore, the logical starting place for their thinking about students and curriculum.

Important!

Learner variability is a fundamental premise of UDL.

3. Why does learner variability matter?

In this discussion, Todd Rose from CAST, at the Cyberlearning Research Summit on January 18, 2012, examines the myth of the average learner and its impact on schools.

Todd Rose: Variability Matters

<https://www.youtube.com/watch?v=8WCInVjCEVM&t=82s>

Discussion after the presentation:

- What is the myth of the average learner?
- Why is it important to understand?
- What are some criteria for the good design of learning opportunities for our students?
- Reflect on Todd Rose's story about the implications of giving everyone the same sized shoes? In what ways might this relate to teaching and learning?



4.14. Didactic materials – 14

UDL as a way to meet diverse educational needs



1.



2.



3.



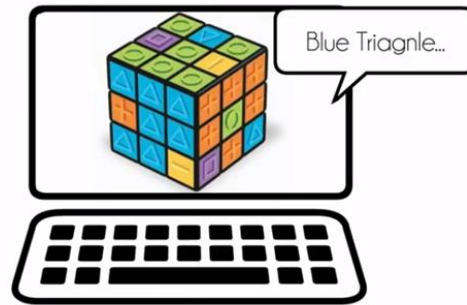
4.

This is probably a familiar puzzle to many of you. It's a Rubik's Cube. We could say this cube is designed for an average person. Many people can see the colours and manipulate the moving elements with their hands even if they can't solve the riddle. But it might not work for people who are colourblind (they would have trouble distinguishing red from green) or for someone who is visually impaired and is not able to see the colours at all. A traditional response to this problem is to create a different Rubik's Cube to meet different needs.

1. Here's a Brailled Rubik's cube for those with vision impairments. But what's the problem with this one? The Brailled cube might not work for someone who is sighted and who really does respond to the colours on the cube. Also, it might not work for someone who can't read Braille. So, we do have two cubes to deal with and it still doesn't really address the needs of someone who is colourblind.
2. That would require yet a third cube. But...
3. Here is a cube that is designed for the widest possible range of users. It uses colour for those who play based on colour but also includes raised symbols for those who may not be able to see colours or for those who need to feel the information rather than see it.



4. Ultimately you could create this in a digital online form with auditory feedback so someone who can't interact with a cue physically can still play the game.¹¹



Source: author's own elaboration based on *Learner Variability&UDL*, <https://www.youtube.com/watch?v=v8IHA6gaWCY> [accessed: 04.01.2021]

¹¹ Source: based on video *Learner Variability&UDL*, <https://www.youtube.com/watch?v=v8IHA6gaWCY>

4.15. Didactic materials – 15

What is UDL?

UDL is a model of designing the teaching process so that it finds the needs of the biggest group of recipients. The frameworks of UDL are based on pedagogical, psychological, and neurobiological research.

The root of UDL is a belief that people learn in diverse ways and this diversity should be considered in the learning environment from the beginning of the learning process (Gronneberg, Johnson 2015). Every learner should be able to fully participate in the didactic process without lowering its standards.

Although UDL concerns the students in general, it is especially important for the students with special educational needs. Thus, its implementation is indispensable in inclusive education.



**CLEARING A PATH
FOR PEOPLE WITH SPECIAL NEEDS
CLEARS THE PATH FOR EVERYONE!**

Fig. 7. UDL as clearing a path for everyone

Source of the image: <https://pl.pinterest.com/pin/774267360909556231/>[accessed: 05.01.2022]

1. Definition (by Center for Applied Special Technology, CAST):

Universal Design for Learning (UDL) is a framework to improve and optimize teaching and learning for all people based on scientific insights into how humans learn.

2. The origins of UDL

The principles of Universal Design for Learning (UDL) emerged as a result of the universal design movement in architecture and product development that began in the early 1980s. At that time, society began to address access to public facilities by eliminating architectural barriers. The concept of universal design was created by architect Ron Mace, who defined universal design as:

“...the design of products and environments to be usable by all people, to the greatest extent possible, without the need of adaptation or specialized design.”

As Mace explained it, the universal design would “consider the needs of the broadest possible range of users from the beginning.” According to Mace, architects and product developers should adapt to the people they mean to serve, rather than forcing those people to adapt to their environments and products.

Researchers at the Center for Applied Special Technology (CAST) realized that some of the basic elements of universal design – its flexibility, inclusiveness, and foresight in anticipating people’s needs – could be applied in the field of education. And they have found that, just as with universal design in architecture and product development, UDL winds up helping all of the students in a classroom, regardless of ability or disability (<http://olms.cte.jhu.edu/>).



4.16. Didactic materials – 16

UDL Principles

According to CAST, learning is acquired through:

1. Multiple means of representation
2. Multiple means of action and expression
3. Multiple means of engagement

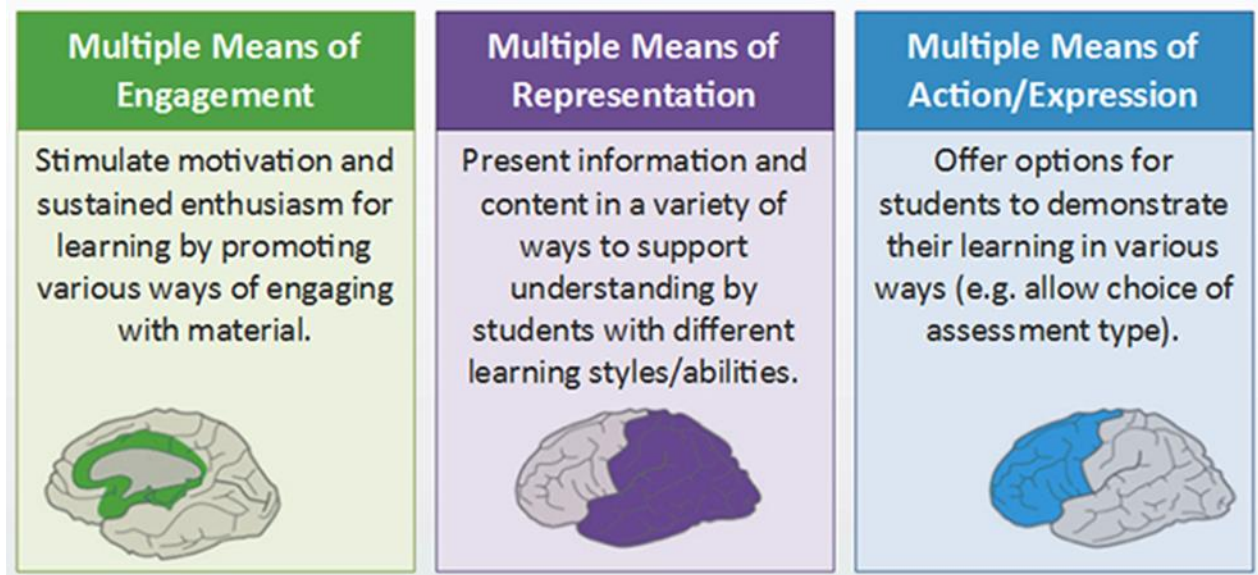


Fig. 8. UDL Principles

Source: <https://www.ahead.ie/udl-framework> [accessed: 05.01.2022]

Watch a video - UDL: Principles and Practice, <https://youtu.be/pGLTJw0GSxk>

National Center on UDL Director David Rose explains how UDL helps meet the most pressing issues facing educators today. Drawing on brain research and the latest learning sciences, Dr. Rose describes the three UDL principles and what they mean for classroom practice.

4.17. Didactic materials – 17

UDL Guidelines

The UDL Guidelines and associated checkpoints align with the neurological organization of learning and help educators address the predictable variability in learning that we know will be present in any environment.

UDL recognizes variability in:

- **Engagement** (the *why* of learning, which aligns with affective networks): interest, effort and persistence, and self-regulation
- **Representation** (the *what* of learning, which aligns with recognition networks): perception, language and symbols, and comprehension
- **Action & Expression** (the *how* of learning, which aligns with strategic networks): physical action, expression and communication, and executive function

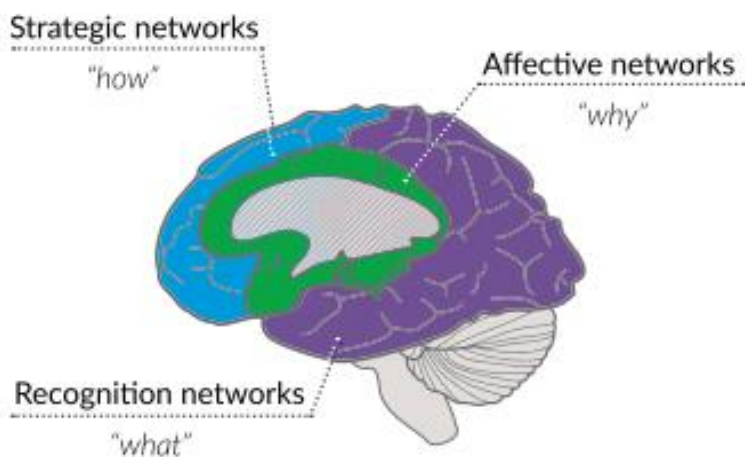


Fig. 9. Neurological organization of learning

Source: CAST (2018). UDL and the learning brain. Wakefield, MA: Author. Retrieved from <http://www.cast.org/our-work/publications/2018/udl-learning-brain-neuroscience.html> , [accessed: 20.12.2021]



UDL Guidelines

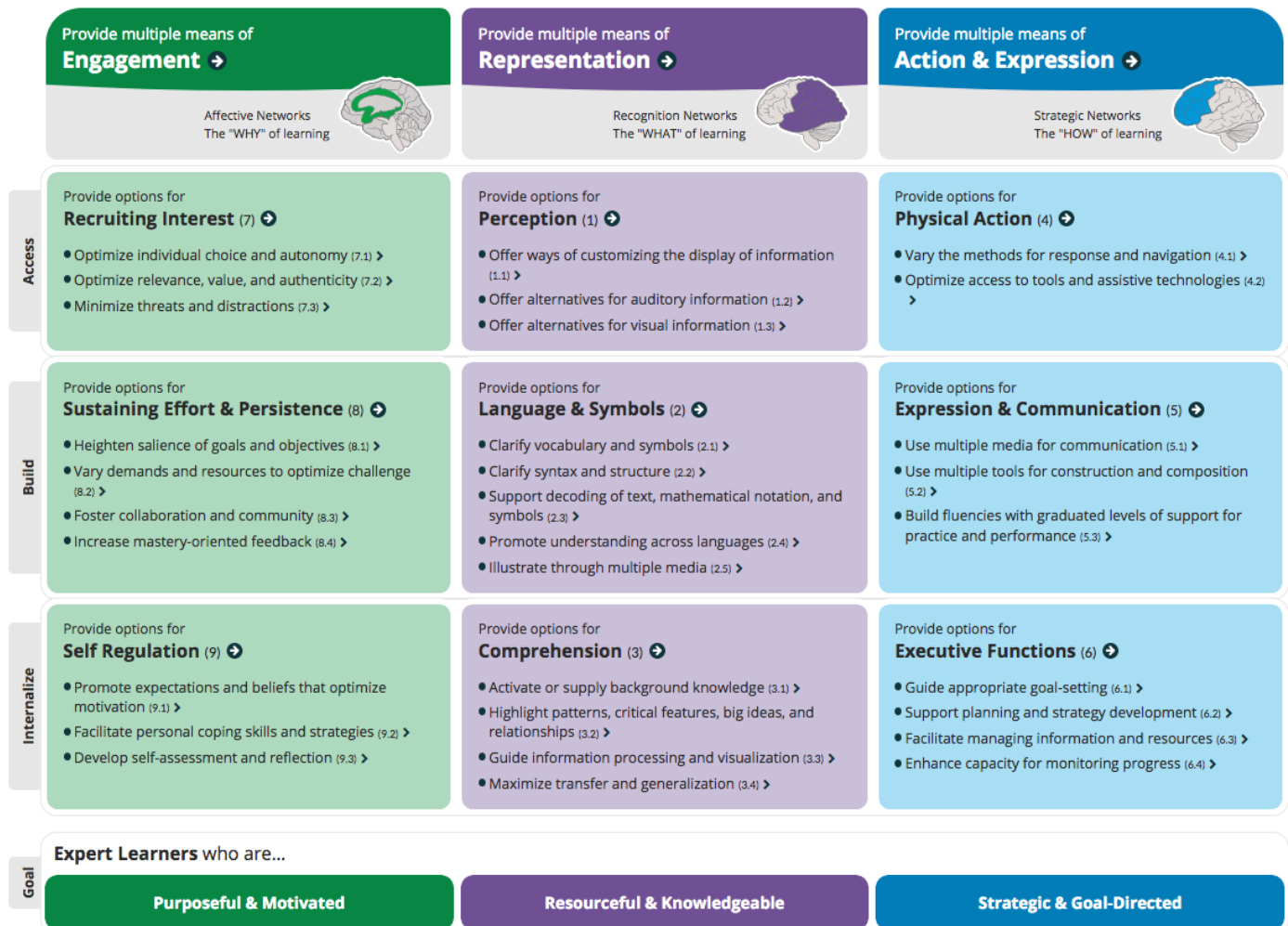


Fig. 10. UDL Guidelines

Source: <https://udlguidelines.cast.org>, [accessed: 20.12.2021]

How to read UDL guidelines?

Video hosted on YouTube, https://youtu.be/_STFdHvCPmU

Additional useful material to UDL guidelines examples can be found here:

<https://www.ahead.ie/udl-practice>



4.18. Didactic materials – 18

Tab. 1. Application of UDL for selected lesson components

LESSON COMPONENT	QUESTIONS TO HELP WITH DESIGN USING UDL
Goals	What skills and knowledge should students acquire (as required by the core curriculum)?
Assessment	How can students show that they have achieved the required goals?
Methods	What support can be provided for instruction so that students acquire the material and present their knowledge?
Materials	What resources, materials and tools can be used to provide various ways of presenting information and attracting interest in the presented content?

Source: K. Cichočka-Segiet, P. Mostowski, P. Rutkowski, 2019, p. 212



4.19. Didactic materials – 19

UDL Designing Cycle

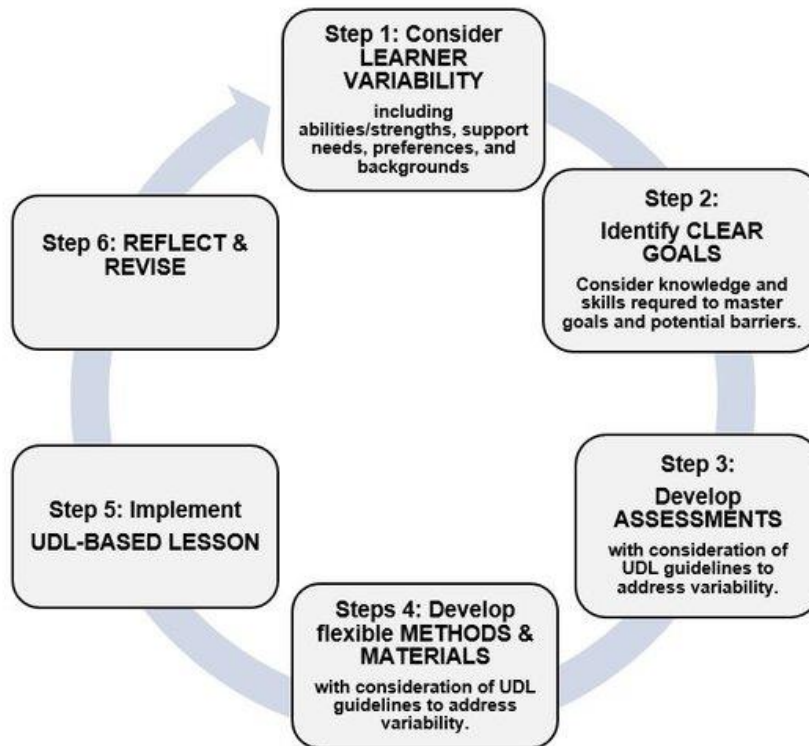


Fig. 11. UDL Design Cycle

Source: Rao, K. (2021). *Inclusive Instructional Design: Applying UDL to Online Learning*. The Journal of Applied Instructional Design, 10(1). <https://dx.doi.org/10.51869/101kr>, p.4 [accessed: 12.01.2022]



4.20. Didactic materials – 20

SWOT Analysis

SWOT stands for Strengths, Weaknesses, Opportunities and Threats. This method is based on a team analysis and evaluation of a specific problem or event. It requires a critical and creative approach to the problem.

SWOT technique template



Fig. 12. SWOT technique template

UDL at my workplace

Group work:

1. The instructor prepares a document on the Google Disc platform with a template for the SWOT technique and pastes a link to the document in the chat.
2. The participants analyse the possibilities of implementing the UDL concept in their workplace, pointing to the positive elements and those that would be difficult to implement that result from the specificity of a given institution, and write them down into the diagram.
3. The instructor summarizes the group work – the discussion over the results.

Attention! When talking about threats, we mean barriers to the implementation of UDL.



4.21. Didactic materials – 21

UDL POST-ASSESSMENT¹²

1. Watch a Video: *UDL At A Glance*, <https://youtu.be/bDvKnY0g6e4>
2. Answer questions to assess your knowledge

1. Which of the following is NOT one of the key principles of Universal Design for Learning (UDL?)

- a. Multiple means of representation
- b. Multiple means of action and expression
- c. Multiple means of initiation and differentiation
- d. Multiple means of engagement

2. Universal Design for Learning (UDL) is a set of principles that aims to do the following:

- a. reduce barriers in instruction
- b. provide appropriate accommodations and supports
- c. maintain high expectations for achievement
- d. provide a blueprint for creating instructional goals, methods, materials, and assessments that work for everyone
- e. All of the above

3. Universal Design for Learning (UDL) applies to the whole curriculum, including:

- a. Goals
- b. Instruction
- c. Materials
- d. Assessment
- e. All of the above

4. In Universal Design for Learning (UDL), multiple means of representation refer to the following:

- a. The way information is presented to increase recognition and understanding
- b. The way information is assessed to determine recognition and understanding
- c. The way students respond or demonstrate their skills and knowledge
- d. How accessible products are developed for students

5. In Universal Design for Learning (UDL), multiple means of expression refer to the following:

- a. The various means with which students express their creativity through art
- b. The way students respond or demonstrate their skills and knowledge
- c. The way information is presented to increase recognition and understanding
- d. Graphic organizers for all students who request to use them

¹² Source: https://cedar.education.ufl.edu/mtss-udl-di-dev/pdfs-worksheets/CSULA_MTSS_UDL_DI_Workbook.pdf, p. 7

6. In Universal Design for Learning (UDL), multiple means of engagement refer to the following:

- a. Expanding purposeful output through visual displays
- b. How information is presented in a clear and accessible manner to all students
- c. The way students demonstrate their skills or knowledge
- d. How students are engaged and involved in their learning

7. An example of multiple means of representation is:

- a. Choosing which writing tool to use
- b. Enhancing students' involvement in discussions related to the topic
- c. Visual displays of information contained in lesson
- d. Flexible groupings for cooperative learning

8. An example of multiple means of engagement is:

- a. Visual displays
- b. Teacher's creative use of multimedia resources
- c. Graphic organizers
- d. Choice of tools or activities during lesson

9. An example of multiple means of action and expression is:

- a. Using sentence starters or story outlines during writing
- b. Listening to audiotapes of written materials
- c. Choice of tools or activities during lesson
- d. Peer tutoring

ANSWER KEY:

1: c, 2: e, 3: e, 4: a, 5: b, 6: d, 7: c, 8: d, 9: a

4.22. Didactic materials – 22

UDL Design Considerations for Online Learning

	General Considerations for UDL-based design	Additional Considerations for UDL-based Design ONLINE
1. Consider Learner Variability	<p>Consider the following variability factors of your learners:</p> <ul style="list-style-type: none"> • Abilities/Strengths, • Backgrounds/Experiences • Preferences/Interest • Support Needs 	<p>Consider variability factors related to online learning:</p> <ul style="list-style-type: none"> • Access to online environments (internet connectivity and devices) • Ability to work independently and level of support at home (e.g. parental support for young children)
2. Identify Clear Goals	<ul style="list-style-type: none"> • State 1-2 goals in a clear and simple form • Identify the knowledge and skills required to meet the goals • Identify potential barriers 	<ul style="list-style-type: none"> • Identify learning experiences required for each goal and "chunks" of a lesson to deliver in varied ways in the online environment • Consider how to use asynchronous and synchronous formats for the learning experiences
3. Develop Assessments	<ul style="list-style-type: none"> • Use formative assessments that provide information on student mastery towards goals • Develop summative assessments that have construct relevance (measures the knowledge rather than the format of assessments) 	<ul style="list-style-type: none"> • Support persistence and engagement in the online learning environment by using formative assessments to provide regular and timely feedback <p>Provide mastery-oriented feedback that emphasizes effort and practice: give students specific information and models to clarify expectations of a target response</p>
4. Develop methods and materials	<p>Taking UDL guidelines into consideration, plan strategies that address learner variability:</p> <ul style="list-style-type: none"> • Integrate strategies that reduce barriers • Integrate scaffolds that learners can use as needed • Provide flexible options and choices in relation to lesson goals • Use materials/resources that enhance flexibility, choice and support options 	<ul style="list-style-type: none"> • Identify instructional strategies to use in asynchronous and synchronous modes to support the lesson goals • Provide support for planning, organization, time management and self-regulations within the lesson • Identify digital tools that provide support concerning the lesson goals, e.g. tools that support reading, writing, expression or organization of information • Identify how to use digital tools along with instructional strategies to reduce barriers and address students' strengths, preferences and needs

Fig. 13. UDL Design Considerations for Online Learning

Source: Rao, K. (2021). *Inclusive Instructional Design: Applying UDL to Online Learning*. The Journal of Applied Instructional Design, 10(1). <https://dx.doi.org/10.51869/101kr>, p.4



4.23. Didactic materials – 23

Ten Steps Towards Universal Design of Online Courses

1. Include a welcoming access statement
2. Provide simple, consistent navigation
3. Choose tools carefully
4. Model and teach good discussion board etiquette
5. Use colour and font with care
6. Make sure text is readable
7. Provide accessible document formats
8. Describe graphics and visual elements
9. Caption videos and transcribe audio clips
10. Rethink, redesign PowerPoint presentations

Fig. 14. Ten Steps Towards Universal Design of Online Courses

Source: based on *Ten Simple Steps toward Universal Design of Online Classes* (n.d.). Retrieved from University of Arkansas at Little Rock. <http://ualr.edu/pace/tenstepsud/>

4.24. Didactic materials – 24

Tips for the instructor:¹³

Step 1. Include a welcoming access statement

Access statement communicates the level of commitment to design the course in an inclusive and welcoming way for all students and provides guidance for students who encounter barriers. Remember to:

- Include contact information for the school/campus/institution disability resource office.
- Avoid the use of wording that inadvertently communicates that the primary reason for providing access is to be in compliance with the law.
- Avoid using language that places all of the responsibility for access on the student.

Suggestions on how to prepare an access statement can be found here: http://praxis.technorhetoric.net/tiki-index.php?page=Suggested_Practices_for_Syllabus_Accessibility_Statements

Step 2. Provide simple, consistent navigation

The elements used to set up the online class should be accessible for navigation through the keyboard only, since some learners may not be able to physically operate a mouse.

- The pages should be clean, uncluttered, consistent, simple, and well organized.
- There should be headings and subheadings that do not rely on colour (since some learners cannot distinguish between colours well).
- The text for links should be concise and meaningful (not this: *click here*)
- Provide a table of contents for easy navigation to all components of the course.
- Make sure all links can be controlled by keyboard-only navigation.

Step 3. Choose tools carefully

Most commercial learning management system tools (such as Moodle) are accessible to learners with various types of disabilities. However, some tools may present barriers for some students. For example:

- some of the testing or quiz tools have compatibility problems with some screen reader technologies. A good practice would be to have a mock exam available for students to try so that they will know ahead of time if their adaptive technology will work with your exam. If it does not, an alternative version of the exam needs to be provided.
- Real-Time Chat can cause problems for students who are blind (the chat features are incompatible with screen reader technology), for students with learning disabilities, and students for whom English is a second language (the fast pace of chats). It is recommended that it be used as an optional tool only.

¹³ Based on “Ten Simple Steps toward Universal Design of Online Classes” (n.d.). Retrieved from University of Arkansas at Little Rock. <http://ualr.edu/pace/tenstepsud/> and C. A. Dell, T. F. Dell, T. L. Blackwell (2015)

Step 4. Model and teach good discussion board etiquette

Discussion Board Guidelines

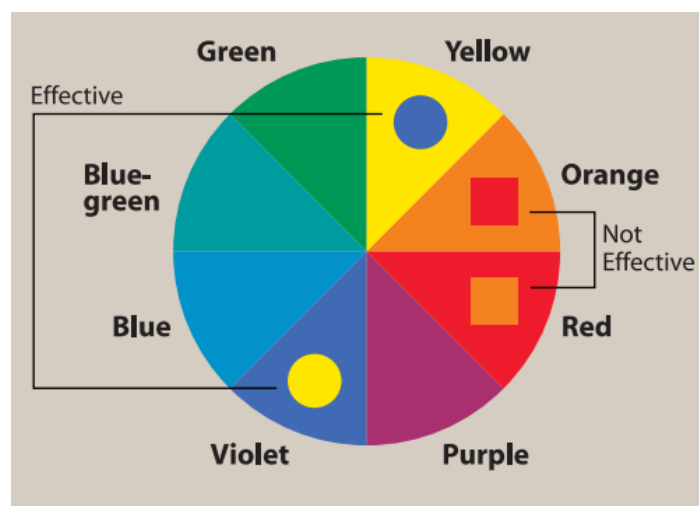
- Think before you post.
- Use lower and upper case appropriately. **DO NOT USE ALL CAPS!** It appears as if you are shouting at your classmates.
- Keep the focus on the topic at hand.
- Focus your comments on the message, not the messenger
- Avoid posting “me too” or “I agree” posts. If you have nothing more to add to the content, don’t post a reply.
- Keep your replies brief. Replies should be no longer than three paragraphs.
- Avoid the use of foul language or insults.
- Do not create a new thread unless you are indeed introducing a new idea.
- Keep discussion threads pure. Just as you don’t want to create a new thread for a topic already in progress, don’t muddy a given thread by adding something else to it.
- Check the discussion board frequently.¹⁴

Step 5. Use colour and font with care *and* Step 6. Make sure the text is readable

Preparing accessible materials for students remember to:

1. Provide good colour contrast

- Black text on a white or light background is the most readable.
- Avoid contrasting hues from adjacent parts of the hue circle, especially if the colours do not contrast sharply in lightness.



¹⁴ <https://ualr.edu/disability/online-education/discussion-board-guidelines/>

- Patterns and images behind text make it more difficult to read.
- If you are creating an HTML document to post in your course, consider using CSS to assign colours. This allows the user to change the way colours are viewed if desired.



Fig. 16. Reception of the content depending on the use of the appropriate font and colour

2. Do not use colour alone to convey meaning

- The use of colour to convey meaning may result in your images or information not being accessible to students who are colour blind.
- Some students may choose to print materials using a black and white printer. The images would not be meaningful once printed.

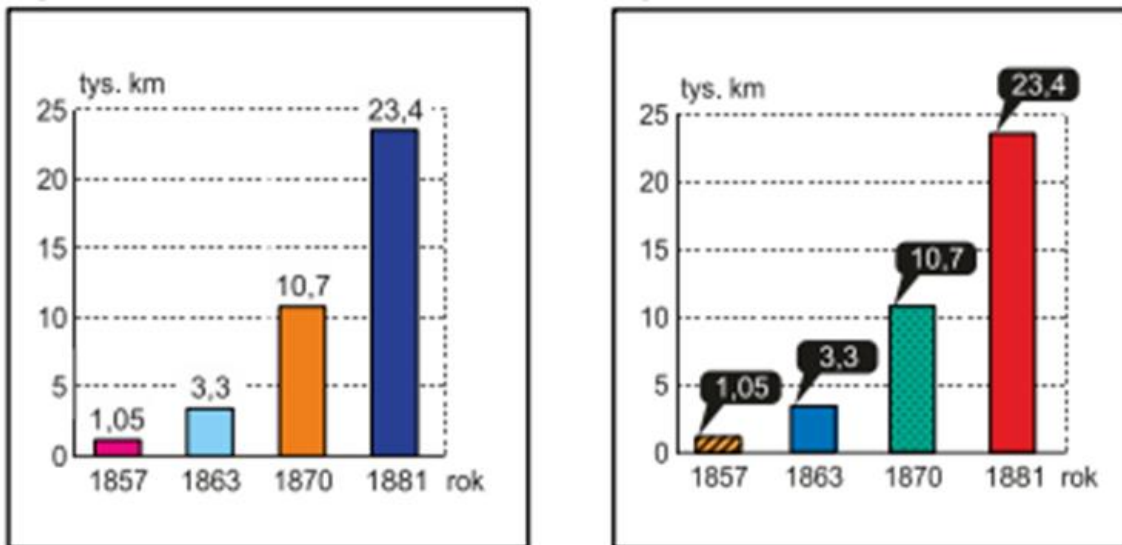


Fig. 17. An example of using contrasting colours to visually present data



3. Use accessible fonts

- The most accessible and widely available font is Arial; others include Calibri, Century Gothic, Helvetica, Tahoma and Verdana.
- A recommended minimum font size is 12 pt.
- Use **bold** to add emphasis rather than *italics* or UPPERCASE, but don't overuse it!
- Don't animate text and avoid making the letters flash or blink.

4. Limit the amount of text provided in graphics. Images may not magnify gracefully enough to be readable by students using magnification software.

Step 7. Provide accessible document formats *and* Step 8. Describe graphics and visual elements

MS Word™

Use headings to provide structure (creating headings by applying sizes, colour, bold or italics is a mistake. For someone who reads the document using a screen reader– there is no structure at all).

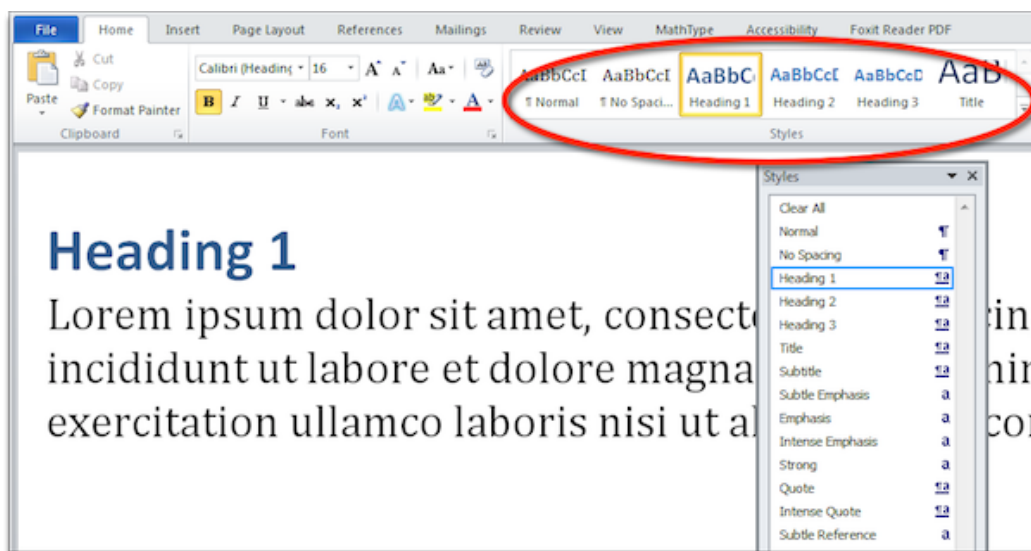


Fig. 18. Creating Headings in Word



- Provide alternative text for images.¹⁵

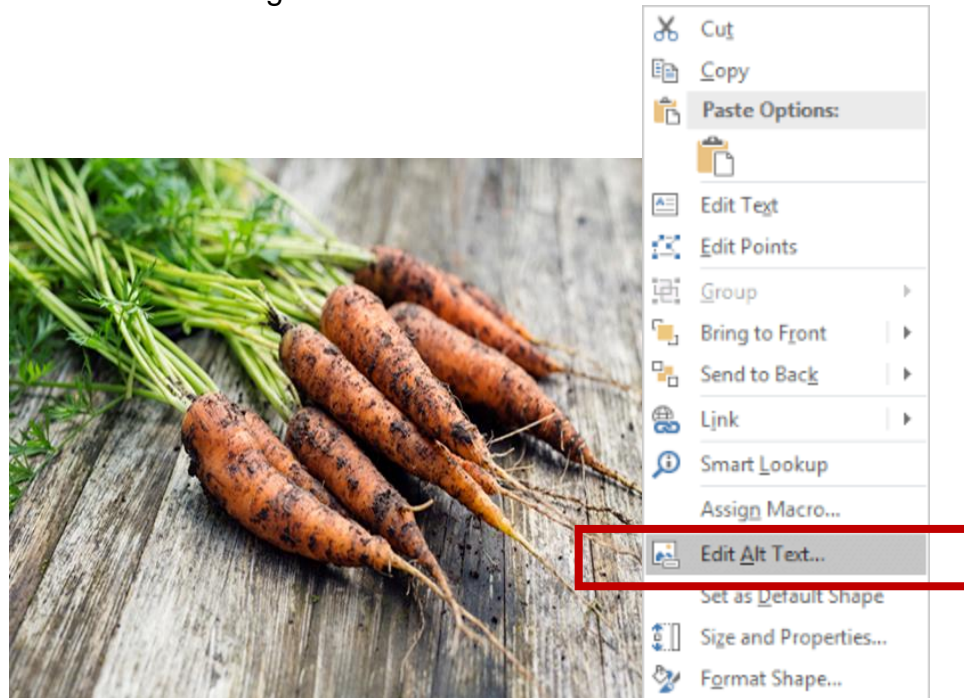


Fig. 19. Adding alt text to an object

- Make sure to add the text description by simply describing what the user who does not see the object is missing.

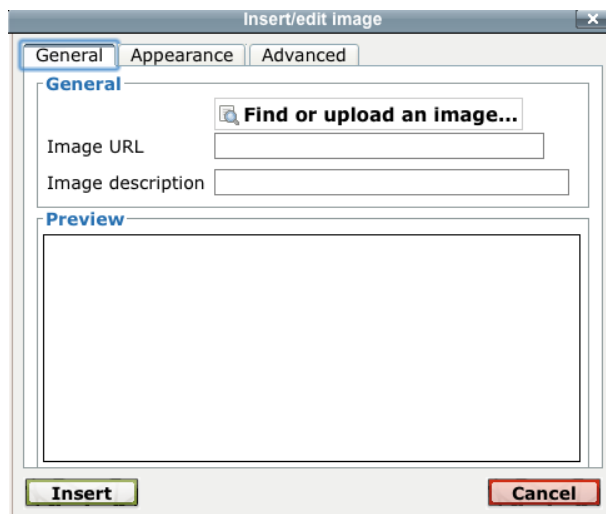


Fig. 20. Pop-up window in Moodle illustrating the prompt for an image description

¹⁵ Everything you need to know to write effective alt text you can find on <https://support.microsoft.com/en-us/topic/everything-you-need-to-know-to-write-effective-alt-text-df98f884-ca3d-456c-807b-1a1fa82f5dc2>

- Charts and graphs may require longer explanations to be meaningful. In HTML, there is an element called “long description” that can be used for this. If you are not using HTML, you need to find another way to provide that description.
- Create lists by using the actual ordered and unordered list tools.
- Avoid the use of Word Art and text box tools.

1. Adobe Acrobat™ PDF Documents

- PDF files are only as accessible as the document from which they were created. Following the instructions above and creating an accessible MS Word document is the best place to begin.
- PDF files created before Acrobat 4.0 are totally inaccessible as they are simply images of the original document.
- Some PDF files created more recently are also only images because they have been created by scanning the original document as an image.

Step 9. Caption videos and transcribe audio clips

Captioning videos requires the following steps.

- Create a transcript of your video.
- Add information about audio that is not dialogue such as music or background noise.
- Add names of speakers if appropriate.
- Add time stamps.
- Upload caption file.

Remember:

- Do not rely on automatic captioning on YouTube. It is not accurate enough to provide equal access.
- If you are using audio files with no video, you can simply create a transcript of the audio file and post it below the audio file.

Step 10. Rethink and redesign PowerPoint presentations

In order for a PowerPoint presentation to be effective as a stand-alone e-learning resource, it has to be designed differently. It is worth reconsidering whether this format is the best way to deliver our content in an online course.

To make a traditional PowerPoint more accessible to a non-visual user you should:

- Avoid starting with a blank slide and adding a custom text box.
- Instead, choose the layout that fits your slide design.
- Look at the “outline view” of the slide to see if the text on your slide is visible there.
- Describe images, charts, and graphs with an alternative text.

More info on how to make PowerPoint files more accessible is available:

<https://webaim.org/techniques/powerpoint/>



4.25. Didactic materials – 25

Digital Tools for Representation

Tool	What You Can Do	Ideas for Use Online
<i>EdPuzzle, NearPod, PearDeck, H5P</i>	<p>Supports comprehension of video input.</p> <p>Embed scaffolds like comprehension questions in self-created videos and online videos.</p> <p>Crop videos to help students to focus on the most relevant parts.</p> <p>Caption self-created videos or choose online videos that are captioned to support language learners and students with auditory challenges.</p>	<p>Asynchronous</p> <p>Embed comprehension questions throughout recorded lessons, narrated lessons, or other video input.</p> <p>Use as a formative assessment: see which students have viewed videos and their answers to questions to determine needed follow-up support.</p>
<i>Screencast-O-Matic, Screencastify (for Chrome), Quicktime (on Mac), Zoom</i>	<p>Record your screen.</p> <p>Record a video using the computer's webcam.</p> <p>Providing narration with textual lessons/ presentations provides audio support for comprehending the text for language learners and struggling readers.</p> <p>Including a video of yourself speaking allows language learners to watch you speak, which can assist in listening comprehension.</p> <p>Including a video of yourself allows teachers to use sign language to support their content.</p>	<p>Asynchronous</p> <p>Record a narrated presentation with an optional video of you speaking in the corner.</p> <p>Provide personalized tutorials: verbal instructions with visual support for how to do something (for example, how to use a technology tool, how to use features in word processing programs, etc). Record your screen while going through the process and talking through the steps.</p> <p>Record your screen to provide modelling for a specific skill or task.</p>
Video captioning (e.g. <i>YouTube Auto-Captioning, Teams Auto-Captioning, Clips (iPad app) which will auto-caption voice input</i>)	<p>Add captions to any videos to ensure access for students who are deaf or hard of hearing and language learners.</p> <p>Upload videos to YouTube, and captions will be added. Edit captions to correct any errors and add necessary punctuation.</p>	<p>Asynchronous (for making resources to use)</p> <p>Add captions to narrated PPTs, video messages, video tutorials, and any other video or audio information that you create.</p>



<p>Digital Graphic Organizers (e.g., Popplet, Chart of online Graphic Organizers)</p>	<p>Digital graphic organizers allow students to brainstorm and organize information and use multimodal elements (such as graphics and audio) to amplify the information.</p> <p>Support language learners and students with disabilities by pre-filling select keywords to support comprehension of organizational patterns.</p>	<p>Asynchronous</p> <p>Have students use during reading to organize their ideas and understanding. Use as a formative assessment to see students' understanding and connections.</p> <p>Synchronous</p> <p>Have students read together online and collaborate to organize information in a graphic organizer during an online class meeting.</p>
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Fig.21. Digital Tools for Representation

Source: Torres C., & Rao, K. (2020). *Digital Tools for Representation*. <https://schoolvirtually.org>



4.26. Didactic materials – 26

Digital Tools for Action and Expression

Tool	What You Can Do	Ideas for Use Online
Provide multimodal forms of expression		
Online and mobile apps <i>(e.g., UDL Book Builder, StoryJumper)</i>	Multimodal story building tools support the production of written text, provide built-in text-to-speech support, and image options, and can foster engagement in writing as students develop their own books and add related graphics and images. Students can read and record their own stories. Provides a creative and fun environment to develop writing skills	Asynchronous Have students create a book about themselves and their culture, and/or cultural stories to provide relevance for culturally and linguistically diverse students and language learners. Have students use story building tools as an outline prior to writing longer, formal texts.
Multimodal presentation tools <i>(Voicethread, Educreations, Explain Everything)</i>	Students can present content and stories using audio, images, text, and video. Students can create short recordings to explain concepts Gives students with disabilities and struggling writers a way to use their oral communication skills Gives language learners options to practice the language with images as scaffolds	Asynchronous Students can use these tools to teach a concept or demonstrate a process. They might create a how-to video connected to a particular interest, or use it to explain how they solved a particular math problem. Can provide a formative or summative assessment of knowledge
Infographics <i>(Adobe Spark, Piktochart, easel.ly)</i>	Students can combine text and images to present information Provides an engaging way to combine graphics and text to demonstrate knowledge; fosters student creativity and can be a support/scaffold for writing tasks	Asynchronous Students can demonstrate knowledge and understanding in a fun, creative and visual format. Gives students a chance to combine text and graphics in a professional-looking product. Can be a formative assessment, for example, creating a flyer for a product or concept related to a learning goal.
Provide scaffolds for language and knowledge production		
Online collaborative documents and tools <i>(e.g., Google Docs)</i>	Support students to build on ideas incrementally and share with peer interaction and support. Provide guidelines and language support for how to collaborate effectively and appropriately with these tools.	Asynchronous/Synchronous Provide prompts for students to collaborate on a document together. Provide headings for required sections of an assignment to provide scaffolding for students. Then assign roles and have students work on different parts and then review together.



		Have students provide peer feedback using the comment tool on student work. Provide guidance on acceptable comments.
Presentation software (e.g., Powerpoint or Google Slides)	Helps students “chunk” information as they practice writing skills. Allows students to use embed graphics (and audio/video) to support what they are writing	Asynchronous/Synchronous Provide templates for students to follow with prompts and guiding questions.
Digital graphic organizers (Read/Write/Think Story Map & Graphic Map , My Study Bar , CAST Science Writer)	Helps students organize information for stories, science lab reports, and other types of writing	Asynchronous Provide support for students to organize their ideas for stories, writing assignments, and science lab reports prior to writing.

Fig. 22. Digital Tools for Action and Expression

Source: Torres C. & Rao, K. (2020). *Digital Tools for Action and Expression*. <https://schoolvirtually.org>



4.27. Didactic materials – 27

Digital Tools for Engagement

Tool	What you can do	Ideas for use online
Provide interesting opportunities to communicate and interact		
Messaging applications (e.g., Messenger, WhatsApp)	Allows phone calls and text messages using an email address/app instead of a personal phone number.	Asynchronous/Synchronous Send a daily/weekly message to check-in and provide updates and assignments. Allow students and parents to text questions if they are not as comfortable with email.
Online Checklists (Example created in Google Forms)	Provide checklists with daily/weekly assignments and/or tasks or step-by-step instructions to chunk and scaffold projects.	Asynchronous Create checklists with a list of daily/weekly assignments for students to complete with an area for students to ask questions. Create checklists with step-by-step tasks and instructions to chunk and scaffold projects. Create daily/weekly check-in to see who is participating and how they are feeling. Create daily, weekly, or assignment-based self-assessments for students or group processing assessments for group work.
Online bulletin board (e.g. Padlet)	Shared space where students can post comments, links, or other information and can comment on each other's posts Can supports students with disabilities and language learners to have a shared forum to discuss and organize information	Asynchronous Daily/weekly check-in to see how your students are doing. Asynchronous/Synchronous Share brainstorm and post resources. Share resources for research projects.
Video applications (record short clips on a mobile device camera or on Zoom)	Record video messages. Provide personal connection with communication to support students with anxiety and provides audio support for language learners.	Asynchronous Record audio feedback for students. Use screen casting to mark student work or highlight areas of student work while providing audio feedback.
Video conferencing (e.g., Zoom, Google Meet)	Meet in real-time with audio, video, screen-sharing capabilities, and	Synchronous Meet in real-time with students to provide feedback and offer students opportunities to ask questions and apply your feedback.



	<p>optional breakout rooms to create small groups.</p> <p>Consider recording all video conferences with students, especially one-on-one meetings for your and students' protection – just as you would leave the door open when meeting with a student.</p>	<p>Use breakout rooms for students to meet and collaborate in small groups to provide peer feedback on work – Consider pairing with a task in Google Docs/Slides to monitor work and provide support when you are not in the breakout room with them.</p> <p>Meet individually with students to conference, provide feedback, and answer questions.</p> <p>Provide online mentoring/tutoring sessions.</p>
Video Sharing	<p>Video-based apps allow teachers to present key information verbally (up to 5 minutes on Flipgrid).</p> <p>Students can use video apps to record and practice speaking.</p> <p>Teachers can provide written and video response feedback on students' videos</p>	<p>Asynchronous</p> <p>Teachers can record instructions or a prompt, and students can post video replies and reply to each other.</p> <p>Teachers can post video feedback modelling the correct answer or providing support. Students can then record a new video demonstrating understanding and application of the feedback.</p>

Use feedback to stay connected

<p>Digital flashcards (<i>Quizlet, Memrise</i>)</p>	<p>Online quiz tools allow students to check their understanding, and practice vocabulary and content knowledge.</p> <p>Provides opportunities to practice, receive immediate feedback, and practice again supports language development.</p> <p>Support comprehension and recall for students with disabilities; provide language development support for language learners</p>	<p>Asynchronous</p> <p>Create flashcard sets for vocabulary practice or to support recall of content, like math facts.</p> <p>Assign one activity per day to support students' regular engagement with vocabulary (ex. Quizlet – Monday: Lean, Tuesday: Flashcards, Wednesday: Spell or Write, Thursday: Test, & Friday: Gravity or Scatter game).</p> <p>Have students create their own study sets to share with each other and reinforce their own understanding.</p>
<p>Digital Quiz Tools (<i>Kahoot, Quizlet Live</i>)</p>	<p>This provides a formative assessment tool that students can participate in and enjoy without being called out individually. The interactive format can be engaging and fun for students.</p> <p>To support language learners and students who need additional processing time, extend the wait time for students to process and answer the questions.</p>	<p>Synchronous</p> <p>Have students meet with video conferencing software or simply log in to Kahoot at the same time for a live quiz for grammar patterns, vocabulary, or content, including math practice.</p>
<p>Online formative assessments (<i>Google Forms</i>)</p>	<p>Online survey tool that allows multiple formats of questions</p>	<p>Asynchronous</p>



	<p>(multiple-choice, matching, short answer, etc.) with the option to include images (Google Form).</p> <p>Online quiz tool that allows multiple formats of questions (fill-in the blank, image labelling, cloze) and can include images.</p>	<p>Create online quizzes that students can use to self-assess comprehension of content.</p> <p>Create formative/summative assessments for students to demonstrate understanding.</p>
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Fig. 23. Digital Tools for Engagement

Source: Torres C. & Rao, K. (2020). *Digital Tools for Engagement*. <https://schoolvirtually.org>



4.28. Didactic materials – 28

Application of UDL to Online Teaching and Learning *Examples*

Representation

Fig. 24. Application of UDL to Online Teaching and Learning - examples



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4.29. Didactic materials – 29

UDL Course Analysis

It's time to evaluate one of your online learning units through the UDL lens. Choose a course module or lesson that you've designed and/or delivered. You'll be using the *UDL ON-LINE COURSE CHECKLIST* (a link to Google Form with the prepared checklist is needed).

Take a moment to reflect:

- Note the areas where you indicated "No" or "Not sure."
- Were they clustered under a particular principle?
- Identify ways you might revise the unit/lesson so that you can answer "Yes" in those areas.

UDL ONLINE COURSE CHECKLIST

Do you create an online learning environment in which...	Yes	No	Not sure
1. ideas and pieces of information are represented in multiple ways?			
Your course syllabus clearly describes the content and your expectations of the students.			
You present information in multiple formats (e.g. online lecture, text, graphics, audio, video, online exercises).			
You begin each online lecture with an outline of what will be covered.			
You summarize key points throughout the lecture and tie these points to the larger course objectives.			
You post electronic equivalents of paper handouts and required reading assignments in alternative and accessible formats such as audio and video.			
You employ various technologies that enhance learning.			
2. students can express their comprehension in multiple ways?			
You encourage students to demonstrate knowledge and skills in ways other than traditional online tests and exams (e.g., written essays, projects, portfolios, journals, videos, presentations).			
Your assessments measure students' achievement of the learning objectives, as they are stated on the syllabus.			
You incorporate technologies and digital tools that facilitate class communication and participation.			
3. students have multiple opportunities for engagement?			



Do you create an online learning environment in which...	Yes	No	Not sure
You express enthusiasm for each topic you teach and explain its real-world significance.			
You challenge students with meaningful assignments.			
You create a class climate in which student diversity is respected			
You give prompt and instructive feedback on assignments			
You supplement online lecture and reading assignments with visual aids (e.g., photographs, videos, diagrams, interactive online simulations).			
You make yourself available to students during office hours in flexible formats (e.g., online meetings, email, online chat, social media).			

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