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08.102020	FINAL		<p>Jon Switters /Susanna Laurin (FUNKA) / Katerina Mavrou (EUC) / Valentina Fiordelmundo (AIAS) / Sophia Kargouni (MARGARITA)</p> <p>Based on the original ENTELIS Taxonomy and Glossary written by Katerina Mavrou (EUC) Maria Meletiou-Mavrotheris (EUC); Evert-Jan Hoogerwerf (AIAS); Merja Sallinen (SAMK); Anne Karke (SAMK)</p>



Table of Contents

1	INTRODUCTION	4
1.1	The need for a glossary of common project concepts.....	4
1.2	Navigating the glossary.....	4
2	Taxonomy	5
2.1	Areas of education - In which are of education does the learning take place?.....	5
2.2	Setting of learning – In which physical/virtual environment does the learning take place? 6	
2.3	Reasons for learning – Why is the learner motivated to learn?.....	7
2.4	Format of learning – How is the learning process organised?	8
2.5	Expected outcomes of learning	10
2.6	Assessment of the learned	11
2.7	Formal output of learning – What will certify the learning process?	13
3	Controlled vocabulary	15
3.1	Education	15
3.2	Lifelong learning.....	17
3.3	Design of curriculum and learning programmes.....	18
3.4	People involved in the learning process.....	22
3.5	Accessibility – general related terms	24
3.6	Polices and frameworks.....	25
3.7	Methodologies and practices	28
3.8	Information and Communication Technology (ICT)	29
3.9	Assistive Technology (AT).....	35
3.10	Content.....	37
3.11	User experience (UX)	40
4	GLOSSARY OF PROJECT CONCEPTS - ALPHABETICALLY	42
4.1	A.....	42
4.2	B.....	48
4.3	C.....	49
4.4	D.....	53
4.5	E.....	55
4.6	F.....	58
4.7	G.....	59



4.8 H..... 60
4.9 I..... 61
4.10 J..... 65
4.11 K..... 65
4.12 L..... 65
4.13 M..... 67
4.14 N..... 68
4.15 O..... 68
4.16 P..... 69
4.17 Q..... 72
4.18 R..... 72
4.19 S..... 73
4.20 T..... 76
4.21 U..... 77
4.22 V..... 80
4.23 W..... 81



1 INTRODUCTION

1.1 The need for a glossary of common project concepts

As part of the ENTELIS+ project Work Package 2: Knowledge Brokering and training, Task 2.1 focuses on generating a common vocabulary with definitions of key concepts related to the key themes of the project, such as inclusive education and accessibility. This collection of terms has resulted in the creation of the ENTELIS+ glossary that is featured in this document.

The ENTELIS+ glossary of project terms builds on the [Taxonomy and Glossary](#) that was developed for the ENTELIS project that was funded by the European commission under the Lifelong Learning programme. The ENTELIS project taxonomy and Glossary focussed largely on Information and Communication Technology (ICT), learning events and processes in various educational settings. Meanwhile, the ENTELIS+ glossary will build on this approach, providing a stronger focus on accessibility-related terms covering topics such as practices and procedures, tools, design methodologies, policies and frameworks and assistive technology (AT).

The main aim of this glossary is to establish a common vocabulary amongst project consortium partners that will provide a solid technical base for the design and development of ENTELIS+ training materials in T2.2. It will also provide additional reference material to accompany the other training materials that are produced. The glossary includes definitions that have been identified during the state-of-the-art research carried out in WP1 and the consortium's own definitions on specific subjects. All references to 3rd party sources have been clearly mentioned below the definition itself. This document may be updated during the project if new terms or concepts arise in the execution of Work Packages 2 and 3.

1.2 Navigating the glossary

The entries in the glossary are presented in different ways:

1. The first part of the glossary has taken the form of a **taxonomy** based on the classification of descriptors in specific domains: areas of education, setting of learning, reasons for learning, format of learning, expected outcomes of learning, assessment of the learned, formal output of learning. This section comes directly from the ENTELIS project.
2. The second part of the glossary is a controlled vocabulary presenting key terms and that could be addressed in the ENTELIS+ training material, including: education, lifelong learning, design of curriculum and learning programmes, people involved in the learning process, accessibility, policies and frameworks, methodologies and practices, ICT, Assistive Technology, content and user experience. This section contains some terms from the ENTELIS project combined with new terms directly related to the ENTELIS+ project.

In the last part of the glossary all terms are listed in an **alphabetical list** of entries.



2 Taxonomy

As was defined in the original ENTELIS taxonomy and glossary, Taxonomy is a classification of concepts.

An important property of taxonomy is whether its categories are mutually exclusive or whether multiple categories are allowed to characterize the phenomenon of interest. Taxonomy may contain mutually exclusive categories, as well as non-mutually exclusive categories. An example of mutually exclusive categories is the distinction between formal and informal education. An example of non-mutually exclusive categories is the distinction between face-to-face learning and collaborative learning.

To classify and describe learning events many variables can be used, some of which contain mutually exclusive categories, while others contain non-mutually exclusive categories.¹

2.1 Areas of education - In which are of education does the learning take place?

Mutually exclusive categories

Formal education: Institutionalized school systems of teaching and learning based on a curriculum with predetermined purposes. Official school systems.

- **Early childhood/Pre-school education:** Educational programs and strategies geared toward young children up until the age of about eight, with a particular focus in the period before the commencement of compulsory education at primary school.
- **Primary education:** Compulsory educational programmes following pre-school/early childhood education, aiming at basic literacy of all levels and aspects. Curricula of primary education include objectives, content and methodologies for establishing foundations for all scientific fields.
- **Secondary education:** Educational programmes usually in compulsory education following primary education. Curricula of secondary education may have academic or vocational content and objectives.
- **Tertiary Education/Higher Education:** The educational level following the completion of secondary education, for the acquisition of an academic or professional degree, including universities and other institutions that provide qualifications for higher learning degrees.

¹ ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary



- **Graduate/Postgraduate:** Academic or professional programs following undergraduate education.
- **Undergraduate:** Academic programs up to the level of a bachelor's degree, following secondary education.

Non-Formal education: Organized educational activities that take place outside the formal educational system.

- **Adult Education:** A non-formal learning situation where adults engage in systematic learning activities for acquiring skills, knowledge, attitudes or values (in this case relevant to digital competences). However, it should be noted that formal education (such as tertiary education) also offers programmes for adult education.

Informal education/learning: Learning experiences outside formal or non-formal education settings.

2.2 Setting of learning – In which physical/virtual environment does the learning take place?

Mutually exclusive categories

Educational institutions: An educational organization that offers organized learning courses and activities.

- **Mainstream school:** A general formal education school for all learners, which integrates learners with disabilities.
- **Inclusive school:** A formal education school based on the philosophy of differentiation and equality of education and designed to accommodate all learners' needs regardless of disability, language, gender, religion or ethnicity, by providing accessibility in physical and learning environment. (Booth & Ainscow, 1998²; Symeonidou & Phtiaka, 2014³).
- **Special School:** A formal education school only for learners with disabilities. A special school may be specific to a certain type of disability (e.g. targeting learners with visual disabilities) or not. It is connected to the philosophy of

² Booth, T. & Ainscow, M. (1998). *From them to us: An international study of inclusion in education*. London: Routledge

³ Symeonidou, S. & Phtiaka, H. (2014). *Education for Inclusion: From research to practice*. Athens: Pedio

segregating education in contrast to inclusive education. Booth & Ainscow, 1998⁴; Symeonidou & Phtiaka, 2014⁵).

- **University:** A formal tertiary (higher) educational school that offers structured educational programmes for the acquisition of an academic degree and where academic research is conducted.
- **Vocational Training Centre:** An educational institution that offers programmes to prepare learners for specific occupations in industry, crafts, technical careers or other professional positions in various fields, traditionally non-academic.

Day care centre: An institution that provides care, rehabilitation and other facilities for people with disabilities of all ages.

Home-based learning: Structured and organised learning activities that take place in the home environment.

Assistive Technology Centre: An institution that supports the development of assistive technology learning, through various activities of education, assessment and implementation of AT for people with disabilities of all ages, families and professionals.

Community: A social unit of any size where persons with disabilities of all ages may belong and share values and experiences. It can be a face-to-face (e.g. village, neighbourhood, club, region) or a remote community (e.g. digital community, social network).

Virtual Learning Environment: A learning environment based on the web, which is “designed to act as a focus for students’ learning activities and their management and facilitation, along with the provision of content and resources required to help make the activities successful.” (JISC, 2008)⁶

2.3 Reasons for learning – Why is the learner motivated to learn?

Non mutually exclusive categories

Personal/Intrinsic motivation: Reasons to learn which are driven by an interest or enjoyment in learning, and which exist within the individual.

⁴ Booth, T. & Ainscow, M. (1998). *From them to us: An international study of inclusion in education*. London: Routledge

⁵ Symeonidou, S. & Phtiaka, H. (2014). *Education for Inclusion: From research to practice*. Athens: Pedio

⁶ ISC. (2008) Definitions: Technology enhanced learning environments areas. Available at: <http://www.jisc.ac.uk/whatwedo/programmes/elearning/tele/definitions.aspx>



- **Personal goals:** The aims set by an individual as desired results of effort and actions.
- **Personal interest:** An individual's feeling to want to learn and know about a subject.
- **Personal success:** An individual's belief to accomplish personal goals.
- **Career:** Opportunities to progress through an occupation and ongoing professional development.
- **Self-fulfilment:** The fulfilment of an individual's hopes and ambitions.

External/Extrinsic motivation: Reasons to learn which are driven or rely on external factors and pressures or a desire for reward.

- **Reward:** Anything (e.g. object, certification, grade, etc) provided in recognition of the completion of a course, or an achievement, or effort.
- **Expectations from others:** Imagined expectations or real expectations imposed on the learner by other people in his/her life (e.g. parents, friends etc.)

Incentives: Any encouragement or motivation - external or internal – for learning, such as acknowledgment.

2.4 Format of learning – How is the learning process organised?

Non-mutually exclusive categories

Blended Learning: A learning approach that combines face-to-face and computer mediated learning and instruction (Duhaney, 2004⁷). It is also referred to as hybrid learning, and it is a mixture of real time and space and virtual (online) setting that involves both synchronous and asynchronous learning.

Collaborative Learning: Learning environments in which small groups of learners work together, in a joint commitment to a shared goal (Littleton and Häkkinen, 1999⁸). It is about mutual engagement in a single unified task with shared conceptions of a problem (Roschelle & Teasley, 1995⁹), taking into consideration the social effects of working together. Collaborative learning represents a philosophy of interaction

⁷ Duhaney, D.C. (2004). Blended learning in education, training, and development, *Performance Improvement*, 43(8), 35–38

⁸ Littleton, K. and Häkkinen, P. (1999). "Learning Together: Understanding the Processes of Computer-Based Collaborative Learning." In Dillenbourg, P. (ed.) *Collaborative Learning: Cognitive and Computational Approaches*. Oxford: Pergamon. pp. 20-30.

⁹ Roschelle, J., and Teasley, S. D. (1995). "The construction of shared knowledge in collaborative problem solving." In O'Malley, C. (ed.) *Computer supported collaborative learning*. Berlin: Springer. pp. 69–97.



whereby learners are given more power over their own learning (McWhaw *et al.*, 2003¹⁰) and they elaborate their thoughts as part of the communication (Saab *et al.*, 2005¹¹).

Distance Learning: Institution-based, formal education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and instructors (Simonson, 2012¹²). Learners are not physically present in a traditional setting/classroom.

E-Learning: The use of various ICT tools and other electronic means for learning. It includes all kinds of educational technology that electronically support the process of learning and instruction. It also includes other concepts such as technology-enhanced learning (TEL), computer-based training (CBT), internet-based training (IBT), web-based training (WBT), online education, virtual education, distance education, or digital educational collaboration (Sun *et al.*, 2008¹³).

Face-to-face Learning: Any learning activity in which all participants, i.e. learners, instructors, facilitators, peers, meet together in the same place at the same time. It may involve the use of technology, but no remote communication technologies are required.

Learning by doing: The process of learning from direct experience (e.g. by using technology for other functions, following tutorials in software, etc).

Mobile Learning: Any activity that allows individuals to be more productive when consuming, interacting with, or creating information, mediated through a compact digital portable device that the individual carries on a regular basis (eLearning Guild, 2014¹⁴). It involves the use of mobile technology alone or in combination with other ICT to enable learning anytime and anywhere (UNESCO, 2014¹⁵), in formal, non-formal and informal learning environments.

Open Learning: An approach to learning which focuses on the needs of the learners as perceived by the learners (Coffey, 1988¹⁶), and which gives them flexibility and choice over what, when, at what pace, where, and how they learn. Open learning activities, which often include aspects of e-learning, either enhance

¹⁰ McWhaw, K., Schnackenberg, H., Sclater, J. and Abrami, Ph. (2003). "From co-operation to collaboration." In Gillies, R.M. and Ashman, A.F. (eds.) *Cooperative Learning: The social and intellectual outcomes of learning in groups*. London: Routledge-Falmer. pp. 69-86.

¹¹ Saab, N, Van Joolingen, W.R. and Van Hout-Wolters B.H.A.M. (2005). Communication in collaborative discovery learning. *British Journal of Educational Psychology*, 75: 603–621.

¹² Simonson, M. (2012). *Status, Definitions, and History of Distance Education*. Open University of Catalonia

¹³ Sun, P. -C. Tsai, R.J, Finger G., Chen, Y.Y. & Yeh, D. (2008). What drives a successful e-Learning? An empirical investigation of the critical factors influencing learner satisfaction. *Computers & Education*, 50(4), 1183-1202. doi:10.1016/j.compedu.2006.11.007

¹⁴ eLearning Guild. Available at <http://www.elearningguild.com/>

¹⁵ UNESCO. Mobile Learning. Available at <http://www.unesco.org/new/en/unesco/themes/icts/m4ed/>

¹⁶ Coffey, J. (1988). Guest Editorial: The Opening Learning Movement. *Innovations in Education & Training International*, 25(3), 195–96.



learning opportunities within formal education systems or broaden learning opportunities beyond formal education systems.

Peer-tutoring: Learners receive support from peers. A representation of a microcosm of the traditional classroom (Gillies & Ashman, 2003¹⁷); i.e. an unequal relationship between the tutor (teacher) and the tutee (learner), with high focus on curriculum content (Topping, 2005¹⁸).

Self-directed Learning: A process by which learners take the initiative to pursue a learning experience and the responsibility to complete their learning, without necessarily excluding the involvement of other individuals. According to Knowles' (1975)¹⁹ general definition, in self-directed learning the learners organize their own learning by recognising their learning needs, setting learning objectives, identifying learning materials and resources, implementing learning strategies and evaluating their own learning outcomes.

2.5 Expected outcomes of learning

Non-mutually exclusive categories

Direct learning outcomes

Awareness: Knowledge, information and concern about the necessity of reinforcing the digital competences of people with disabilities of all ages, in order to reduce the digital divide.

Knowledge: Facts, information, and skills acquired by a person through experience or education.

Learning skills: The ability to search, construct and critically process knowledge and information, and develop skills and attitudes based on own interests and needs.

ICT-AT competence: Skills and knowledge for using [ICT-AT](#) successfully.

ICT-AT competency: The demonstration of the ability to perform a specific task or achieve specified criteria for [ICT-AT](#).

ICT-AT skills: The ability to use [Assistive Technology](#) based on [ICT](#) (ICT-AT) to successfully perform various tasks with digital technology. These may include:

- **Computer control:** The ability to work efficiently and effectively using a computer. It requires familiarity with and understanding of the use of a

¹⁷ Gillies, R.M and Ashman, A.F. (2003). *Cooperative Learning: The social and intellectual outcomes of learning in groups*. London: RoutledgeFalmer. pp. 1-18.

¹⁸ Topping, K.J. (2005). Trends in Peer Learning. *Educational Psychology*, 25(6): 631–645.

¹⁹ Knowles, M. S. (1975). *Self-directed learning: A guide for learners and teachers*. Englewood Cliffs: Prentice Hall/Cambridge.



computer and basic IT concepts (e.g. components of a PC and Operating Systems, files and file management, classifications to manage electronic files and folders, understanding of the common types of software, etc.)

- **Internet use:** The ability to effectively use the internet. It requires essential internet skills such as efficient use of search engines to find information, use of e-mail to send and receive messages, use of the internet for online transactions (e.g. online banking, online purchases), etc. It also necessitates familiarity with safety considerations when using internet tools, and with internet ethics.
- **Social media use:** The ability to use social media sites such as Facebook, Twitter, and Myspace to communicate with others, and to create and sustain relationships with others (Boyd & Ellison, 2007²⁰).

Indirect learning outcomes

Autonomy: the perceived ability to control, cope with and make personal decisions about one's life on a day-to-day basis, according one's own rules and preferences" (Malanowski, Özcivele& Cabrera 2008²¹)

Employment opportunities: Prospects and chances provided to people with disabilities to obtain a work position in any professional, academic, scientific or other field.

Further learning opportunities: Prospects and chances provided to people with disabilities of all ages to get involved in formal or non-formal learning activities

Quality of life: The individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns (WHO, 2014²²).

Self-esteem: A person's overall sense of self-worth or personal value.

Social participation: A person's involvement and interaction with others

2.6 Assessment of the learned

Non-mutually exclusive categories

²⁰ Boyd, D.M. & Ellison, N.B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer Mediated Communication*, 13, 210-230

²¹ Malanowski, N., Özcivelek, R. & Cabrera, M. (2008). *Active Ageing and Independent Living Services: The Role of Information and Communication Technology*, Office for Publication of the European Communities, Institute for Prospective Technological Studies, Sevilla, Luxembourg.

²² WHO (2014). *The World Health Organization Quality of Life (WHOQOL)*. Available at: http://www.who.int/mental_health/publications/whoqol/en/ (accessed August 2014)



Tools for Assessment

- **Assessment Rubric:** A scaled scoring or grading guide, which provides a set of criteria and standards for judging performance and distinguishing between different levels of achievement.
- **Criterion-Referenced Assessment:** An assessment where an individual's performance is compared to a specific pre-determined learning objective or performance (and not to the performance of other students).
- **Direct Measures of Learning:** Processes used to provide direct evidence, in the form of student products or performances, of the actual learning that has occurred relating to a specific content or skill (e.g. objective tests, essays, portfolios, performances, projects, reflective essays, computer programs, and observations etc.)
- **Portfolio/Dossier Assessment:** A type of performance assessment in which learners' work is systematically collected over a period of time and is carefully reviewed and assessed for evidence of progress, effort, and achievement with respect to established learning outcomes and standards. In addition to examples of their work (e.g. samples of projects, exams, papers, presentations, videos of speeches and performances, reflective journals, etc.), most portfolios include reflective statements prepared by learners.
- **Formal tests:** Tests in which the directions of administration are clear cut and allow little, if any, discretion on the part of the teacher (e.g. university entrance examinations). Formal tests are scored in a carefully prescribed manner.
- **Standardized assessment:** An assessment designed to assist schools or other academic institutions in sorting out student performance along a continuum of ability and/or achievement. It is administered and scored in a predetermined, standard manner, so that the assessment results can be used to compare individuals or groups and highlight differences in achievement levels.
- **Summative assessment:** Accountability-oriented assessment, usually high-stakes, which is employed at the completion of a particular sequence of learning activities to provide a macro view of teaching and learning. It includes marks or grades against an expected standard that sum-up or summarise the performance for individual learners, and/or statistics about the program as a whole for internal or external accountability purposes.

Format of Assessment

- **Diagnostic assessment/Pre-assessment:** Assessment that occurs at the beginning of a unit of study, and which deliberately seeks to identify where learners' prior, or current, understandings and competencies are, in order to inform instruction accordingly.



- **Formative assessment:** Ongoing, improvement-oriented assessment which is interwoven with the learning process, and which is intended to provide regular feedback that can be used to guide improvements in teaching and learning. Assessment activities are usually low-stakes or no-stakes.
- **Performance Assessment:** The process of using student activities or products, as opposed to tests or surveys, to evaluate students' knowledge, skills, and development. In performance assessment learners either do something in front of an audience (e.g. the whole class) or make a product (such as a piece of artwork, a device that solves a problem, a working model, etc.).
- **Programme Level Assessment:** Assessment interested in the cumulative effects of the education process; it does not focus on an individual learner, but rather on what and how an academic programme is contributing to the learning, growth and development of students as a group.
- **Self-Assessment:** Assessment undertaken by the student herself or himself, on her or his own criteria, or using a shared rubric (e.g. use of a reflective journal).

Feedback: Information that the student gives the teacher or the teacher gives the student about learning processes and progress towards learning goals. Feedback can help students shape their learning approaches, and help educators shape their teaching programmes.

Evaluation: A value judgment about quality. When used in reference to educational settings, evaluation means to measure, compare, and judge the quality of student work, schools, or a specific educational programme.

2.7 Formal output of learning – What will certify the learning process?

Mutually exclusive categories

Award: A mark of recognition (e.g. a prize, an official document) provided to individuals in honour of achievement.

Certificate of attendance: A document provided to individuals that have attended a particular course, lecture or seminar which officially confirms the attendance of the course.

Certificate: A document provided to individuals that have completed a particular course which officially confirms participation in the course and completion of the requirements.

Degree: A diploma awarded in recognition of satisfactory completion of tertiary education programmes, academic or professional, in undergraduate or (post)graduate studies.



Diploma: A certificate awarded by an educational institution as evidence of an individual's successful completion of a course of study.



3 Controlled vocabulary

3.1 Education

Assistive Technology (AT) Learning: The acquisition of knowledge and skills, and the development of attitudes or values for the use of assistive technology, through practicing, studying, teaching and/or experiencing, in every aspect of life.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Digital Divide: A term that refers to the gaps in access to information and communication technology (ICT) - threatens the ICT "have-nots", whether individuals, groups or entire countries. Education and learning lie at the heart of these issues and their solutions. The gaps that define the "learning digital divide" are thus as important as the more obvious gaps in access to the technology itself.

Source: OECD:

<https://www.oecd.org/site/schoolingfortomorrowknowledgebase/themes/ict/bridgingthedigitaldivide.htm>

A term that refers financial, educational and social inequalities and expresses the difference between different people or groups of people (e.g. persons with disabilities, older adults, persons in different geographical regions, etc) in accessing and utilising the possibilities and benefits of technology.

Source: Mossberger, 2003; Hilbert, 2013; Jaeger et al, 2014

Digital Literacy: The acquisition of knowledge and skills, and the development of attitudes or values for effectively choosing and using ICT and ICT-AT. It is a blend of information, communication and technology literacy, including the basic knowledge and skills for using technology, acknowledging the possibilities it offers, and developing critical thinking for uses and resources.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Digital Skills: A range of abilities to use digital devices, communication applications, and networks to access and manage information.

Source: UNESCO: <https://en.unesco.org/news/digital-skills-critical-jobs-and-social-inclusion#:~:text=Digital%20skills%20are%20defined%20as,to%20access%20and%20manage%20information>

Assistive Technology Learning: The acquisition of knowledge and skills, and the development of attitudes or values about digital competences (i.e. the use Assistive



Technology based on ICT – ICT-AT) by people with disabilities of all ages, through practicing, studying, teaching and/or experiencing, in every aspect of life.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Assistive Technology for learning: The use of ICT-AT by people with disabilities of all ages in order to receive, construct and process knowledge and develop skills and attitudes based on their individual needs and abilities.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Inclusive education: Young people - no matter who they are - can learn together in the same school. This entails reaching out to all learners and removing all barriers that could limit participation and achievement. Disability is one of the main causes of exclusion; however, there are also other social, institutional, physical, and attitudinal barriers to inclusive education.

Source: UNESCO: <http://www.iiep.unesco.org/en/inclusive-education>

Inclusive pedagogy: An approach to teaching and learning that attends to individual differences between pupils but avoids the marginalisation that can occur when pedagogical responses are designed only with individual needs in mind. Instead of providing something different or additional for children who experience difficulties in their learning, inclusive pedagogy seeks to extend what is ordinarily available to everybody.

Source: Florian, L. and Black-Hawkins, K., 2011. Exploring Inclusive Pedagogy. British Educational Research Journal, 37(5), pp. 813-828.

<https://www.tandfonline.com/doi/abs/10.1080/13603116.2017.1412513?journalCode=tied20>

Information and Communication Technology (ICT) Learning: The acquisition of knowledge and skills, and the development of attitudes or values for the use of ICT, through practicing, studying, teaching and/or experiencing, in every aspect of life.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Gamification: The application of typical elements of game playing (e.g. point scoring, competition with others, rules of play) to other areas of activity, typically as an online marketing technique to encourage engagement with a product or service.

Source: Oxford University Press (2020 In: Lexico.com, Available at:

<https://www.lexico.com/en/definition/gamification>)



Learning with ICT-AT: The acquisition of knowledge and skills, and the development of attitudes or values, through using digital technologies (ICT-AT) by people with disabilities of all ages.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

3.2 Lifelong learning

All of this section has been taken from the ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Continuing Professional Development (CPD): Learning activities through which professionals maintain and enhance their knowledge and skills related to their profession. CPD necessitates commitment of professionals to lifelong learning, i.e. to the continued updating of their skills and knowledge in order to remain professionally competent and achieve their true potential. It can combine different methodologies to learning (e. g training workshops, conferences, e-learning programs, etc.) all focused for an individual to improve and have effective professional development.

Digital/ Information society: The modern society where new technologies (ICT) are utilized in every spectrum of social, political and economical sectors

Initial education: Formal education of individuals before their first entrance to the labour market.

Lifelong learning: According to the European Commission (2001)²³, "Lifelong learning is all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and/or employment-related perspective." (p.10). Lifelong learning crosses sectors, promotes learning beyond traditional schooling and throughout adult life. It is flexible, diverse and available at different times and in different places.

Vocational education: Educational programmes that prepare learners for specific occupations in industry, crafts, technical careers or other professional positions in

²³ European Commission (2001) *Making a European area of lifelong learning a reality*, Brussels, COM(2001) 428final



various fields, traditionally non-academic. Curricula of vocational education include learning objectives and strategies for the development of expertise in particular skills and techniques.

Vocational in-service training: Educational programmes delivered during an individual's employment, often organised by the employer, which provide learners with additional skills and expertise specific to their occupation.

3.3 Design of curriculum and learning programmes

All of this section has been taken from the ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Assessment: A general term that describes the process of collecting, analysing, and interpreting information in order to measure the extent of achieving the intended outcomes for student learning, program effectiveness, institutional effectiveness, etc.

- **Assessment as learning:** Assessment as learning occurs when learners are actively engaged in the assessment process; by reflecting on and monitoring their own progress to inform their future learning goals.
- **Assessment for learning:** Assessment for learning involves the employment of formal and informal assessment activities at the beginning of instruction (diagnostic assessment), and throughout the teaching and learning process (formative assessment) in order to obtain evidence about students' knowledge, understanding and skills and to inform the planning of future teaching learning
- **Assessment of learning.** The process of collecting, analyzing and interpreting evidence for the purpose of making judgments about a student's level of achievement in regards to specific learning expectations and standards. A synonym for "summative assessment", it usually occurs at defined key points during a unit of work or at the end of a unit, term or semester, and may be used to rank or grade students.

Accreditation: A process through which official recognition of meeting all formal official requirements of academic excellence, curriculum, facilities, etc. is presented.

Certification: Formal procedure by which an accredited or authorized person or agency assesses, in accordance with established requirements or standards, and verifies (through the issuing of an official certificate) the attributes, characteristics,



quality, qualification, or status of individuals or organizations, or procedures or processes,

- **Certified / Accredited ICT-AT course:** A course in which learners are involved in activities for developing ICT-AT competences towards the acquisition of a particular certification (e.g. ECDL).

Competence framework: a structured overview of learning outcomes describing levels of competence and allowing the definition of progression in learning.

Learning Content: Generally the term content refers the knowledge elements provided in a course or learning programme on which the learning is based.

Course: A learning event developed and implemented with a particular set of learning objectives and activities for the acquisition of specific knowledge and skills.

- **ICT competences course:** A formal or non-formal education course during which learners are engaged in learning activities for the acquisition of knowledge and skills, to use ICT, through practicing and studying.
- **ICT-AT specific course:** A formal or non-formal education course during which learners are engaged in learning activities for the acquisition of knowledge and skills, to use digital technology for people with disabilities of all ages, through practicing and studying.
- **Needs based course:** A course designed, implemented and assessed according to the needs of the learners it is addressed to. A learning needs assessment process precedes the design and development of the course.
- **Non-certified ICT-AT course:** A course in which learners are involved in activities for developing ICT-AT competences without the acquisition of a certification.

Curriculum: According to Hilda Taba (1962)²⁴ “all curricula, no matter what their particular design, are composed of certain elements. A curriculum usually contains a

²⁴ Taba, H. 1962. Curriculum development: theory and practice. New York, NY: Harcourt, Brace & World



statement of aims and of specific objectives; it indicates some selection and organization of content; it either implies or manifests certain patterns of learning and teaching, whether because the objectives demand them or because the content organization requires them. Finally, it includes a program of evaluation of the outcomes."

- **Structured curriculum:** A plan for interaction with learners which involves instructional objectives, content, materials and process for evaluating learning. Content is organized in specific units/sessions and corresponds to objectives and evaluation strategies.
 - **Humanistic curriculum (model for ICT):** A curriculum where ICT-AT are considered as cross-curricular tools. It regards the computer (and technology), not as an isolated course but as a tool which empowers learners with knowledge, thinking skills and problem solving alternatives (Karagiorgi, 2013²⁵). Focus shifts from learning about computers to using computers in learning. Emphasis is placed on the learner as a constructor of knowledge, while traditional curriculum areas are approached in independent and flexible pathways (Nicholson, 1995²⁶).
 - **Technocentric curriculum (model for ICT):** A curriculum where ICT-AT competencies are considered as a discrete curricular subject. It aims to equip learners with the necessary skills deemed important for their future (Nicholson, 1995²⁷), considering ICT literacy as the acquisition of basic digital skills (Karagiorgi, 2013²⁸).
 - **Inclusive curriculum:** A common curriculum for all learners where the general aims are universal, but the programme objectives and teaching strategies can and should differ, whereas areas of learning can be either common or different (Norwich & Lewis, 2007²⁹)

Learning goals or Goals for Learning: Broad statements used to express intended results in general terms (e.g. problem solving, ethical awareness, etc.)

²⁵ Karagiorgi, Y. (2013). Locating ICT for primary education in a reformed Greek-Cypriot national curriculum: A documentary analysis approach. *Education and Information Technologies*, 8(2), 1-22

²⁶ Nicholson, P. (1995). A curriculum for teachers or for learning? In D. Watson & D. Tinsley (Eds.), *Integrating information technology into education*. London: IFIP and Chapman and Hall.

²⁷ Nicholson, P. (1995). A curriculum for teachers or for learning? In D. Watson & D. Tinsley (Eds.), *Integrating information technology into education*. London: IFIP and Chapman and Hall.

²⁸ Karagiorgi, Y. (2013). Locating ICT for primary education in a reformed Greek-Cypriot national curriculum: A documentary analysis approach. *Education and Information Technologies*, 8(2), 1-22

²⁹ Norwich, B., and Lewis, A. (2007). How Specialized is Teaching Children with Disabilities and Difficulties? *Journal of Curriculum Studies*, 39(2): 127–150.



Learning needs: The gap between a learner's current level and the desired level of knowledge, skills, or attitudes.

Learning Objectives: Clear, concise statements that are used to express intended learning outcomes in precise terms. Refer to specific tasks needed to accomplish the goals of the program, and serve as a guide in selecting appropriate assessment tools.

Learning Outcomes (Outcome Behaviours): Operational statements that identify the specific student behaviours that evidence the attainment of the intended learning objectives, e.g. the acquisition of desired knowledge, skills, abilities, capacities, attitudes or dispositions for ICT-AT.

Learning programmes: Learning programmes are intentionally designed and properly described educational interventions that aim at obtaining well specified learning outcomes.

Measures of learning: A general term to describe how we know if learners have learned what we wanted them to learn or have achieved the skills we wanted them to achieve.

Individualized Educational Programme (IEP): A learning plan with individualised learning objectives, proposed learning/teaching methodology and evaluation strategies for the needs of an individual learner with disabilities.

Universal Design for Learning: Universal Design for Learning refers to a process by which a curriculum (goals, methods, materials, and assessment) is intentionally and systematically designed from the beginning to address individual differences (CAST 2011, 9³⁰).

³⁰ CAST (2011). *Universal Design for Learning Guidelines Version 2.0*. Wakefield, MA: CAST

3.4 People involved in the learning process

Assistive Technology team: A multidisciplinary team including various professionals in education, rehabilitation and technology (e.g. assistive technology specialist, teacher/educator, special education teacher, occupational therapist, speech and language therapist, provider, designer, etc), family members/carers and the end-user that collaborate for the assessment of needs, selection of solutions, implementation and follow-up for the effective use of AT by a person with disabilities (end-user).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Assistive Technology Service/Provider: Any service that directly assists an individual with a disability in the selection, acquisition or use of an assistive technology device.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Carer/caregiver: A family member or a paid or volunteer individual that regularly supports a person with disabilities of any age.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Educator / Teacher: A person who provides instruction and supports learning process in educational environments of a person with disabilities.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

End-User: A person with disabilities of any age that uses or will use any ICT-AT product or service.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Instructor: A person who provides instruction and supports the learner's learning process.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary



Family members: The group of people (e.g. parents, siblings, spouse, husband, children or other relatives) that support and have close interaction with a person with disabilities of any age and who are involved in the person's daily life.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Learner: A person with disabilities of any age who is involved in learning, in any learning setting.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Peer: A person who interacts in any way with a person with disabilities of all ages in the learning process and/or its implementation.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Pupil: A person with disabilities of school age (around 3-18 years) that attends a formal educational setting/school up to secondary education.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Student: A person with disabilities of all ages that attends any formal or non-formal educational setting/school.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Trainee: A person with disabilities of all ages who receives training (for ICT-AT competences).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Trainer: An instructor who delivers courses on ICT-AT skills for people with disabilities of all ages.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

User: The end-user or any person who is close to the end-user (e.g. family member, educator, carer etc) and is involved in the use of any ICT-AT product or service.



Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

3.5 Accessibility – general related terms

Accessibility: Extent to which products, systems, services, environments and facilities can be used by people from a population with the widest range of user needs, characteristics and capabilities to achieve identified goals in identified contexts of use.

Source: ISO/IEC 30071-1:2019 (en)

Accessibility problem: Can be defined as non-compliance with minimum requirements or inaccessibility perceived by end users.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Active and Assisted Living (AAL): Comprises concepts, products, and services that combine new technologies and the social environment in order to improve quality of life during all periods of life.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

Ageing-related conditions: Changes in people's functional ability due to ageing can include subtle and/or gradual changes in abilities or a combination of abilities including vision, hearing, dexterity and memory. Any one of these limitations can affect an individual's ability to access Web content.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Gerontechnology: Designing technology and environment for independent living and social participation of older persons in good health, comfort and safety.

Source: International Society for Gerontechnology: <http://www.gerontechnology.org/about.html>

Inclusive society: A society that over-rides differences of race, gender, lass, generation, and geography, and ensures inclusion, equality of opportunity as well as capability of all members of the society to determine an agreed set of social institutions that govern social interaction.

Source: Expert Group Meeting on Promoting Social Integration, Helsinki, July 2008 - Retrieved from <https://www.un.org/esa/socdev/egms/docs/2009/Ghana/inclusive-society.pdf>



Natural languages: Languages used by humans to communicate, including spoken, written, and [signed languages](#).

Source: Own elaboration

Privacy: Preventing the unintended or unauthorized disclosure of information about a person. Such information may be contained within a message, but may also be inferred from patterns of communication; e.g. when communications happen, the types of resource accessed, the parties with whom communication occurs, etc.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Sign language interpretation: Translation of spoken words and other audible information into a language that uses a simultaneous combination of handshapes, facial expressions, and orientation and movement of the hands, arms, or body to convey meaning. The national sign language is the maternal language of persons who are born deaf and a second language for person who become deaf.

Source: Own elaboration

Telecare: Term for offering remote care of older and physically less able people.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

Web Accessibility: Web accessibility means that [websites](#), tools, and technologies are designed and developed so that people with disabilities can use them

Source: Own elaboration

3.6 Policies and frameworks

Authoring Tool Accessibility Guidelines (ATAG): Guidelines that explain how to:

- make the authoring tools themselves accessible, so that people with disabilities can create web content, and
- help authors create more accessible web content — specifically: enable, support, and promote the production of content that conforms to [Web Content Accessibility Guidelines \(WCAG\)](#).

ATAG is part of a series of accessibility guidelines, including the Web Content Accessibility Guidelines (WCAG) and the [User Agent Accessibility Guidelines \(UAAG\)](#). Essential Components of [Web Accessibility](#) explains the relationship between the different guidelines.



It is important to note that the ATAG guidelines have not been updated since 2015 and are currently not reflecting the minimum requirements of the [Web Accessibility Directive](#)

Source: W3C Web Accessibility Initiative: <https://www.w3.org/WAI/standards-guidelines/atag/>

Charter of fundamental rights of the European Union: This Charter reaffirms, with due regard for the powers and tasks of the Union and for the principle of subsidiarity, the rights as they result, in particular, from the constitutional traditions and international obligations common to the Member States, the European Convention for the Protection of Human Rights and Fundamental Freedoms, the Social Charters adopted by the Union and by the Council of Europe and the case-law of the Court of Justice of the European Union and of the European Court of Human Rights. In this context the Charter will be interpreted by the courts of the Union and the Member States with due regard to the explanations prepared under the authority of the Praesidium of the Convention which drafted the Charter and updated under the responsibility of the Praesidium of the European Convention.

Source: EUR-Lex: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:12012P/TXT>

EN301549: The European standard for Accessibility Requirements of ICT products and services. Relevant parts of this standard is presumed conformance to the [Web Accessibility Directive](#).

Source:

https://www.etsi.org/deliver/etsi_en/301500_301599/301549/02.01.02_60/en_301549v020102p.pdf

EU Disability strategy 2010-2020: The [European disability strategy 2010-2020](#) aims to promote a barrier-free Europe and at empower people with disabilities so that they can enjoy their rights and participate fully in society and economy.

Source: <https://ec.europa.eu/social/main.jsp?catId=1484&langId=en>

European Accessibility Act: The EAA requires for commercial products and services to comply with [accessibility](#) requirements. It will be transposed into national legislation by June 2022 and the first grace period ends by 2025.

Source: European Commission: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019L0882>

European Home Systems (EHS): Protocol aimed at home appliances control and communication using power line communication. It is one of the smart home systems that converged to form the [KNX standard](#).

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019



Procurement Directive: The Procurement Directive gives bodies procuring products and services over the threshold support for accessibility requirements. With the [European Accessibility Act](#), the directive will have increased impact.

Source: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0024>

United Nations Convention on the Rights of Persons with Disabilities

(UNCRPD): The Convention follows decades of work by the United Nations to change attitudes and approaches to persons with disabilities. It takes to a new height the movement from viewing persons with disabilities as “objects” of charity, medical treatment and social protection towards viewing persons with disabilities as “subjects” with rights, who are capable of claiming those rights and making decisions for their lives based on their free and informed consent as well as being active members of society.

The Convention on the Rights of Persons with Disabilities and its Optional Protocol (A/RES/61/106) was adopted on 13 December 2006 at the United Nations Headquarters in New York and was opened for signature on 30 March 2007. There were 82 signatories to the Convention, 44 signatories to the Optional Protocol, and 1 ratification of the Convention. It is the first comprehensive human rights treaty of the 21st century and is the first human rights convention to be open for signature by regional integration organizations. The Convention entered into force on 3 May 2008.

Source: United Nations: <https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html>

User Agent Accessibility Guidelines (UAAG): Guidelines that explain how to make user agents accessible to people with disabilities. User agents include [browsers](#), browser extensions, media players, [screen readers](#) and other applications that render web content.

Source: W3C Web Accessibility Initiative: [https://www.w3.org/WAI/standards-guidelines/uaag/#:-:text=Who%20develops%20UAAG-.User%20Agent%20Accessibility%20Guidelines%20\(UAAG\),applications%20that%20render%20web%20content](https://www.w3.org/WAI/standards-guidelines/uaag/#:-:text=Who%20develops%20UAAG-.User%20Agent%20Accessibility%20Guidelines%20(UAAG),applications%20that%20render%20web%20content).

Web Accessibility Directive: The directive states that public sector agencies and other bodies governed by public law must comply with minimum [accessibility](#) requirements in the [EN301549](#) v 2.1.2.

Source: <https://eur-lex.europa.eu/eli/dir/2016/2102/oj>

Web Content Accessibility Guidelines (WCAG): Guidelines developed through the W3C process in cooperation with individuals and organizations around the world, with a goal of providing a single shared standard for web content accessibility that meets the needs of individuals, organizations, and governments internationally. The WCAG documents explain how to make web content more accessible to people with



disabilities. Web “content” generally refers to the information in a webpage or web application, including: natural information such as [text](#), [images](#), and sounds code or markup that defines structure, presentation, etc.

Source: W3C Web Accessibility Initiative: <https://www.w3.org/WAI/standards-guidelines/wcag/>

Web of Things (WoT): Set of Standard developed by W3C intended to enable interoperability across IoT platforms and application domains.

Source: <https://www.w3.org/TR/wot-architecture/Overview.html>

3.7 Methodologies and practices

Accessible authoring practice: Practices that improve the accessibility of Web content. Both authors and tools engage in accessible authoring practices.

Source: [ATAG10] 2001-01-12 "Authoring Tool Accessibility Guidelines 1.0" J. Treviranus, C. McCathieNevile, I. Jacobs, and J. Richards, eds., 3 February 2000. This W3C Recommendation is <http://www.w3.org/TR/2000/REC-ATAG10-20000203/>

Accessible design: is a design process in which the needs of people with disabilities are specifically considered. [Accessibility](#) sometimes refers to the characteristic that products, services and facilities can be independently used by people with a variety of disabilities.

Source: <https://www.washington.edu/doit/what-difference-between-accessible-usable-and-universal-design>

Augmentative and Alternative Communication (AAC): A variety of techniques and tools, including picture communication boards, line drawings, speech-generating devices (SGDs), tangible objects, manual signs, gestures, and finger spelling, to help the individual express thoughts, wants and needs, feelings, and ideas.

Source: ASHA American Speech-Language-Hearing Association: <https://www.asha.org/Practice-Portal/Professional-Issues/Augmentative-and-Alternative-Communication/>

Co-design: Co-design is the act of creating with stakeholders (business or customers) specifically within the design development process to ensure the results meet their needs and are usable. (Co-design may also be called participatory design- a term which is used more often within the design community.)

Source: https://en.wikipedia.org/wiki/Participatory_design

Inclusive design: The concept of designing mainstream products and/or services to be accessible to, and usable by, as many people as reasonably possible ... without the need for special adaptation or specialised design.



Source: Definition by the British Standard Institute - Retrieved from:
<http://www.inclusivedesigntoolkit.com/whatis/whatis.html>

Mobile-first design: This is a way of looking at design based on user behaviour. When a majority of the users are using their smartphone, it makes sense to design for mobile. These days, responsive design is more relevant, as users generally have all sorts of devices and screens in all shapes and sizes (anything from Apple watch via smartphones, tablets, portable computers to very big screens). Therefore, the interface of most content must be dynamic – not aimed at just one size.

Source: https://www.w3schools.com/html/html_responsive.asp

Responsive Web Design: An approach to web design that makes [webpages](#) render well on a variety of devices and window or screen sizes. A site designed with RWD adapts the layout to the viewing environment by using fluid, proportion-based grids, flexible [images](#), and CSS3 media queries.

Source: Wikipedia

Universal design: Universal Design is the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability.

Source: <http://universaldesign.ie/What-is-Universal-Design/>

User Centred Design (UCD): A user [interface](#) design process that focuses on [usability](#) goals, user characteristics, environment, tasks, and workflow in the design of an interface. UCD follows a series of well-defined methods and techniques for analysis, design, and evaluation of mainstream hardware, software, and web interfaces. The UCD process is an iterative process, where design and evaluation steps are built in from the first stage of projects, through implementation.

Source: Shawn Lawton Henry and Mary Martinson, Accessibility in User-Centered Design

3.8 Information and Communication Technology (ICT)

Android ([operating system](#)): Android is a mobile operating system based on a modified version of the Linux kernel and other open source software, designed primarily for touchscreen mobile devices such as smartphones and tablets.

Source: [https://en.wikipedia.org/wiki/Android_\(operating_system\)](https://en.wikipedia.org/wiki/Android_(operating_system))

Application Programming Interface (API): A set of clearly defined methods of communication between various software components.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019



Application software (APP): is a programme or groups of programmes designed for end users. Examples of an application include a word processor, a spreadsheet, an accounting application, a web [browser](#), an email client, a media player, a file viewer, simulators, a console game or a photo editor.

Source: https://en.wikipedia.org/wiki/Application_software

Artificial intelligence (AI): The ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience.

Source: Encyclopaedia Britannica: <https://www.britannica.com/technology/artificial-intelligence>

Authentication: The process or action of verifying the identity of a user or process.

Source: Oxford University Press (2020 In: Lexico.com, Available at: <https://www.lexico.com/en/definition/authentication>

Authoring tools: Any software that is used to produce content for publishing on the Web.

Source: WAI (Printable) Glossary, online July 2020: <https://www.w3.org/WAI/GL/Glossary/printable.html>

Automatic accessibility testing tool: There are about 150 different kinds of automatic tools for testing digital accessibility. Some are open source, others are licensed, and some are built into other systems, for example [authoring tools](#). Automatic accessibility testing tools can target developers, designers, web authors, website owners or a mix of different roles.

Source: Own elaboration

Browser: A system entity that is used by an end user to access a [Website](#). A browser provides a run-time environment for distributed application components on the client's device.

Source: WAI (Printable) Glossary, online July 2020: <https://www.w3.org/WAI/GL/Glossary/printable.html>

Cache: A storage area used by a server or proxy to store data resources that have been retrieved or created in response to a request. When a new request for a



"cached" data resource is received, the server or proxy can respond with the cached version instead of retrieving or creating a new copy.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Cascading Style Sheets (CSS): Style sheets describe how documents are presented on screens, in print, and even in spoken voice. Style sheets allow the user to change the appearance of hundreds of Webpages by changing just one file. A style sheet is made up of rules that tell a browser how to present a document. Numerous properties may be defined for an element; each property is given a value.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Character: Strings consist of a sequence of zero or more characters, where a character is defined as in the XML Recommendation [XML]. A single character in P3P thus corresponds to a single Unicode abstract character with a single corresponding Unicode scalar value.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Client: A computer system or process that requests a service of another computer system or process (a "server") using some kind of protocol and accepts the server's responses. A client is part of a client-server software architecture.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Cloud: A network of remote servers hosted on the Internet and used to store, manage, and process data in place of local servers or personal computers.

Source: Oxford University Press (2020 In: Lexico.com, Available at:
<https://www.lexico.com/en/definition/cloud>)

Cookie: Data sent by a Web [server](#) to a Web [client](#), to be stored locally by the client and sent back to the server on subsequent requests.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Cross platform software: Computer software that is capable of being implemented on multiple different platforms

Source: https://en.wikipedia.org/wiki/Cross-platform_software#cite_note-Sun-Web-00-2



Data: Information in a specific physical representation, usually a sequence of symbols that have meaning; especially a representation of information that can be processed or produced by a computer.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Digital Signature: A very large number created in such a way that it can be shown to have been done only by somebody in possession of a secret key and only by processing a document with a particular content. It can be used for the same purposes as a person's handwritten signature on a physical document. Something you can do with public key cryptography.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Event: An action taken by the user, a condition that occurs in the operating system, or a condition occurring over a network. A user event might be pressing the Enter key; an OS event might be the system time reaching some preset value; a network event might be the completion of a file download.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Hypertext Markup Language (HTML): A standardised system for tagging text files to achieve font, colour, [graphic](#), and hyperlink effects on Worldwide Webpages.

Source: Oxford Dictionary: <https://www.lexico.com/en/definition/html>

Input device: An input device is any hardware device that sends data to a computer, allowing you to interact with and control it. Apart from keyboard and mouse, there are several other ways of providing input to a computer, for example a range of [assistive technology](#).

Source: <https://www.especialneeds.com/shop/assistive-technology/computer-accessibility-tool-for-special-needs/assistive-technology-input-devices.html>

Interfaces: Shared boundary across at which two or more distinct components of a system interact; for example, the user interface of a computer is where the computer's hardware, software, and the human user interact.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

Interoperability: The ability of software and hardware on multiple machines from multiple vendors to communicate meaningfully.



Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Internet of Things (IoT): Network of physical devices, vehicles, home appliances, and other items embedded with electronics that enable these objects to connect and exchange data.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

IOS: A mobile [operating system](#) created and developed by Apple Inc. exclusively for its hardware.

Source: <https://en.wikipedia.org/wiki/IOS>

Javascript: An [object](#)-oriented computer programming language commonly used to create interactive effects within web browsers.

Source: Oxford Dictionary: <https://www.lexico.com/definition/javascript>

KNX: Standardised OSI-based network communications protocol for building automation.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

Objects: An identifiable, encapsulated entity that provides one or more services requested by a client. Objects can refer to the objects in OOP (object-oriented programming) or the objects in OLE (Object Linking and Embedding). In object-oriented programming, objects are the things you think about first in designing a programme and they are also the units of code that are eventually derived from the process.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Operating system: A system software that manages computer hardware, software resources, and provides common services for computer programmes.

Source: https://en.wikipedia.org/wiki/Operating_system

Personally identifiable data: Any information relating to an identified or identifiable individual.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Personal Digital Assistant (PDA): Also known as a handheld PC; mobile device that functions as a personal information manager.



Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

Plaintext: Data that is input to and transformed by an encryption process, or that is output by a decryption process.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Platform-as-a-service: A type of cloud computing offering in which a service provider delivers a platform to clients, enabling them to develop, run, and manage business applications without the need to build and maintain the infrastructure such software development processes typically require.

Source: <https://www.infoworld.com/article/3223434/what-is-paas-software-development-in-the-cloud.html>

Plug-in: A programme that runs as part of the user agent and that is not part of content. Users generally choose to include or exclude plug-ins from their user agent.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Repository: A mechanism for storing user information under the control of the user agent.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Router: A computer that is a gateway between two networks at OSI layer 3 and that relays and directs data packets through that internetwork. The most common form of router operates on IP packets. In the context of the Internet protocol suite, a networked computer that forwards Internet Protocol packets that are not addressed to the computer itself.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Script: A scripting (programming) language used to create dynamic Web content. However, in checkpoints referring to the written (natural) language of content, the term "script" is used as in Unicode [UNICODE] to mean "A collection of symbols used to represent textual information in one or more writing systems." Information encoded in (programming) scripts may be difficult for a user agent to recognize.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>



Server: An application programme that accepts connections in order to service requests by sending back responses. Any given programme may be capable of being both a client and a server; our use of these terms refers only to the role being performed by the programme for a particular connection, rather than to the programme's capabilities in general. Likewise, any server may act as an origin server, proxy, gateway, or tunnel, switching behaviour based on the nature of each request.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Software-as-a-service: A method of software delivery and licensing in which software is accessed online via a subscription, rather than bought and installed on individual computers.

Source: Oxford University Press (2020 In: Lexico.com, Available at:
<https://www.lexico.com/en/definition/saas>

Unicode: A character coding scheme that uses 16 bits for each character, designed to extend the capabilities of ASCII, which uses seven bits. Nearly all letters and symbols in all languages can be represented in a standard way with Unicode. The first 128 characters of Unicode are identical to those in standard ASCII. Unicode is an entirely new idea in setting up binary codes for text or script characters. Officially called the Unicode Worldwide Character Standard, it is a system for "the interchange, processing, and display of the written texts of the diverse languages of the modern world." It also supports many classical and historical texts in a number of languages.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Web service: A software system identified by a URI [RFC 2396], whose public interfaces and bindings are defined and described using XML. Its definition can be discovered by other software systems. These systems may then interact with the Web service in a manner prescribed by its definition, using XML based messages conveyed by Internet protocols. A collection of EndPoints.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

3.9 Assistive Technology (AT)

Assistive technology: Devices and technologies whose primary purpose is to maintain or improve an individual's functioning and independence to facilitate participation and to enhance overall well-being. They can also help prevent impairments and secondary health conditions. Examples of assistive devices and technologies include wheelchairs, prostheses, hearings aids, visual aids, and



specialized computer software and hardware that increase mobility, hearing, vision, or communication capacities.

Source: World Health Organization: <https://www.who.int/disabilities/technology/en/>

Assistive Technology for communication: The use of ICT-AT by people with disabilities of all ages in order to participate in a bidirectional exchange of messages through any type of language system and/or mediator, for personal, social or other purposes.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Alternative keyboards or switches: Hardware or software devices used by people with physical disabilities, that provide an alternate way of creating keystrokes that appear to come from the standard keyboard.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Automated Speech Recognition (ASR): The use of computer hardware and software-based techniques to identify and process human voice. It is used to identify the words a person has spoken or to authenticate the identity of the person speaking into the system. It is also known as automatic voice recognition (AVR), voice-to-text or simply speech recognition.

Source: Techopedia: <https://www.techopedia.com/definition/6044/automatic-speech-recognition-asr>

Electronic Aids to Daily Life (EADL): An alternative term for environmental controls.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

Environmental Control System (ECS): Form of electronic [assistive technology](#) that enables people with significant disabilities to independently access equipment in their environment.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

Integrated Assistive Technology: System designed to allow an individual with a disability access to and control of more than one function, which they would otherwise be unable to achieve.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019



Screen reader: A software programme that interprets navigation and content into spoken text or braille. Used by users who are visually impaired or dyslectic.

Source: <https://abilitynet.org.uk/factsheets/introduction-screen-readers>

Screen magnifier: A software programme that magnifies a portion of the screen. Screen magnifiers are used by persons with visual impairments, reading - and writing impairments as well as motor impairments.

Source: <https://www.boia.org/blog/screen-magnifiers-who-and-how-they-help>

Smart home: A smart home is a house or other dwelling with automated or remotely controlled components. Some "smart" components require an interface though most smart home features can be controlled by a mobile device or computer.

Source: https://techterms.com/definition/smart_home

Speech to Text (STT): The process of automatic generation from [text](#) or annotated text input to speech output.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Text to Speech (TTS): The process of automatic generation of speech output from [text](#) or annotated text input.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

User-agent-supported: Implemented by user agents and [assistive technologies](#).

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

3.10 Content

Alternative format: A document, leaflet or electronic resource that is provided in a different format to the original to better adapt to the needs of a specific user. Examples of an alternative format include a word document instead of a [PDF](#) or providing a document in large print or in Braille.

Alt text: [Text](#) description of [images](#) to ensure blind users get the same information as sighted ones. This is a requirement in the [Web Accessibility Directive](#).

Source: <https://www.techopedia.com/definition/23124/alternate-text-alt-text>



Animation: Content that, when rendered, creates a visual movement effect automatically (i.e., without manual user interaction). This definition of animation includes [video](#) and animated [images](#).

Source: WAI (Printable) Glossary, online July 2020:

<https://www.w3.org/WAI/GL/Glossary/printable.html>

Audio description: To ensure that blind and visually impaired users get access to meaningful content that is presented visually but not read out loud, audio description should be added. This can be done by providing information about actions, characters, scene changes, and on-screen [text](#) during existing pauses in dialogue. This is a requirement in the [Web Accessibility Directive](#).

Source: Own elaboration

Captions: Captions are necessary for hard of hearing users to get access to meaningful audio content in [videos](#) etc. [Text](#) presented and synchronized with [multimedia](#) to provide not only the speech, but also sound effects and sometimes speaker identification. Note: In some countries, the term "subtitle" is used to refer to dialogue only and "captions" is used as the term for dialogue plus sounds and speaker identification. In other countries, subtitle (or its translation) is used to refer to both. This is a requirement of the [Web Accessibility Directive](#).

Source: Own elaboration

Font: It represents an organised collection of glyphs in which the various glyph representations will share a common look or styling such that, when a string of characters is rendered together, the result is highly legible, conveys a particular artistic style and provides consistent inter-character alignment and spacing.

Source: WAI (Printable) Glossary, online July 2020:

<https://www.w3.org/WAI/GL/Glossary/printable.html>

Hyperlink: A pointer within a [hypertext](#) document which points (links) to another document, which may or may not also be a hypertext document.

Source: WAI (Printable) Glossary, online July 2020:

<https://www.w3.org/WAI/GL/Glossary/printable.html>

Hypertext: A document, written in HTML, which contains hyperlinks to other documents, which may or may not also be hypertext documents. Hypertext documents are usually retrieved using WWW.

Source: WAI (Printable) Glossary, online July 2020:

<https://www.w3.org/WAI/GL/Glossary/printable.html>



Image: An image is a primarily symbolic visual representation other than text. That image may include both electronic and physical representations.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Graphics: Two- or three-dimensional [images](#), typically drawings or photographs. See also GIF, PNG, SVG, and VRML.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Graphic element: One of the element types that can cause graphics to be drawn onto the target canvas. Specifically: 'path', 'text', 'rect', 'circle', 'ellipse', 'line', 'polyline', 'polygon', '[image](#)' and 'use'.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Multimedia: Audio or video synchronized with another type of media and/or with time-based interactive components.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Portable Document Format (PDF): A document format that ensures design is shown the same way on all devices. The format can be made accessible but needs manual handling, which means that many PDF documents are inaccessible.

Source: <https://acrobat.adobe.com/us/en/acrobat/about-adobe-pdf.html#>

Placeholder: Content generated by the user agent to replace author-supplied content. A placeholder may be generated as the result of a user preference (e.g., to not render images) or as repair content (e.g., when an image cannot be found). Placeholders can be any type of content, including [text](#), [images](#), and [audio](#) cues.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Text: Sequence of characters.

Source: Glossary from W3.org, online July 2020: <https://www.w3.org/TR/2006/WD-WCAG20-20060427/appendixA.html>

User agent: Any software that retrieves and renders Web content for users.



Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

Video: The technology of moving pictures or [images](#) (Note: [Video](#) can be made up of animated or photographic images, or both.)

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Visual object: A visual object is output from a visual viewport. Visual objects include graphics, [text](#), and visual portions of movies and animations.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Website: A collection of interlinked [Webpages](#), including a host page, residing at the same network location.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Webpage: A [hypertext](#) document on the World Wide Web.

Source: Oxford Dictionary: https://www.lexico.com/en/definition/web_page

3.11 User experience (UX)

User experience: Commonly abbreviated "UX," it is the experience a person has using a product or service. In the technology world, this often refers to a hardware device or software programme. A positive user experience is simple, intuitive, and enjoyable. A negative user experience is complex, confusing, and frustrating.

Source: Tech Terms: https://techterms.com/definition/user_experience

User requirements: They are typically written when discussing the use cases for a project. The requirements definition is done with the customer or product managers that know how the embedded system will be used by the user. Many user requirements deal with how a user will interact with a system and what that user expects. If there is a screen or human machine interface aspect to the system, a user requirement may be based on what happens when the user selects an action on the screen.

Source: Science Direct: <https://www.sciencedirect.com/topics/engineering/user-requirement>

User interface: It includes both:



- the user agent user [interface](#), i.e., the controls (e.g., menus, buttons, prompts, and other components for input and output) and mechanisms (e.g., selection and focus) provided by the user agent ("out of the box") that are not created by content.
- the "content user interface," i.e., the enabled elements that are part of content, such as form controls, links, and applets.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Usability: Able or fit to be used.

Source: Oxford Dictionary: <https://www.lexico.com/en/definition/usable>



4 GLOSSARY OF PROJECT CONCEPTS - ALPHABETICALLY

4.1 A

Accessibility: Extent to which products, systems, services, environments and facilities can be used by people from a population with the widest range of user needs, characteristics and capabilities to achieve identified goals in identified contexts of use.

Source: ISO/IEC 30071-1:2019 (en)

Accessible authoring practice: Practices that improve the accessibility of Web content. Both authors and tools engage in accessible authoring practices.

Source: [ATAG10] 2001-01-12 "Authoring Tool Accessibility Guidelines 1.0" J. Treviranus, C. McConchie, I. Jacobs, and J. Richards, eds., 3 February 2000. This W3C Recommendation is <http://www.w3.org/TR/2000/REC-ATAG10-20000203/>

Accessible design: is a design process in which the needs of people with disabilities are specifically considered. Accessibility sometimes refers to the characteristic that products, services and facilities can be independently used by people with a variety of disabilities.

Source: <https://www.washington.edu/doit/what-difference-between-accessible-usable-and-universal-design>

Accessibility problem: Can be defined as non-compliance with minimum requirements or inaccessibility perceived by end users.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Accreditation: A process through which official recognition of meeting all formal official requirements of academic excellence, curriculum, facilities, etc. is presented.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Active and Assisted Living (AAL): Comprises concepts, products, and services that combine new technologies and the social environment in order to improve quality of life during all periods of life.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019



Adult Education: A formal or non-formal learning situation where adults engage in systematic learning activities for acquiring skills, knowledge, attitudes or values (in this case relevant to digital competences).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Ageing-related conditions: Changes in people's functional ability due to aging can include subtle and/or gradual changes in abilities or a combination of abilities including vision, hearing, dexterity and memory. Any one of these limitations can affect an individual's ability to access Web content.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Alternative format: A document, leaflet or electronic resource that is provided in a different format to the original to better adapt to the needs of a specific user. Examples of an alternative format include a word document instead of a PDF or providing a document in large print or in Braille.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Alternative keyboards or switches: Hardware or software devices used by people with physical disabilities, that provide an alternate way of creating keystrokes that appear to come from the standard keyboard.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Alt text: Text description of images to ensure blind users get the same information as sighted ones. This is a requirement in the Web Accessibility Directive.

Source: <https://www.techopedia.com/definition/23124/alternate-text-alt-text>

Android (operating system): Android is a mobile operating system based on a modified version of the Linux kernel and other open source software, designed primarily for touchscreen mobile devices such as smartphones and tablets.

Source: [https://en.wikipedia.org/wiki/Android_\(operating_system\)](https://en.wikipedia.org/wiki/Android_(operating_system))

Animation: Content that, when rendered, creates a visual movement effect automatically (i.e., without manual user interaction). This definition of animation includes video and animated images.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>



Application software (APP): is a programme or groups of programmes designed for end users. Examples of an application include a word processor, a spreadsheet, an accounting application, a web browser, an email client, a media player, a file viewer, simulators, a console game or a photo editor.

Source: https://en.wikipedia.org/wiki/Application_software

Application Programming Interface (API): A set of clearly defined methods of communication between various software components.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

Artificial intelligence (AI): The ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience.

Source: Encyclopaedia Britannica: <https://www.britannica.com/technology/artificial-intelligence>

Assessment as learning: Assessment as learning occurs when learners are actively engaged in the assessment process; by reflecting on and monitoring their own progress to inform their future learning goals.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Assessment for learning: *Assessment for learning* involves the employment of formal and informal assessment activities at the beginning of instruction (diagnostic assessment), and throughout the teaching and learning process (formative assessment) in order to obtain evidence about students' knowledge, understanding and skills and to inform the planning of future teaching learning.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Assessment of Learning. The process of collecting, analyzing and interpreting evidence for the purpose of making judgments about a student's level of achievement in regards to specific learning expectations and standards. A synonym for "summative assessment", it usually occurs at defined key points during a unit of work or at the end of a unit, term or semester, and may be used to rank or grade students.



Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Assessment Rubric: A scaled scoring or grading guide, which provides a set of criteria and standards for judging performance and distinguishing between different levels of achievement.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Assessment: A general term that describes the process of collecting, analyzing, and interpreting information in order to measure the extent of achieving the intended outcomes for student learning, program effectiveness, institutional effectiveness, etc.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Assistive technology: Devices and technologies whose primary purpose is to maintain or improve an individual's functioning and independence to facilitate participation and to enhance overall well-being. They can also help prevent impairments and secondary health conditions. Examples of assistive devices and technologies include wheelchairs, prostheses, hearing aids, visual aids, and specialized computer software and hardware that increase mobility, hearing, vision, or communication capacities.

Source: World Health Organization: <https://www.who.int/disabilities/technology/en/>

Assistive Technology Centre: An institution that supports the development of assistive technology learning, through various activities of education, assessment and implementation of AT for people with disabilities of all ages, families and professionals.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Assistive Technology for communication: The use of ICT-AT by people with disabilities of all ages in order to participate in a bidirectional exchange of messages through any type of language system and/or mediator, for personal, social or other purposes.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary



Assistive Technology for learning: The use of ICT-AT by people with disabilities of all ages in order to receive, construct and process knowledge and develop skills and attitudes based on their individual needs and abilities.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Assistive Technology (AT) Learning: The acquisition of knowledge and skills, and the development of attitudes or values for the use of assistive technology, through practicing, studying, teaching and/or experiencing, in every aspect of life.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Assistive Technology Service/Provider: Any service that directly assists an individual with a disability in the selection, acquisition or use of an assistive technology device.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Assistive Technology team: A multidisciplinary team including various professionals in education, rehabilitation and technology (e.g. assistive technology specialist, teacher/educator, special education teacher, occupational therapist, speech and language therapist, provider, designer, etc), family members/carers and the end-user that collaborate for the assessment of needs, selection of solutions, implementation and follow-up for the effective use of AT by a person with disabilities (end-user).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Awareness: Knowledge, information and concern about the necessity of reinforcing the digital competences of people with disabilities of all ages, in order to reduce the digital divide.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Audio description: To ensure that blind and visually impaired users get access to meaningful content that is presented visually but not read out loud, audio description should be added. This can be done by providing information about actions, characters, scene changes, and on-screen text during existing pauses in dialogue. This is a requirement in the Web Accessibility Directive.

Source: Own elaboration



Augmentative and Alternative Communication (AAC): A variety of techniques and tools, including picture communication boards, line drawings, speech-generating devices (SGDs), tangible objects, manual signs, gestures, and finger spelling, to help the individual express thoughts, wants and needs, feelings, and ideas.

Source: ASHA American Speech-Language-Hearing Association: <https://www.asha.org/Practice-Portal/Professional-Issues/Augmentative-and-Alternative-Communication/>

Authentication: The process or action of verifying the identity of a user or process.

Source: Oxford University Press (2020 In: Lexico.com, Available at: <https://www.lexico.com/en/definition/authentication>

Authoring tools: Any software that is used to produce content for publishing on the Web.

Source: WAI (Printable) Glossary, online July 2020: <https://www.w3.org/WAI/GL/Glossary/printable.html>

Authoring Tool Accessibility Guidelines (ATAG): Guidelines that explain how to:

- make the authoring tools themselves accessible, so that people with disabilities can create web content, and
- help authors create more accessible web content — specifically: enable, support, and promote the production of content that conforms to Web Content Accessibility Guidelines (WCAG).

ATAG is part of a series of accessibility guidelines, including the Web Content Accessibility Guidelines (WCAG) and the User Agent Accessibility Guidelines (UAAG). Essential Components of Web Accessibility explains the relationship between the different guidelines.

It is important to note that the ATAG guidelines have not been updated since 2015 and are currently not reflecting the minimum requirements of the Web Accessibility Directive

Source: W3C Web Accessibility Initiative: <https://www.w3.org/WAI/standards-guidelines/atag/>

Automated Speech Recognition (ASR): The use of computer hardware and software-based techniques to identify and process human voice. It is used to identify the words a person has spoken or to authenticate the identity of the person speaking into the system. It is also known as automatic voice recognition (AVR), voice-to-text or simply speech recognition.

Source: Techopedia: <https://www.techopedia.com/definition/6044/automatic-speech-recognition-asr>



Automatic accessibility testing tool: There are about 150 different kinds of automatic tools for testing digital accessibility. Some are open source, others are licensed, and some are built into other systems, for example authoring tools. Automatic accessibility testing tools can target developers, designers, web authors, website owners or a mix of different roles.

Source: Own elaboration

Autonomy: the perceived ability to control, cope with and make personal decisions about one's life on a day-to-day basis, according one's own rules and preferences" (Malanowski, Özcivelek & Cabrera 2008³¹)

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Award: A mark of recognition (e.g. a prize, an official document) provided to individuals in honour of achievement.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

4.2 B

Blended Learning: A learning approach that combines face-to-face and computer mediated learning and instruction (Duhaney, 2004³²). It is also referred to as hybrid learning, and it is a mixture of real time and space and virtual (online) setting that involves both synchronous and asynchronous learning.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Browser: A system entity that is used by an end user to access a website. A browser provides a run-time environment for distributed application components on the client's device.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

³¹ Malanowski, N., Özcivelek, R. & Cabrera, M. (2008). Active Ageing and Independent Living Services: The Role of Information and Communication Technology, Office for Publication of the European Communities, Institute for Prospective Technological Studies, Sevilla, Luxembourg.

³² Duhaney, D.C. (2004). Blended learning in education, training, and development, Performance Improvement, 43(8), 35–38



4.3 C

Cache: A storage area used by a server or proxy to store data resources that have been retrieved or created in response to a request. When a new request for a "cached" data resource is received, the server or proxy can respond with the cached version instead of retrieving or creating a new copy.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Captions: Captions are necessary for hard of hearing users to get access to meaningful audio content in videos etc. Text presented and synchronized with multimedia to provide not only the speech, but also sound effects and sometimes speaker identification. Note: In some countries, the term "subtitle" is used to refer to dialogue only and "captions" is used as the term for dialogue plus sounds and speaker identification. In other countries, subtitle (or its translation) is used to refer to both. This is a requirement of the Web Accessibility Directive.

Source: Own elaboration

Career: Opportunities to progress through an occupation and ongoing professional development.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Carer/caregiver: A family member or a paid or volunteer individual that regularly supports a person with disabilities of any age.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Cascading Style Sheets (CSS): Style sheets describe how documents are presented on screens, in print, and even in spoken voice. Style sheets allow the user to change the appearance of hundreds of Webpages by changing just one file. A style sheet is made up of rules that tell a browser how to present a document. Numerous properties may be defined for an element; each property is given a value.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Certificate: A document provided to individuals that have completed a particular course which officially confirms participation in the course and completion of the requirements.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary



Certification: Formal procedure by which an accredited or authorized person or agency assesses, in accordance with established requirements or standards, and verifies (through the issuing of an official certificate) the attributes, characteristics, quality, qualification, or status of individuals or organizations, or procedures or processes.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Certified / Accredited ICT-AT course: A course in which learners are involved in activities for developing ICT-AT competences towards the acquisition of a particular certification (e.g. ECDL).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Certificate of attendance: A document provided to individuals that have attended a particular course, lecture or seminar which officially confirms the attendance of the course.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Character: Strings consist of a sequence of zero or more characters, where a character is defined as in the XML Recommendation [XML]. A single character in P3P thus corresponds to a single Unicode abstract character with a single corresponding Unicode scalar value.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Charter of fundamental rights of the European Union: This Charter reaffirms, with due regard for the powers and tasks of the Union and for the principle of subsidiarity, the rights as they result, in particular, from the constitutional traditions and international obligations common to the Member States, the European Convention for the Protection of Human Rights and Fundamental Freedoms, the Social Charters adopted by the Union and by the Council of Europe and the case-law of the Court of Justice of the European Union and of the European Court of Human Rights. In this context the Charter will be interpreted by the courts of the Union and the Member States with due regard to the explanations prepared under the authority of the Praesidium of the Convention which drafted the Charter and updated under the responsibility of the Praesidium of the European Convention.

Source: EUR-Lex: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:12012P/TXT>



Client: A computer system or process that requests a service of another computer system or process (a "server") using some kind of protocol and accepts the server's responses. A client is part of a client-server software architecture.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Cloud: A network of remote servers hosted on the Internet and used to store, manage, and process data in place of local servers or personal computers.

Source: Oxford University Press (2020 In: Lexico.com, Available at:
<https://www.lexico.com/en/definition/cloud>)

Co-design: Co-design is the act of creating with stakeholders (business or customers) specifically within the design development process to ensure the results meet their needs and are usable. (Co-design may also be called participatory design- a term which is used more often within the design community.)

Source: https://en.wikipedia.org/wiki/Participatory_design

Collaborative Learning: Learning environments in which small groups of learners work together, in a joint commitment to a shared goal (Littleton and Häkkinen, 1999³³). It is about mutual engagement in a single unified task with shared conceptions of a problem (Roschelle & Teasley, 1995³⁴), taking into consideration the social effects of working together. Collaborative learning represents a philosophy of interaction whereby learners are given more power over their own learning (McWhaw *et al.*, 2003³⁵) and they elaborate their thoughts as part of the communication (Saab *et al.*, 2005³⁶).

Community: A social unit of any size where persons with disabilities of all ages may belong and share values and experiences. It can be a face-to-face (e.g. village, neighbourhood, club, region) or a remote community (e.g. digital community, social network).

³³ Littleton, K. and Häkkinen, P. (1999). "Learning Together: Understanding the Processes of Computer-Based Collaborative Learning." In Dillenbourg, P. (ed.) *Collaborative Learning: Cognitive and Computational Approaches*. Oxford: Pergamon. pp. 20-30.

³⁴ Roschelle, J., and Teasley, S. D. (1995). "The construction of shared knowledge in collaborative problem solving." In O'Malley, C. (ed.) *Computer supported collaborative learning*. Berlin: Springer. pp. 69–97.

³⁵ McWhaw, K., Schnackenberg, H., Sclater, J. and Abrami, Ph. (2003). "From co-operation to collaboration." In Gillies, R.M. and Ashman, A.F. (eds.) *Cooperative Learning: The social and intellectual outcomes of learning in groups*. London: Routledge-Falmer. pp. 69-86.

³⁶ Saab, N, Van Joolingen, W.R. and Van Hout-Wolters B.H.A.M. (2005). Communication in collaborative discovery learning. *British Journal of Educational Psychology*, 75: 603–621.



Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Competence framework: a structured overview of learning outcomes describing levels of competence and allowing the definition of progression in learning.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Computer control: The ability to work efficiently and effectively using a computer. It requires familiarity with and understanding of the use of a computer and basic IT concepts (e.g. components of a PC and Operating Systems, files and file management, classifications to manage electronic files and folders, understanding of the common types of software, etc.)

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Continuing Professional Development (CPD): Learning activities through which professionals maintain and enhance their knowledge and skills related to their profession. CPD necessitates commitment of professionals to lifelong learning, i.e. to the continued updating of their skills and knowledge in order to remain professionally competent and achieve their true potential. It can combine different methodologies to learning (e. g training workshops, conferences, e-learning programs, etc.) all focused for an individual to improve and have effective professional development.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Cookie: Data sent by a Web server to a Web client, to be stored locally by the client and sent back to the server on subsequent requests.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Course: A learning event developed and implemented with a particular set of learning objectives and activities for the acquisition of specific knowledge and skills.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Criterion-Referenced Assessment: An assessment where an individual's performance is compared to a specific pre-determined learning objective or performance (and not to the performance of other students).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary



Cross platform software: Computer software that is capable of being implemented on multiple different platforms

Source: https://en.wikipedia.org/wiki/Cross-platform_software#cite_note-Sun-Web-00-2

Curriculum: According to Hilda Taba (1962)³⁷ “all curricula, no matter what their particular design, are composed of certain elements. A curriculum usually contains a statement of aims and of specific objectives; it indicates some selection and organization of content; it either implies or manifests certain patterns of learning and teaching, whether because the objectives demand them or because the content organization requires them. Finally, it includes a program of evaluation of the outcomes.”

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

4.4 D

Data: Information in a specific physical representation, usually a sequence of symbols that have meaning; especially a representation of information that can be processed or produced by a computer.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Day care centre: An institution that provides care, rehabilitation and other facilities for people with disabilities of all ages.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Degree: A diploma awarded in recognition of satisfactory completion of tertiary education programmes, academic or professional, in undergraduate or (post)graduate studies.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Diagnostic assessment/Pre-assessment: Assessment that occurs at the beginning of a unit of study, and which deliberately seeks to identify where learners’ prior, or

³⁷ Taba, H. 1962. Curriculum development: theory and practice. New York, NY: Harcourt, Brace & World
Page 53 of 82



current, understandings and competencies are, in order to inform instruction accordingly.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Digital/ Information society: The modern society where new technologies (ICT) are utilized in every spectrum of social, political and economical sectors.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Digital Literacy: The acquisition of knowledge and skills, and the development of attitudes or values for effectively choosing and using ICT and ICT-AT. It is a blend of information, communication and technology literacy, including the basic knowledge and skills for using technology, acknowledging the possibilities it offers, and developing critical thinking for uses and resources.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Digital Skills: A range of abilities to use digital devices, communication applications, and networks to access and manage information.

Source: UNESCO: <https://en.unesco.org/news/digital-skills-critical-jobs-and-social-inclusion#:~:text=Digital%20skills%20are%20defined%20as,to%20access%20and%20manage%20information>

Digital Divide:

A term that refers to the gaps in access to information and communication technology (ICT) - threatens the ICT "have-nots", whether individuals, groups or entire countries. Education and learning lie at the heart of these issues and their solutions. The gaps that define the "learning digital divide" are thus as important as the more obvious gaps in access to the technology itself.

Source: OECD:

<https://www.oecd.org/site/schoolingfortomorrowknowledgebase/themes/ict/bridgingthedigitaldivide.htm>

A term that refers financial, educational and social inequalities and expresses the difference between different people or groups of people (e.g. persons with disabilities, older adults, persons in different geographical regions, etc) in accessing and utilising the possibilities and benefits of technology.

Source: Mossberger, 2003; Hilbert, 2013; Jaeger et al, 2014



Digital Signature: A very large number created in such a way that it can be shown to have been done only by somebody in possession of a secret key and only by processing a document with a particular content. It can be used for the same purposes as a person's handwritten signature on a physical document. Something you can do with public key cryptography.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Diploma: A certificate awarded by an educational institution as evidence of an individual's successful completion of a course of study.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Direct Measures of Learning: Processes used to provide direct evidence, in the form of student products or performances, of the actual learning that has occurred relating to a specific content or skill (e.g. objective tests, essays, portfolios, performances, projects, reflective essays, computer programs, and observations etc.)

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Distance Learning: Institution-based, formal education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and instructors (Simonson, 2012³⁸). Learners are not physically present in a traditional setting/classroom.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

4.5 E

Early childhood/Pre-school education: Educational programs and strategies geared toward young children up until the age of about eight, with a particular focus in the period before the commencement of compulsory education at primary school.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Educational institutions: An educational organization that offers organized learning courses and activities.

³⁸ Simonson, M. (2012). *Status, Definitions, and History of Distance Education*. Open University of Catalonia



Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Educator / Teacher: A person who provides instruction and supports learning process in educational environments of a person with disabilities.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

E-Learning: The use of various ICT tools and other electronic means for learning. It includes all kinds of educational technology that electronically support the process of learning and instruction. It also includes other concepts such as technology-enhanced learning (TEL), computer-based training (CBT), internet-based training (IBT), web-based training (WBT), online education, virtual education, distance education, or digital educational collaboration (Sun *et al*, 2008³⁹).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Electronic Aids to Daily Life (EADL): An alternative term for environmental controls.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

Employment opportunities: Prospects and chances provided to people with disabilities to obtain a work position in any professional, academic, scientific or other field.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Environmental Control System (ECS): Form of electronic assistive technology that enables people with significant disabilities to independently access equipment in their environment.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

End user: A natural person who makes use of resources for application purposes.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

³⁹ Sun, P. -C. Tsai, R.J, Finger G., Chen, Y.Y. & Yeh, D. (2008). What drives a successful e-Learning? An empirical investigation of the critical factors influencing learner satisfaction. *Computers & Education*, 50(4), 1183-1202. doi:10.1016/j.compedu.2006.11.007



EN301549: The European standard for Accessibility Requirements of ICT products and services. Relevant parts of this standard is presumed conformance to the Web Accessibility Directive.

Source:

https://www.etsi.org/deliver/etsi_en/301500_301599/301549/02.01.02_60/en_301549v020102p.pdf

European Accessibility Act: The EAA requires for commercial products and services to comply with accessibility requirements. It will be transposed into national legislation by June 2022 and the first grace period ends by 2025.

Source: European Commission: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019L0882>

EU Disability strategy 2010-2020: The [European disability strategy 2010-2020](#) aims to promote a barrier-free Europe and at empower people with disabilities so that they can enjoy their rights and participate fully in society and economy.

Source: <https://ec.europa.eu/social/main.jsp?catId=1484&langId=en>

European Home Systems (EHS): Protocol aimed at home appliances control and communication using power line communication. It is one of the smart home systems that converged to form the KNX standard.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

Evaluation: A value judgment about quality. When used in reference to educational settings, evaluation means to measure, compare, and judge the quality of student work, schools, or a specific educational programme.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Event: An action taken by the user, a condition that occurs in the operating system, or a condition occurring over a network. A user event might be pressing the Enter key; an OS event might be the system time reaching some preset value; a network event might be the completion of a file download.

Source: WAI (Printable) Glossary, online July 2020:

<https://www.w3.org/WAI/GL/Glossary/printable.html>

External/Extrinsic motivation: Reasons to learn which are driven or rely on external factors and pressures or a desire for reward.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary



Expectations from others: Imagined expectations or real expectations imposed on the learner by other people in his/her life (e.g. parents, friends etc.)

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

4.6 F

Face-to-face Learning: Any learning activity in which all participants, i.e. learners, instructors, facilitators, peers, meet together in the same place at the same time. It may involve the use of technology, but no remote communication technologies are required.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Family members: The group of people (e.g. parents, siblings, spouse, husband, children or other relatives) that support and have close interaction with a person with disabilities of any age and who are involved in the person's daily life.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Feedback: Information that the student gives the teacher or the teacher gives the student about learning processes and progress towards learning goals. Feedback can help students shape their learning approaches, and help educators shape their teaching programmes.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Font: It represents an organised collection of glyphs in which the various glyph representations will share a common look or styling such that, when a string of characters is rendered together, the result is highly legible, conveys a particular artistic style and provides consistent inter-character alignment and spacing.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Formal education: Institutionalized school systems of teaching and learning based on a curriculum with predetermined purposes. Official school systems.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary



Formal tests: Tests in which the directions of administration are clear cut and allow little, if any, discretion on the part of the teacher (e.g. university entrance examinations). Formal tests are scored in a carefully prescribed manner.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Formative assessment: Ongoing, improvement-oriented assessment which is interwoven with the learning process, and which is intended to provide regular feedback that can be used to guide improvements in teaching and learning. Assessment activities are usually low-stakes or no-stakes.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Further learning opportunities: Prospects and chances provided to people with disabilities of all ages to get involved in formal or non-formal learning activities.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

4.7 G

Gamification: The application of typical elements of game playing (e.g. point scoring, competition with others, rules of play) to other areas of activity, typically as an online marketing technique to encourage engagement with a product or service.

Source: Oxford University Press (2020 In: Lexico.com, Available at: <https://www.lexico.com/en/definition/gamification>)

Gerontechnology: Designing technology and environment for independent living and social participation of older persons in good health, comfort and safety.

Source: International Society for Gerontechnology: <http://www.gerontechnology.org/about.html>

Graduate/Postgraduate: Academic or professional programs following undergraduate education.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Graphics: Two- or three-dimensional images, typically drawings or photographs. See also GIF, PNG, SVG, and VRML.

Source: WAI (Printable) Glossary, online July 2020: <https://www.w3.org/WAI/GL/Glossary/printable.html>



Graphic element: One of the element types that can cause graphics to be drawn onto the target canvas. Specifically: 'path', 'text', 'rect', 'circle', 'ellipse', 'line', 'polyline', 'polygon', 'image' and 'use'.

Source: WAI (Printable) Glossary, online July 2020:

<https://www.w3.org/WAI/GL/Glossary/printable.html>

4.8 H

Home-based learning: Structured and organised learning activities that take place in the home environment.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Humanistic curriculum (model for ICT): A curriculum where ICT-AT are considered as cross-curricular tools. It regards the computer (and technology), not as an isolated course but as a tool which empowers learners with knowledge, thinking skills and problem solving alternatives (Karagiorgi, 2013⁴⁰). Focus shifts from learning about computers to using computers in learning. Emphasis is placed on the learner as a constructor of knowledge, while traditional curriculum areas are approached in independent and flexible pathways (Nicholson, 1995⁴¹).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Hyperlink: A pointer within a hypertext document which points (links) to another document, which may or may not also be a hypertext document.

Source: WAI (Printable) Glossary, online July 2020:

<https://www.w3.org/WAI/GL/Glossary/printable.html>

Hypertext: A document, written in HTML, which contains hyperlinks to other documents, which may or may not also be hypertext documents. Hypertext documents are usually retrieved using WWW.

Source: WAI (Printable) Glossary, online July 2020:

<https://www.w3.org/WAI/GL/Glossary/printable.html>

⁴⁰ Karagiorgi, Y. (2013). Locating ICT for primary education in a reformed Greek-Cypriot national curriculum: A documentary analysis approach. *Education and Information Technologies*, 8(2), 1-22

⁴¹ Nicholson, P. (1995). A curriculum for teachers or for learning? In D. Watson & D. Tinsley (Eds.), *Integrating information technology into education*. London: IFIP and Chapman and Hall.



Hypertext Markup Language (HTML): A standardised system for tagging text files to achieve font, colour, graphic, and hyperlink effects on World Wide Webpages.

Source: Oxford Dictionary: <https://www.lexico.com/en/definition/html>

Hypertext Transfer (or Transport) Protocol (HTTP): The data transfer protocol used on the World Wide web.

Source: Oxford Dictionary: <https://www.lexico.com/en/definition/http>

4.9 I

ICT-AT competence: Skills and knowledge for using [ICT-AT](#) successfully.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

ICT competences course: A formal or non-formal education course during which learners are engaged in learning activities for the acquisition of knowledge and skills, to use ICT, through practicing and studying.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

ICT-AT competency: The demonstration of the ability to perform a specific task or achieve specified criteria for [ICT-AT](#).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

ICT-AT skills: The ability to use [Assistive Technology](#) based on [ICT](#) (ICT-AT) to successfully perform various tasks with digital technology.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

ICT-AT specific course: A formal or non-formal education course during which learners are engaged in learning activities for the acquisition of knowledge and skills, to use digital technology for people with disabilities of all ages, through practicing and studying.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary



Information and Communication Technology (ICT) Learning: The acquisition of knowledge and skills, and the development of attitudes or values for the use of ICT, through practicing, studying, teaching and/or experiencing, in every aspect of life.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Image: An image is a primarily symbolic visual representation other than text. That image may include both electronic and physical representations.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Incentives: Any encouragement or motivation - external or internal – for learning, such as acknowledgment.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Inclusive curriculum: A common curriculum for all learners where the general aims are universal, but the programme objectives and teaching strategies can and should differ, whereas areas of learning can be either common or different (Norwich & Lewis, 2007⁴²)

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Inclusive education: Young people - no matter who they are - can learn together in the same school. This entails reaching out to all learners and removing all barriers that could limit participation and achievement. Disability is one of the main causes of exclusion; however, there are also other social, institutional, physical, and attitudinal barriers to inclusive education.

Source: UNESCO: <http://www.iiep.unesco.org/en/inclusive-education>

Inclusive design: The concept of designing mainstream products and/or services to be accessible to, and usable by, as many people as reasonably possible ... without the need for special adaptation or specialised design.

Source: Definition by the British Standard Institute - Retrieved from:
<http://www.inclusivedesigntoolkit.com/whatis/whatis.html>

⁴² Norwich, B., and Lewis, A. (2007). How Specialized is Teaching Children with Disabilities and Difficulties? *Journal of Curriculum Studies*, 39(2): 127–150.



Inclusive pedagogy: An approach to teaching and learning that attends to individual differences between pupils but avoids the marginalisation that can occur when pedagogical responses are designed only with individual needs in mind. Instead of providing something different or additional for children who experience difficulties in their learning, inclusive pedagogy seeks to extend what is ordinarily available to everybody.

Source: Florian, L. and Black-Hawkins, K., 2011. Exploring Inclusive Pedagogy. British Educational Research Journal, 37(5), pp. 813-828.

<https://www.tandfonline.com/doi/abs/10.1080/13603116.2017.1412513?journalCode=tied20>

Inclusive school: A formal education school based on the philosophy of differentiation and equality of education and designed to accommodate all learners' needs regardless of disability, language, gender, religion or ethnicity, by providing accessibility in physical and learning environment. (Booth & Ainscow, 1998⁴³; Symeonidou & Phtiaka, 2014⁴⁴).

Inclusive society: A society that over-rides differences of race, gender, class, generation, and geography, and ensures inclusion, equality of opportunity as well as capability of all members of the society to determine an agreed set of social institutions that govern social interaction.

Source: Expert Group Meeting on Promoting Social Integration, Helsinki, July 2008 - Retrieved from <https://www.un.org/esa/socdev/egms/docs/2009/Ghana/inclusive-society.pdf>

Individualized Educational Programme (IEP): A learning plan with individualised learning objectives, proposed learning/teaching methodology and evaluation strategies for the needs of an individual learner with disabilities.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Informal education/learning: Learning experiences outside formal or non-formal education settings.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Initial education: Formal education of individuals before their first entrance to the labour market.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

⁴³ Booth, T. & Ainscow, M. (1998). *From them to us: An international study of inclusion in education*. London: Routledge

⁴⁴ Symeonidou, S. & Phtiaka, H. (2014). *Education for Inclusion: From research to practice*. Athens: Pedio



Input device: An input device is any hardware device that sends data to a computer, allowing you to interact with and control it. Apart from keyboard and mouse, there are several other ways of providing input to a computer, for example a range of assistive technology.

Source: <https://www.especialneeds.com/shop/assistive-technology/computer-accessibility-tool-for-special-needs/assistive-technology-input-devices.html>

Instructor: A person who provides instruction and supports the learner's learning process.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Integrated Assistive Technology: System designed to allow an individual with a disability access to and control of more than one function, which they would otherwise be unable to achieve.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

Interfaces: Shared boundary across at which two or more distinct components of a system interact; for example, the user interface of a computer is where the computer's hardware, software, and the human user interact.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

Internet use: The ability to effectively use the internet. It requires essential internet skills such as efficient use of search engines to find information, use of e-mail to send and receive messages, use of the internet for online transactions (e.g. online banking, online purchases), etc. It also necessitates familiarity with safety considerations when using internet tools, and with internet ethics.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Interoperability: The ability of software and hardware on multiple machines from multiple vendors to communicate meaningfully.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Internet of Things (IoT): Network of physical devices, vehicles, home appliances, and other items embedded with electronics that enable these objects to connect and exchange data.



Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

IOS: A mobile operating system created and developed by Apple Inc. exclusively for its hardware.

Source: <https://en.wikipedia.org/wiki/IOS>

4.10 J

Javascript: An object-oriented computer programming language commonly used to create interactive effects within web browsers.

Source: Oxford Dictionary: <https://www.lexico.com/definition/javascript>

4.11 K

Knowledge: Facts, information, and skills acquired by a person through experience or education.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

KNX: Standardised OSI-based network communications protocol for building automation.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

4.12 L

Learner: A person with disabilities of any age who is involved in learning, in any learning setting.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Learning Content: Generally the term content refers the knowledge elements provided in a course or learning programme on which the learning is based.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Learning by doing: The process of learning from direct experience (e.g. by using technology for other functions, following tutorials in software, etc).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary



Learning goals or Goals for Learning: Broad statements used to express intended results in general terms (e.g. problem solving, ethical awareness, etc.)

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Learning needs: The gap between a learner's current level and the desired level of knowledge, skills, or attitudes.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Learning Objectives: Clear, concise statements that are used to express intended learning outcomes in precise terms. Refer to specific tasks needed to accomplish the goals of the programme, and serve as a guide in selecting appropriate assessment tools.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Learning Outcomes (Outcome Behaviours): Operational statements that identify the specific student behaviours that evidence the attainment of the intended learning objectives, e.g. the acquisition of desired knowledge, skills, abilities, capacities, attitudes or dispositions for ICT-AT.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Learning programmes: Learning programmes are intentionally designed and properly described educational interventions that aim at obtaining well specified learning outcomes.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Learning skills: The ability to search, construct and critically process knowledge and information, and develop skills and attitudes based on own interests and needs.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Learning with ICT-AT: The acquisition of knowledge and skills, and the development of attitudes or values, through using digital technologies (ICT-AT) by people with disabilities of all ages.



Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Lifelong learning: According to the European Commission (2001)⁴⁵, "Lifelong learning is all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competence, within a personal, civic, social and/or employment-related perspective." (p.10). Lifelong learning crosses sectors, promotes learning beyond traditional schooling and throughout adult life. It is flexible, diverse and available at different times and in different places.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

4.13 M

Mainstream school: A general formal education school for all learners, which integrates learners with disabilities.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Measures of learning: A general term to describe how we know if learners have learned what we wanted them to learn or have achieved the skills we wanted them to achieve.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Mobile-first design: This is a way of looking at design based on user behaviour. When a majority of the users are using their smartphone, it makes sense to design for mobile. These days, responsive design is more relevant, as users generally have all sorts of devices and screens in all shapes and sizes (anything from Apple watch via smartphones, tablets, portable computers to very big screens). Therefore, the interface of most content must be dynamic – not aimed at just one size.

Source: https://www.w3schools.com/html/html_responsive.asp

Mobile Learning: Any activity that allows individuals to be more productive when consuming, interacting with, or creating information, mediated through a compact digital portable device that the individual carries on a regular basis (eLearning Guild, 2014⁴⁶). It involves the use of mobile technology alone or in combination with other

⁴⁵ European Commission (2001) *Making a European area of lifelong learning a reality*, Brussels, COM(2001) 428final

⁴⁶ eLearning Guild. Available at <http://www.elearningguild.com/>



ICT to enable learning anytime and anywhere (UNESCO, 2014⁴⁷), in formal, non-formal and informal learning environments.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Multimedia: Audio or video synchronized with another type of media and/or with time-based interactive components.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

4.14 N

Natural languages: Languages used by humans to communicate, including spoken, written, and signed languages.

Source: Own elaboration

Needs based course: A course designed, implemented and assessed according to the needs of the learners it is addressed to. A learning needs assessment process precedes the design and development of the course.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Non-certified ICT-AT course: A course in which learners are involved in activities for developing ICT-AT competences without the acquisition of a certification.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Non-Formal education: Organized educational activities that take place outside the formal educational system.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

4.15 O

Objects: An identifiable, encapsulated entity that provides one or more services requested by a client. Objects can refer to the objects in OOP (object-oriented programming) or the objects in OLE (Object Linking and Embedding). In object-oriented programming, objects are the things you think about first in designing a

⁴⁷ UNESCO. Mobile Learning. Available at <http://www.unesco.org/new/en/unesco/themes/icts/m4ed/>



programme and they are also the units of code that are eventually derived from the process.

Open Learning: An approach to learning which focuses on the needs of the learners as perceived by the learners (Coffey, 1988⁴⁸), and which gives them flexibility and choice over what, when, at what pace, where, and how they learn. Open learning activities, which often include aspects of e-learningⁱⁱ, either enhance learning opportunities within formal education systems or broaden learning opportunities beyond formal education systems.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Operating system: A system software that manages computer hardware, software resources, and provides common services for computer programmes.

Source: https://en.wikipedia.org/wiki/Operating_system

4.16P

Peer: A person who interacts in any way with a person with disabilities of all ages in the learning process and/or its implementation.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Peer-tutoring: Learners receive support from peers. A representation of a microcosm of the traditional classroom (Gillies & Ashman, 2003⁴⁹); i.e. an unequal relationship between the tutor (teacher) and the tutee (learner), with high focus on curriculum content (Topping, 2005⁵⁰).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Performance Assessment: The process of using student activities or products, as opposed to tests or surveys, to evaluate students' knowledge, skills, and development. In performance assessment learners either do something in front of an audience (e.g. the whole class) or make a product (such as a piece of artwork, a device that solves a problem, a working model, etc.).

⁴⁸ Coffey, J. (1988). Guest Editorial: The Opening Learning Movement. *Innovations in Education & Training International*, 25(3), 195–96.

⁴⁹ Gillies, R.M and Ashman, A.F. (2003). *Cooperative Learning: The social and intellectual outcomes of learning in groups*. London: RoutledgeFalmer. pp. 1-18.

⁵⁰ Topping, K.J. (2005). Trends in Peer Learning. *Educational Psychology*, 25(6): 631–645.



Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Personal Digital Assistant (PDA): Also known as a handheld PC; mobile device that functions as a personal information manager.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

Personally identifiable data: Any information relating to an identified or identifiable individual.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Personal/Intrinsic motivation: Reasons to learn which are driven by an interest or enjoyment in learning, and which exist within the individual.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Personal goals: The aims set by an individual as desired results of effort and actions.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Personal interest: An individual's feeling to want to learn and know about a subject.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Personal success: An individual's belief to accomplish personal goals.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Placeholder: Content generated by the user agent to replace author-supplied content. A placeholder may be generated as the result of a user preference (e.g., to not render images) or as repair content (e.g., when an image cannot be found). Placeholders can be any type of content, including text, images, and audio cues.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Plaintext: Data that is input to and transformed by an encryption process, or that is output by a decryption process.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>



Platform-as-a-service: A type of cloud computing offering in which a service provider delivers a platform to clients, enabling them to develop, run, and manage business applications without the need to build and maintain the infrastructure such software development processes typically require.

Source: <https://www.infoworld.com/article/3223434/what-is-paas-software-development-in-the-cloud.html>

Portfolio/Dossier Assessment: A type of performance assessment in which learners' work is systematically collected over a period of time and is carefully reviewed and assessed for evidence of progress, effort, and achievement with respect to established learning outcomes and standards. In addition to examples of their work (e.g. samples of projects, exams, papers, presentations, videos of speeches and performances, reflective journals, etc.), most portfolios include reflective statements prepared by learners.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Plug-in: A programme that runs as part of the user agent and that is not part of content. Users generally choose to include or exclude plug-ins from their user agent.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Portable Document Format (PDF): A document format that ensures design is shown the same way on all devices. The format can be made accessible but needs manual handling, which means that many PDF documents are inaccessible.

Source: <https://acrobat.adobe.com/us/en/acrobat/about-adobe-pdf.html#>

Privacy: Preventing the unintended or unauthorized disclosure of information about a person. Such information may be contained within a message, but may also be inferred from patterns of communication; e.g. when communications happen, the types of resource accessed, the parties with whom communication occurs, etc.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Primary education: Compulsory educational programmes following pre-school/early childhood education, aiming at basic literacy of all levels and aspects. Curricula of primary education include objectives, content and methodologies for establishing foundations for all scientific fields.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary



Programme Level Assessment: Assessment interested in the cumulative effects of the education process; it does not focus on an individual learner, but rather on what and how an academic programme is contributing to the learning, growth and development of students as a group.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Procurement Directive: The Procurement Directive gives bodies procuring products and services over the threshold support for accessibility requirements. With the European Accessibility Act, the directive will have increased impact.

Source: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0024>

Pupil: A person with disabilities of school age (around 3-18 years) that attends a formal educational setting/school up to secondary education.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

4.17Q

Quality of life: The individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns (WHO, 2014⁵¹).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

4.18R

Responsive Web Design: An approach to web design that makes webpages render well on a variety of devices and window or screen sizes. A site designed with RWD adapts the layout to the viewing environment by using fluid, proportion-based grids, flexible images, and CSS3 media queries.

Source: Wikipedia

Repository: A mechanism for storing user information under the control of the user agent.

⁵¹ WHO (2014). The World Health Organization Quality of Life (WHOQOL). Available at: http://www.who.int/mental_health/publications/whoqol/en/ (accessed August 2014)



Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Reward: Anything (e.g. object, certification, grade, etc) provided in recognition of the completion of a course, or an achievement, or effort.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Router: A computer that is a gateway between two networks at OSI layer 3 and that relays and directs data packets through that internetwork. The most common form of router operates on IP packets. In the context of the Internet protocol suite, a networked computer that forwards Internet Protocol packets that are not addressed to the computer itself.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

4.19S

Screen reader: A software programme that interprets navigation and content into spoken text or braille. Used by users who are visually impaired or dyslectic.

Source: <https://abilitynet.org.uk/factsheets/introduction-screen-readers>

Screen magnifier: A software programme that magnifies a portion of the screen. Screen magnifiers are used by persons with visual impairments, reading - and writing impairments as well as motor impairments.

Source: <https://www.boia.org/blog/screen-magnifiers-who-and-how-they-help>

Script: A scripting (programming) language used to create dynamic Web content. However, in checkpoints referring to the written (natural) language of content, the term "script" is used as in Unicode [UNICODE] to mean "A collection of symbols used to represent textual information in one or more writing systems." Information encoded in (programming) scripts may be difficult for a user agent to recognize.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Secondary education: Educational programmes usually in compulsory education following primary education. Curricula of secondary education may have academic or vocational content and objectives.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary



Self-Assessment: Assessment undertaken by the student herself or himself, on her or his own criteria, or using a shared rubric (e.g. use of a reflective journal).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Self-directed Learning: A process by which learners take the initiative to pursue a learning experience and the responsibility to complete their learning, without necessarily excluding the involvement of other individuals. According to Knowles' (1975)⁵² general definition, in self-directed learning the learners organize their own learning by recognising their learning needs, setting learning objectives, identifying learning materials and resources, implementing learning strategies and evaluating their own learning outcomes.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Self-esteem: A person's overall sense of self-worth or personal value.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Self-fulfilment: The fulfilment of an individual's hopes and ambitions.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Server: An application programme that accepts connections in order to service requests by sending back responses. Any given programme may be capable of being both a client and a server; our use of these terms refers only to the role being performed by the programme for a particular connection, rather than to the programme's capabilities in general. Likewise, any server may act as an origin server, proxy, gateway, or tunnel, switching behaviour based on the nature of each request.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Sign language interpretation: Translation of spoken words and other audible information into a language that uses a simultaneous combination of handshapes, facial expressions, and orientation and movement of the hands, arms, or body to

⁵² Knowles, M. S. (1975). *Self-directed learning: A guide for learners and teachers*. Englewood Cliffs: Prentice Hall/Cambridge.



convey meaning. The national sign language is the maternal language of persons who are born deaf and a second language for person who become deaf.

Smart home: A smart home is a house or other dwelling with automated or remotely controlled components. Some "smart" components require an interface though most smart home features can be controlled by a mobile device or computer.

Source: https://techterms.com/definition/smart_home

Social media use: The ability to use social media sites such as Facebook, Twitter, and Myspace to communicate with others, and to create and sustain relationships with others (Boyd & Ellison, 2007⁵³).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Social participation: A person's involvement and interaction with others.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Software-as-a-service: A method of software delivery and licensing in which software is accessed online via a subscription, rather than bought and installed on individual computers.

Source: Oxford University Press (2020 In: Lexico.com, Available at: <https://www.lexico.com/en/definition/saas>)

Special School: A formal education school only for learners with disabilities. A special school may be specific to a certain type of disability (e.g. targeting learners with visual disabilities) or not. It is connected to the philosophy of segregating education in contrast to inclusive education. Booth & Ainscow, 1998⁵⁴; Symeonidou & Phtiaka, 2014⁵⁵).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

⁵³ Boyd, D.M. & Ellison, N.B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer Mediated Communication*, 13, 210-230

⁵⁴ Booth, T. & Ainscow, M. (1998). *From them to us: An international study of inclusion in education*. London: Routledge

⁵⁵ Symeonidou, S. & Phtiaka, H. (2014). *Education for Inclusion: From research to practice*. Athens: Pedio



Speech to Text (STT): The process of automatic generation from text or annotated text input to speech output.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Standardized assessment: An assessment designed to assist schools or other academic institutions in sorting out student performance along a continuum of ability and/or achievement. It is administered and scored in a predetermined, standard manner, so that the assessment results can be used to compare individuals or groups and highlight differences in achievement levels.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Summative assessment: Accountability-oriented assessment, usually high-stakes, which is employed at the completion of a particular sequence of learning activities to provide a macro view of teaching and learning. It includes marks or grades against an expected standard that sum-up or summarise the performance for individual learners, and/or statistics about the programme as a whole for internal or external accountability purposes.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Structured curriculum: A plan for interaction with learners which involves instructional objectives, content, materials and process for evaluating learning. Content is organized in specific units/sessions and corresponds to objectives and evaluation strategies.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Student: A person with disabilities of all ages that attends any formal or non-formal educational setting/school.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

4.20T

Technocentric curriculum (model for ICT): A curriculum where ICT-AT competencies are considered as a discrete curricular subject. It aims to equip learners with the necessary skills deemed important for their future (Nicholson,



1995⁵⁶), considering ICT literacy as the acquisition of basic digital skills (Karagiorgi, 2013⁵⁷).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Telecare: Term for offering remote care of older and physically less able people.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

Tertiary Education/Higher Education: The educational level following the completion of secondary education, for the acquisition of an academic or professional degree, including universities and other institutions that provide qualifications for higher learning degrees.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Text: Sequence of characters.

Source: Glossary from W3.org, online July 2020: <https://www.w3.org/TR/2006/WD-WCAG20-20060427/appendixA.html>

Text to Speech (TTS): The process of automatic generation of speech output from text or annotated text input.

Source: WAI (Printable) Glossary, online July 2020: <https://www.w3.org/WAI/GL/Glossary/printable.html>

Trainee: A person with disabilities of all ages who receives training (for ICT-AT competences).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

4.21 U

Undergraduate: Academic programs up to the level of a bachelor's degree, following secondary education.

⁵⁶ Nicholson, P. (1995). A curriculum for teachers or for learning? In D. Watson & D. Tinsley (Eds.), Integrating information technology into education. London: IFIP and Chapman and Hall.

⁵⁷ Karagiorgi, Y. (2013). Locating ICT for primary education in a reformed Greek-Cypriot national curriculum: A documentary analysis approach. *Education and Information Technologies*, 8(2), 1-22



Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Unicode: A character coding scheme that uses 16 bits for each character, designed to extend the capabilities of ASCII, which uses seven bits. Nearly all letters and symbols in all languages can be represented in a standard way with Unicode. The first 128 characters of Unicode are identical to those in standard ASCII. Unicode is an entirely new idea in setting up binary codes for text or script characters. Officially called the Unicode Worldwide Character Standard, it is a system for "the interchange, processing, and display of the written texts of the diverse languages of the modern world." It also supports many classical and historical texts in a number of languages.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

University: A formal tertiary (higher) educational school that offers structured educational programmes for the acquisition of an academic degree and where academic research is conducted.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Universal Design for Learning: Universal Design for Learning refers to a process by which a curriculum (goals, methods, materials, and assessment) is intentionally and systematically designed from the beginning to address individual differences (CAST 2011, 9⁵⁸).

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

User: The end-user or any person who is close to the end-user (e.g. family member, educator, carer etc) and is involved in the use of any ICT-AT product or service.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

User interface: It includes both:

- the user agent user interface, i.e., the controls (e.g., menus, buttons, prompts, and other components for input and output) and mechanisms (e.g., selection and focus) provided by the user agent ("out of the box") that are not created by content.
- the "content user interface," i.e., the enabled elements that are part of content, such as form controls, links, and applets.

⁵⁸ CAST (2011). *Universal Design for Learning Guidelines Version 2.0*. Wakefield, MA: CAST



Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Usability: Able or fit to be used.

Source: Oxford Dictionary: <https://www.lexico.com/en/definition/usable>

User agent: Any software that retrieves and renders Web content for users.

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

User-agent-supported: Implemented by user agents and assistive technologies

Source: Cowan. D, Najafi. D, Handbook of Electronic Assistive Technology, Academic Press, 2019

User Agent Accessibility Guidelines (UAAG): Guidelines that explain how to make user agents accessible to people with disabilities. User agents include browsers, browser extensions, media players, readers and other applications that render web content.

Source: W3C Web Accessibility Initiative: [https://www.w3.org/WAI/standards-guidelines/uaag/#:-:text=Who%20develops%20UAAG-.User%20Agent%20Accessibility%20Guidelines%20\(UAAG\),applications%20that%20render%20web%20content](https://www.w3.org/WAI/standards-guidelines/uaag/#:-:text=Who%20develops%20UAAG-.User%20Agent%20Accessibility%20Guidelines%20(UAAG),applications%20that%20render%20web%20content)

User Centred Design (UCD): A user interface design process that focuses on usability goals, user characteristics, environment, tasks, and workflow in the design of an interface. UCD follows a series of well-defined methods and techniques for analysis, design, and evaluation of mainstream hardware, software, and web interfaces. The UCD process is an iterative process, where design and evaluation steps are built in from the first stage of projects, through implementation.

Source: Shawn Lawton Henry and Mary Martinson, Accessibility in User-Centered Design

User experience: Commonly abbreviated "UX," it is the experience a person has using a product or service. In the technology world, this often refers to a hardware device or software programme. A positive user experience is simple, intuitive, and enjoyable. A negative user experience is complex, confusing, and frustrating.

Source: Tech Terms: https://techterms.com/definition/user_experience

User requirements: They are typically written when discussing the use cases for a project. The requirements definition is done with the customer or product managers that know how the embedded system will be used by the user. Many user requirements deal with how a user will interact with a system and what that user expects. If there is a screen or human machine interface aspect to the system, a user

requirement may be based on what happens when the user selects an action on the screen.

Source: Science Direct: <https://www.sciencedirect.com/topics/engineering/user-requirement>

Universal design: Universal Design is the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability.

Source: <http://universaldesign.ie/What-is-Universal-Design/>

United Nations Convention on the Rights of Persons with Disabilities

(UNCRPD): The Convention follows decades of work by the United Nations to change attitudes and approaches to persons with disabilities. It takes to a new height the movement from viewing persons with disabilities as “objects” of charity, medical treatment and social protection towards viewing persons with disabilities as “subjects” with rights, who are capable of claiming those rights and making decisions for their lives based on their free and informed consent as well as being active members of society.

The Convention on the Rights of Persons with Disabilities and its Optional Protocol (A/RES/61/106) was adopted on 13 December 2006 at the United Nations Headquarters in New York and was opened for signature on 30 March 2007. There were 82 signatories to the Convention, 44 signatories to the Optional Protocol, and 1 ratification of the Convention. It is the first comprehensive human rights treaty of the 21st century and is the first human rights convention to be open for signature by regional integration organizations. The Convention entered into force on 3 May 2008.

Source: United Nations: <https://www.un.org/development/desa/disabilities/convention-on-the-rights-of-persons-with-disabilities.html>

4.22 V

Video: The technology of moving pictures or images (Note: Video can be made up of animated or photographic images, or both.)

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Virtual Learning Environment: A learning environment based on the web, which is “designed to act as a focus for students’ learning activities and their management and facilitation, along with the provision of content and resources required to help make the activities successful.” (JISC, 2008)⁵⁹

⁵⁹ ISC. (2008) Definitions: Technology enhanced learning environments areas. Available at: <http://www.jisc.ac.uk/whatwedo/programmes/elearning/tele/definitions.aspx>



Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Visual object: A visual object is output from a visual viewport. Visual objects include graphics, text, and visual portions of movies and animations.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

Vocational education: Educational programmes that prepare learners for specific occupations in industry, crafts, technical careers or other professional positions in various fields, traditionally non-academic. Curricula of vocational education include learning objectives and strategies for the development of expertise in particular skills and techniques.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Vocational in-service training: Educational programmes delivered during an individual's employment, often organised by the employer, which provide learners with additional skills and expertise specific to their occupation.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

Vocational Training Centre: An educational institution that offers programmes to prepare learners for specific occupations in industry, crafts, technical careers or other professional positions in various fields, traditionally non-academic.

Source: ENTELIS project taxonomy and glossary: https://www.entelis.net/en/entelis_glossary

4.23 W

Web Accessibility: Web accessibility means that websites, tools, and technologies are designed and developed so that people with disabilities can use them

Web Accessibility Directive: The directive states that public sector agencies and other bodies governed by public law must comply with minimum accessibility requirements in the EN301549 v 2.1.2.

Source: <https://eur-lex.europa.eu/eli/dir/2016/2102/oj>



Web Content Accessibility Guidelines (WCAG): Guidelines developed through the W3C process in cooperation with individuals and organizations around the world, with a goal of providing a single shared standard for web content accessibility that meets the needs of individuals, organizations, and governments internationally. The WCAG documents explain how to make web content more accessible to people with disabilities. Web “content” generally refers to the information in a webpage or web application, including: natural information such as text, images, and sounds code or markup that defines structure, presentation, etc.

Source: W3C Web Accessibility Initiative: <https://www.w3.org/WAI/standards-guidelines/wcag/>

Web of Things (WoT): Set of Standard developed by W3C intended to enable interoperability across IoT platforms and application domains.

Source: <https://www.w3.org/TR/wot-architecture/Overview.html>

Webpage: A hypertext document on the World Wide Web.

Source: Oxford Dictionary: https://www.lexico.com/en/definition/web_page

Website: A collection of interlinked Webpages, including a host page, residing at the same network location.

Web service: A software system identified by a URI [RFC 2396], whose public interfaces and bindings are defined and described using XML. Its definition can be discovered by other software systems. These systems may then interact with the Web service in a manner prescribed by its definition, using XML based messages conveyed by Internet protocols. A collection of EndPoints.

Source: WAI (Printable) Glossary, online July 2020:
<https://www.w3.org/WAI/GL/Glossary/printable.html>

ⁱ Coffey, J. (1988). Guest Editorial: The Opening Learning Movement. *Innovations in Education & Training International*, 25(3), 195–96.

ⁱⁱ Coffey, J. (1988). Guest Editorial: The Opening Learning Movement. *Innovations in Education & Training International*, 25(3), 195–96.

