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CATCH 21st Century Skills

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CATCH 21ST CENTURY SKILLS

Teaching Materials

Communication / Collaboration / Critical Thinking / Self-Direction
Creativity and Innovation / Making Global and Local Connections
Using Technology as a Tool for Learning

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CATCH 21ST CENTURY SKILLS - Teaching Materials

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PROJECT COORDINATOR'S FOREWORD

The European Commission (2019) concluded that the European labour market is constantly evolving. The skills, competencies and qualifications that people need in order to succeed in the labour market are changing over time. To cope with these developments, people have to be fitted with a number of skills, including literacy, numeracy and digital skills. Managerial job seekers need to possess a broader set of competencies i.e. critical thinking, creativity, and collaboration. Education and training play a vital role in supporting young people in the development of their soft skills and competencies for civic and professional success.

European educational managers, scientists and academic staff have raised the following questions: Do we have the appropriate methodology and curriculum to improve 21st Century professional and civic skills? It would be optimistic to say yes. However, a lot of universities do not offer concrete courses and any curricula to meet this demand.

The international team of the Erasmus+ project, named **CATCH 21st Century Skills**, is currently developing a set of intellectual outputs in order to eradicate this lack of instruction, to help university students develop their 21st Century professional and civic skills. This publication is one of them. The teaching materials are based on social constructivist methodology, and consist of contributions from authors of **six European educational institutions**. **Seven teaching modules** guide academic staff on how to contribute to improving the soft skills of their students. The **didactic guide** is the second part and complementary to this publication. This guide supports teaching the seven modules included in the first part of this publication and presents the most relevant activating teaching methods. I am thankful to all contributors to this publication.

Dr. Mehmet Emin Bakay

EDITOR'S FOREWORD

We undoubtedly live in a time when we voluntarily, or inevitably, cope with various, rapidly changing situations that the world around us is bringing. In this regard, it is necessary to find meaningful ways to deal with them effectively. Moreover, with the increasing speed and supply of information of all kinds and formats, newer generations are becoming more helpless in being information literate and intellectually competent, which has been noticed, in a long-term perspective, by their potential employers. According to many international studies, and recently also based on research conducted by partner universities, it is more than clear that students, and applicants in the labour market, lack key skills resulting in a skills gap.

The growing demand of employers and the increasing importance of 21st Century Skills led the partner universities to the idea of finding and creating a suitable means to bridge this existing skills gap, focusing their attention on Communication, Collaboration, Critical Thinking, Self-Direction, Creativity and Innovation, Making Global and Local Connections, and Using Technology for Learning. For this reason, you are currently getting acquainted with a publication "CATCH 21st Century Skills: Teaching Materials" as an output of the ERASMUS+ programme KA2 - Strategic partnership aimed at increasing the quality of Higher Education Institutions (HEI) at the EU level in teaching the 21st Century Skills, in order to promote a better understanding of qualifications and make better use of available skills in the European labour market.

Teachning materials are divided into seven modules processed by the participating partner universities. Each module consists of six lessons providing an introduction to the issue, theoretical background, practical aspects of the issue, and activation tools, such as tasks and questions for the readers (university students). The contribution of the publication is enriched with an insight into the real environment

through the results of the analysis of the Market Research focused on its needs across the partner countries and the identification of the most needed 21st Century Skills, which clearly emerged from the surveys. Furthermore, the publication provides guidelines on the 21st Century Skills transforming key findings of the labour market research into the didactic process in order to increase the quality, potential, know-how and competences of HEI teaching staff.

I wish that the publication is beneficial to you, and that it helps to contribute to a successful learning, supporting the acquisition of the 21st Century Skills - so unique, more essential than ever before, and so crucial as the future for career success in this millennium.

Karel Němejc, Ph.D.

Communication

İrem Özgören Kinli – Mehmet Emin Bakay

MOTTO: „The world is a global village."
Marshall McLuhan

LEARNING OBJECTIVES OF THE MODULE

After completing this module, learners will be able:

- to understand the impact of communication on society in the 21th century,
- to discuss the effective ways Sof communication in a digitalized world,
- to assess how informalization concept may help to understand forms of modern communication,
- to learn media, visual and digital literacy,
- to demonstrate how language sensitivity improves communication,
- to explore the latest effective verbal communication and presentation techniques,
- to illustrate how to improve nonverbal communication techniques.

TIME, SPACE AND COMMUNICATION: TECHNOLOGICAL PARADIGMS

INTRODUCTION

There are at least two definitions of the term communication, which seem to have gained wider acceptance in the literature. Communication as (1): "a process by which A sends a message to B upon whom it has an effect" and as (2): "negotiation and exchange of meaning, in which messages, people-in-cultures and 'reality' interact so as to enable meaning to be produced or understanding to occur" (O'Sullivan, Hartley, Saunders & Fiske, 1993, p. 42). Therefore, the aim of communication is to help the actors (receiver and the sender of the message) to achieve the **set target**.

While classical studies focus on the **aim** and the **types of communication**, technological paradigms in communication research rise the question to what extent can new tools of communication play a founding role in shaping social

relations. Technological advancements in communication have always had **social**, **cultural**, **economic** and **political effects** on societies. On this point, Marshall McLuhan explains how technology shapes our environment and changes the course of human life as well. He powerfully demonstrated the impact of technology over the ways of communication and reception of messages. This lecture will explore how Marshall McLuhan, as a theorist of technological culture, may help us to make sense of our new digital age. Correspondingly, by following McLuhan's technological determinism, we will be able to identify the impact of **new communication technologies** on **social interaction** and discourse.

THEORETICAL BACKGROUND

Marshall McLuhan (1911-1980) is a Canadian communication theorist whose works are considered classics in media, culture and technology theory. He argues that all media are extension of man, thus extensions of our senses. In his studies, he focuses on how we experience the world, not on what we experience (thus not on the content). His ideas represent the best examples of **technological determinism**, which emphasizes the **influence of technology on society's communication**. His legacy has enriched our understanding the dynamics of technological transitions in media and communication.

Medium is the message

He coined this famous dictum: "Medium is the message" (McLuhan, 1964, p. 23). This statement means that the form of a message (the channel through which a message is transmitted) determines the ways in which that message will be understood.

This dictum has more than one meaning. On the one hand, a medium imposes a new environment, and it has its own impact on our **perceptions** and **sensibilities**, which are its unique message. On the other hand, a **medium** configures its **content** or **message**. For instance, a play shown on television influences its viewers differently from the original version.

Hot versus cool media

McLuhan proposes to categorise the media as **hot** and **cool**. This distinction addresses to the different sensory effects linked to **higher** or **lower definition** of media.

He defines the **hot media** as those, which are **rich in sensory data**. Hot media are **high definition** or **resolution**. There are a few left to be completed by the receiver. **Participation** is, therefore, **low** in hot media. Here are a few illustrative examples: Radio, print, photographs, movies and lectures, etc.

He describes the term **cool media** as those, which are **low in sensory data**. Cool media are **low in definition**, while they are high in participation to complete the lacking information. They require a **higher sensory involvement** and an **active participation** of the **audience**, since they do not provide large amounts of data on the receiver. He exemplifies cool media as television, telephone, cartoons, speech, seminar, mystery novel and manuscript, etc. Although McLuhan did not focus on computer-mediated communication tools in 1960s, it is possible to argue that computer screens and computer activities might be conceptualized as cool medium. In this respect, **social media** may be exemplified as a cool medium since it requires active participation and engagement of its users.

Global Village

McLuhan coined the term Global Village in the 1960s. In his book *The Gutenberg Galaxy* (1962), he argues that people throughout the world are increasingly interconnected to each other by modern telecommunications. He claims that the whole world is considered as being economically, socially, and politically interdependent through the usage of new media technologies in the image of a global village.

Picture 1: United Nation's COVID-19 tweet
Source: UN's official twitter account; 2020, 16 May

PRACTICAL EXAMPLE

Since the situation with coronavirus (2019-NCoV) is a global health emergency, United Nations frequently share information on the outbreak via mass media. The screenshot (in the tweet on the Picture 1) taken from UN's official twitter account on May 16th, 2020 is an illustrative example of effective ways of communication in a digitalized world. As the world is a global village, according to McLuhan's terminology, we use more **visuals** (or emojis) and less words to create more impact. Popular social communication networks dictate the way how we communicate.

TASK FOR STUDENTS

Find an actual example of a natural disaster. How a Broadcasting Corporation (such as BBC) announces their press release differently via

radio, television, Facebook and Twitter. Compare print media, visual media and social media as a disaster news medium by making reference to statements made by Marshall McLuhan.

CONCLUSION

McLuhan made great methodological contributions to technological issues in media and communication. His main interest is the impact of modern telecommunication on individual's self-consciousness and behaviour. The legacy of his reflections on technology helps to **determine direction** of **discussions** and the effective ways of communication in a digitalized world. He has contributed as well to our **understanding of technological and cultural causes of globalisation**.

FEEDBACK QUESTIONS

1. *How Marshall McLuhan explains the impact of communication on society in 21st century?*
2. *What does Marshall McLuhan mean by his aphorism: "The medium is the message"?*
3. *How does Marshall McLuhan define hot media and cool media?*
4. *What did Marshal McLuhan mean when he argued: "The world is a global village?"*

INFORMALISATION AND COMMUNICATION

INTRODUCTION

Formalisation refers to a tendency towards **standardization of rules** and regulations, as well as written and unwritten policies and procedures in modern societies. In contrast to this, informalisation signifies an inclination towards **fragmentation** and **deregulation**. We are now experiencing new waves of informalization in various spheres of social and

business life. Informalization process have also been witnessed in the field of media and communication. It is growing presence of increasingly unregulated ways of communication and atypical forms of interaction. Likewise, it is the incorporation of features of familiar and intimate personal discourse into formal and public types of spoken and written communication.

THEORETICAL BACKGROUND

Formalisation

Norbert Elias's theory of the **Civilizing Process** (first publication in 1939) focuses on the process of **formalising manners** and disciplining of people and their emotions. The theory argues that a long-term process of formalisation has been dominant from the sixteenth up to the last quarter of the nineteenth century. In the West, until the end of nineteenth century, Elias demonstrates a consistent trend towards the formalisation of manners during which the code of manners became increasingly detailed and strict giving rise to a particular type of self-regulation.

Informalisation

The concept of informalisation which was coined by Cas Wouters in an article (in Dutch) entitled "Has the civilising process changed direction?" in 1976. Informalisation denotes the **transformation of human relations** in Western industrialised nation-states as a result of **changing power balance** between **different social classes**, **sexes** and **generations** over the last century. It describes increased forms of emotional and behavioural alternatives. It signals the gradual decrease of power, status and wealth differences between social groups and the softening of manners with the further equalisation of social conditions. Currently, the process of informalisation enables greater sensitivity to nuances, increasing variety of behavioural and emotional ways of expressions and thus implied a **greater flexibility in social conduct**.

Informalisation process in communication

Computer mediated channels of communication allow its users to establish online communication via **instant messaging**, **e-mail** and other **social networks** whereas offline communication requires face to face contact or personal interaction in a physical space, in which people can hear and see each other. Modern technology dominates our communication. Information is processed easily and quickly in digital age thanks to new communication tools such as social media, direct message, instant message, SMS text messaging, e-mail marketing, direct email, blogging, voice calling, video chat, video marketing, live web chat, and virtual reality, etc.

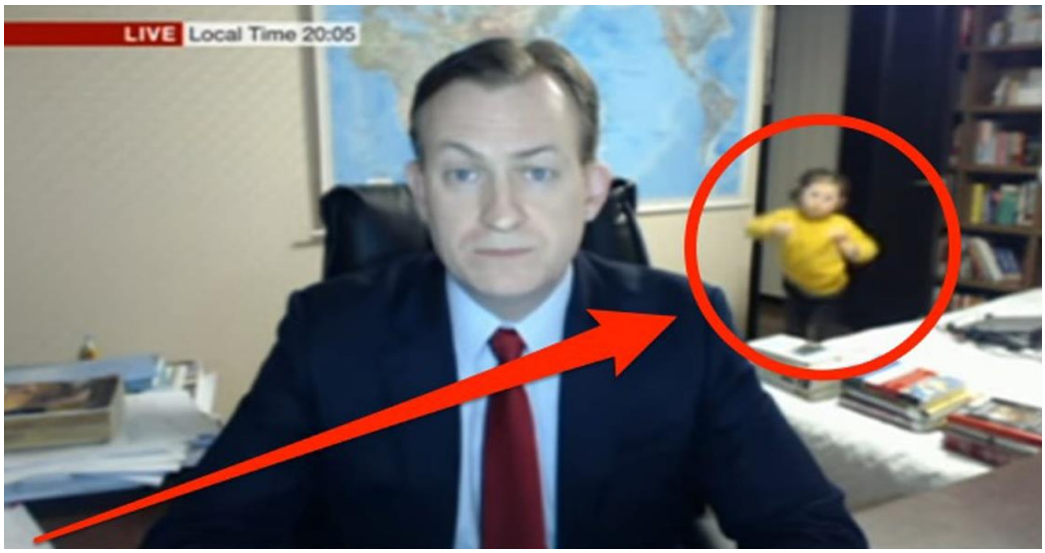
The technological revolutions opened up new modes of communication. Some authors claim that computer mediated communication in English, usually, has oral **qualities** (Murray, 1991; Baron, 1998; Crystal, 2001). The long-term shift towards orality in English has been accelerated by **technological transformations** and there is a tendency towards orality in computer mediated communication.

Fairclough, in his "Critical Discourse Analysis", focuses on the processes of informalisation and technologisation of discourse. He argues that, "in modern discourse practices, there are more and more mixtures of formal and informal styles, technical and non-technical vocabularies, markers of authority and familiarity, more typically written and more typically spoken syntactic forms" (Fairclough, 1995, p. 79), as the differences between oral and written forms of expressions become blurred.

Sharon Goodman (1996, p. 146) argues that the processes of **marketisation** and **informalisation** are becoming increasingly widespread. According to her, language has adapted to the rapid changes in communication technology, and people started to feel the urge to learn new linguistic strategies to be a successful business person. She argues that people become **"producers of promotional texts"**. In this context, she describes the term **informalisation** as the process during which informal ways of communication that are traditionally reserved for intimate relationships are now used in wider **social contexts**. Additionally, more **informal type of language** become widespread in every aspect of life.

PRACTICAL EXAMPLE

On March 10, 2017, Robert E. Kelly, a professor of political science, had a live interview on Skype with a BBC correspondent about the impeachment of South Korea's president and the future of the country's relationship with North Korea. The interview was interrupted by his children and the moment became a **viral meme**. Although this seems to be very exceptional, we might experience these kinds of incidence more than ever in this era of **informalization**.



Picture 2: BBC News - Children interrupt BBC News interview [Video]
Source: YouTube (2017, Mar. 10), https://youtu.be/Mh4f9AYRCZY

TASK FOR STUDENTS

Find at least three public service announcements which adopt an informal or conversational style of language.

CONCLUSION

Computer mediated communication along with market-oriented culture has transformed our communication skills. There is a high tendency towards the usage of less formal, often spoken language and increased use of more **informal vocabulary** and slangs in all types of communication. Political actors, organisations and institutions have started to communicate with people by mixtures of formal and informal styles in their social

media accounts. As a result of frequent usage of computer mediated communication, the trend towards **deregulation** became popular more than ever.

FEEDBACK QUESTIONS

1. *How do technological innovations change the communication styles?*
2. *How can you define the informalization process in communication?*
3. *Can you give some actual examples for illustrating the informalisation trend that is mostly visible in social media accounts of some politicians?*
4. *How informalization concept may help to understand new forms of modern communication?*

ORALITY VERSUS LITERACY / LITERACY VERSUS VISUALITY

INTRODUCTION

Literacy is defined as the ability to read and write, while orality describes cultures that are unfamiliar with the technologies of writing. Walter Ong contributes to orality-literacy debate by coining the term **'the second orality'**, which incorporates some elements from both writing and orality mode. Thereafter, this debate led to the emergence of another discussion between literacy and visuality.

THEORETICAL BACKGROUND

In his classical work, Walter Ong (1982) compares oral cultures with literate ones. He defines the **oral cultures**, as the ones which are untouched by writing. He calls the kind of culture as **primary oral culture**. In this pre-literate culture, words have no visuality, they have presence just with sounds.

In a primary oral culture, expression and thought tend to be:

- additive rather than subordinate,
- aggregative rather than analytical,
- copious and redundant,
- conservative and highly traditionalist,
- close to the human lifeworld,
- agonistically toned,
- empathetic and participatory rather than objectively distanced,
- homeostatic,
- situational rather than abstract.

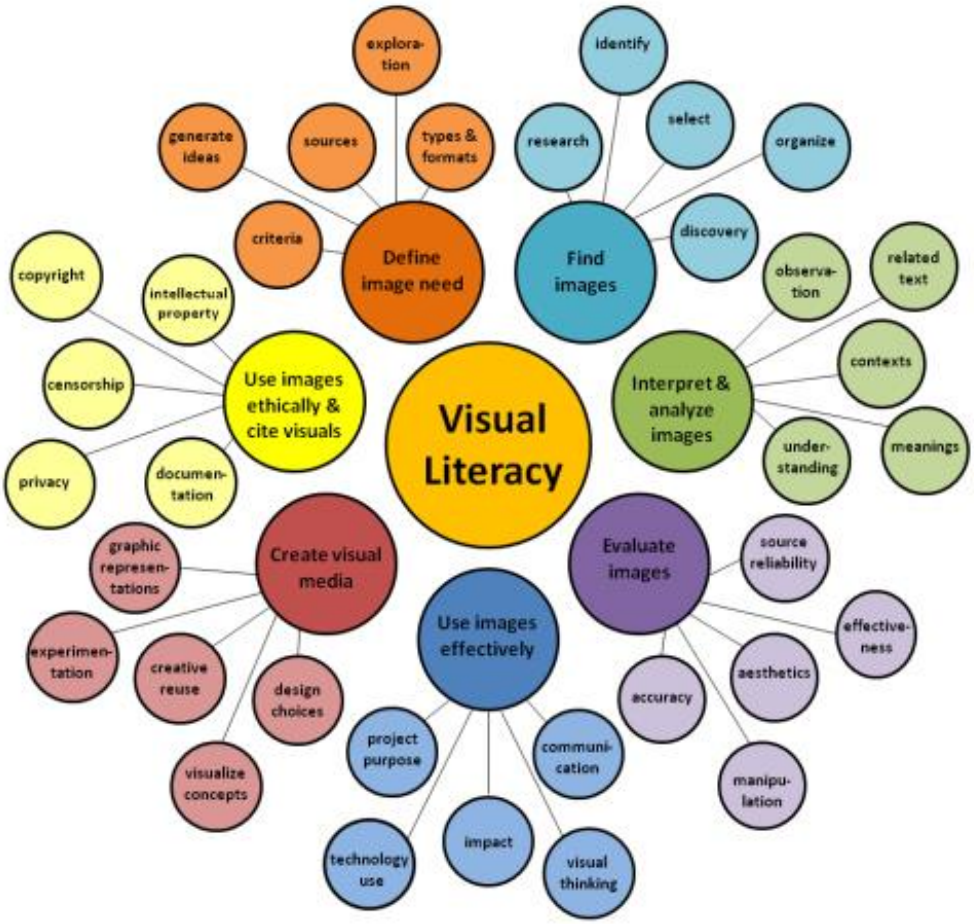
Oral narrative style adds one sentence to another, rather than relating them in analytical or causal ways. Since the survival of oral culture depends on the basis of what is remembered, it depends on established form of words or symbols to implement memory. In order to increase the concreteness of the image, it tends to include formulaic **expressions**, **adjectives**, **epithets**, **standardized themes**, **clichés**, **maxims** and **copious repetitions**.

Secondary Orality

Secondary orality is a concept which was firstly described by Walter Ong in his book "Rhetoric, Romance, and Technology" in 1971. He developed this concept in his famous book "Orality and Literacy" in 1982. According to him, "secondary orality is essentially a more deliberate and self-conscious orality, based permanently on the use of writing and print" (Ong, 1982, p. 133). While it addresses to a post-literacy period, it fosters communal sense. It focuses on **present moment** and it uses **formulas**. It assumes that electronic media may arouse a sense of community, and it may provoke a return to pre-modern forms of sociality. Although secondary orality was initially introduced in connection with **mass media** such as television and radio, this theory has also been applied to computer-mediated communication.

Visual Literacy

As languages get more complicated, literacy has changed its meaning throughout communication history. With the evolution of the concept literacy, we are urged to develop **verbal literacy**, **computer literacy**, **technological literacy**, **visual literacy**, **media literacy**. **Visual literacy** is a linguistic communication tool that helps us to read, write and create **visual images**. The visual literacy was firstly coined by John Debes in 1969. Since the first introduction of the term, digital technology has greatly impacted our communication skills and our understanding of visual literacy.

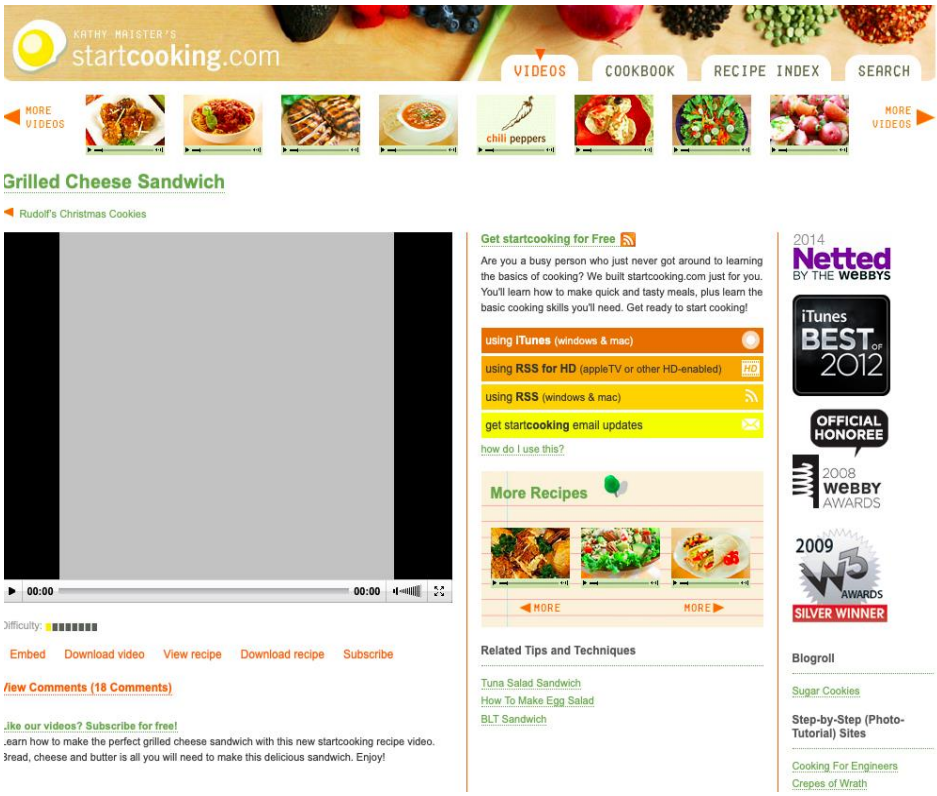


Picture 3: Components of Visual Literacy
Source: https://sites.google.com/site/shiftingpedagogy/resources/visual-literacy

PRACTICAL EXAMPLE

In a society where oral tradition reigns, recipes are transferred through folktales as well as kitchen demonstrations. Young ones

usually learn cooking techniques from their family members. In literate cultures, knowledge transmission passes through written media via cooking books. Nowadays, cooking techniques and tips are learned from **blogs** and **online videos** in the **visual culture**, which dominates the modern age. Below is one of the cooking websites from which it is possible to get to know the basics of cooking.



Picture 4: Start cooking website
Source: https://startcooking.com

TASK FOR STUDENTS

Write a 1000-word essay in which you discuss, through visual literacy concept, whether all individuals, in a visually oriented society, are able to critically view, and create visual media.

CONCLUSION

The orality-literacy along with visual literacy paradigm has been determining our ways of communication. The ease and accessibility of digital technologies offer new **visual communication practices** in

various contexts, and **images** have become an essential element in our communication forms. As we are surrounded with visual images of different kinds from different sources in our daily lives, it becomes more significant to explore how orality, literacy and visuality shape our mentalities.

FEEDBACK QUESTIONS

1. *How can you define media, visual and digital literacy? Explain them briefly by giving some examples.*
2. *What are the main characteristics of thought and expression in primary oral cultures?*
3. *How secondary orality is different / similar from primary orality?*
4. *What impact does visual literacy have on communication?*

LANGUAGE SENSITIVITY IN COMMUNICATION SKILLS

INTRODUCTION

Language is considered an **important tool of communication**. Effective use of language is crucial in order to **convey the right message**. To improve our communication skills, we need to learn how to better use appropriate language while speaking or writing. Apart from using a grammatically correct language, it is essential to learn how to **formulate our ideas** in the best way possible. We will discuss at this lecture how **language sensitivity** may help us to communicate in a better way with other people.

THEORETICAL BACKGROUND

Language shapes our subjective realities, and thus it determines human interactions. Additionally, language may also reveal and promote our biases. From this standpoint, language sensitivity in

communication skills evokes **political correctness** as a means of promoting tolerance and avoiding offense while describing identity-based groups by external markers such as race, physical abilities, gender, ethnicity, sexual orientation, geographic location, socio-economic status or culture. Therefore, political correctness refers to an intention to avoid using an offensive language in **multicultural communication**.

Language sensitivity promotes the use of **inclusive language**, which allows oneself to communicate with others in more **impartial ways**. Inclusive language is sensitive to all kinds of differences by acknowledging diversity and encouraging equal opportunities. Guidelines are prepared by different agencies, institutions, organisations and government bodies to highlight ways of using an effective inclusive language. These guidelines recommend avoiding any statements perpetuating stereotypes and norms. The key point is to know inclusive words and phrases, and to replace offensive terms with respectful alternatives.

In order to clarify this matter, it is useful to present some of the following principles for an inclusive language usage.

Culture, race and ethnicity

Since racial and ethnic labels, expressions and names may be used to portray certain groups as superior or inferior to others:

- Ethnic or racial background of a person or a group should be mentioned where this information is relevant to the discussion.
- We should avoid making any kind of (positive or negative) generalisations about members of a particular ethnic or racial group.
- We should acknowledge the existence of multiple ethnicities within a nation.
- We should avoid using offensive humour and derogatory labelling.

Age

It is equally important to use an inclusive terminology in relation to age. In regard to this matter, we should avoid any connotation that a specific age group is more or less able to do what they want and need to do.

Disability

The basic principle herein is to focus on the **individual**, **not the disability**. We should avoid unnecessary references to the disability if it is irrelevant to the discussion. We should use a terminology that recognises that the disability in question is only one of the characteristics of that person or group.

Socioeconomic status and location

The general principle is to refer to socioeconomic status or location only it is relevant to the discussion.

PRACTICAL EXAMPLE

Language sensitivity requires using a **gender-neutral language** or gender-inclusive language. In order to treat all genders equally, European and international institutions (such as the European Commission, the European Parliament, the International Labour Organisation, the World Health Organisation and the United Nations) have prepared some guidelines for a **gender-inclusive** language. The following picture is an example for greeting others by using inclusive gender-neutral language.

Picture 5: An Incomplete Guide to Inclusive Language for Startups and Tech. [Blog]
Source: Courtney Seiter (2018, 14 September), https://open.buffer.com/inclusive-language-tech/

TASK FOR STUDENTS

Make a list of 10 commonly misused and 10 misspelled words and phrases in English. In this context, then write a 500-word essay in which you discuss how an inclusive language with an appropriate word choice and spelling may contribute to the effectiveness of communication.

CONCLUSION

Language is a **powerful tool**. It creates a **huge impact on people**. For an effective communication, it is really important to use a **language** that is **sensitive** to the target audience. Using **inclusive language** helps to build a **better social life**, and to create a **safer work environment**. It is worth herein stressing that inclusive language is more than just replacing specific words with more acceptable terms. It is about **changing the mentalities**, long-held habits and attitudes. It is about generating more awareness and showing **respect with a mindfulness** for the feelings of others.

FEEDBACK QUESTIONS

1. *What are the most significant examples of political correctness?*
2. *How can an inclusive language be useful in encouraging diversity at global workplaces?*
3. *What are the general principles to follow an inclusive language usage?*
4. *How language sensitivity may improve communication? Discuss this matter by giving some examples.*

NONVERBAL COMMUNICATION: GESTURES AND MANNERS

INTRODUCTION

Sending or receiving messages by using words are not the only ways of communication. In a communication process, the sender encodes

the message either verbally or nonverbally. Verbal communication is created through language by using both our words and **verbal fillers** (i.e. um, uh, er…etc.), whereas nonverbal communication is the communication between actors by means other than speech. Nonverbal communication refers to **eye contact** (or lack thereof), **facial expressions**, **tone of voice**, **body distance**, **gesture**, **posture**, and other ways people may communicate without the use of spoken language.

Nonverbal communication includes the usage of visual cues such as the study of **movement**, **gestures** and **mimics** (kinesics), the study of the significance of personal and social distance, space and orientation in interpersonal communication (proxemics) and the study of the usage of the sense of touch in social interactions (haptics).

As nonverbal communication influences our discourse, it is considered as a critical aspect of communication. In some cases, nonverbal miscommunication might occur and lead to **misunderstandings**. It is in the context becomes very important to improve nonverbal communication skills. The development of the art of nonverbal communication in practice might help individuals to succeed in their personal and business lives.

THEORETICAL BACKGROUND

1. Nonverbal communication

"Nonverbal communication is the way of communication by receiving and sending messages without using words". But we should not consider nonverbal communication as if it is isolated from speech. Instead, some complex interaction exists between body signals and words. In our daily lives, around 65% of our communication is **nonverbal**, while just 35% of our communication is **verbal**. What we understand from nonverbal communication depends on our cultural and **social environment**. Because nonverbal communication has especially **cultural connotations**.

We give most of our messages through postures, expressions or physical contacts.

Eye contact, touch, gestures, physical space (nearby or far away), facial expressions, postures, and paralanguage are samples of seven forms of nonverbal communication.

Oculesics, as a visual form of nonverbal communication, is the study of **eye contact**, **gaze** (direction and intensity) and **eye movement**. Eyes could deliver a message of their own. While mutual eye contact can be interpreted as a sign of liking, a lack of eye contact might be considered as a sign of extreme disrespect. While looking at listeners during a speech establishes a rapport with spectators, looking back the speaker reciprocates the establishment of the rapport between speaker and listeners.

As a type of nonverbal communication through touch, **haptic** communication, expresses various messages during **interpersonal relationships**. While a warm touch might create positive impact, a violent touch can lead to negative outcomes. Touch can be interpreted in diverse dimensions and contexts: Intensity of touch (strong or delicate), **duration of touch** (prolonged or short), **location of touch** (touched area) and **frequency of touch** (number of touches). These touches might communicate different emotions such as gratitude, love, happiness, sympathy, fear and anger.

1.1 Gestures allow people to express a variety of **thoughts and feelings** through movements of body expressions, face and body parts. Pointing, handshakes, saluting, waving are some well-known examples of communicative gestures. They can give their messages alone or they might supplement a message given by verbal communication. A gesture might be a sign of involuntary reaction to a feeling of anger (such as throwing one's arms up) or a sign of voluntary response to salutation (such as waving hello).

The study of space and distance by people in a nonverbal context is called **proxemics**. Each culture has different normative space expectations. While standing 'too close' to a person might be considered as normal in some cultures, others might

prefer keeping distances from each other by expressing their discomfort for this kind of proximity.

1.2 Facial expressions can be voluntary or involuntary to express certain **emotions**. Face offers information about race, ethnicity, sex, age and status. Through facial expression, it is possible to demonstrate some universally recognized emotions such as disgust, contempt, fear, anger, surprise, sadness and happiness. The intensity of these expressions, changes from one culture to another.

Posture can express various information about a person's **state of mind**, his/her submissiveness, confidence or reactions to certain situations. Each posture represents different meanings. For instance, a forward-looking posture might symbolize a confident personality, a withdrawal posture might signify shyness or boredom.

1.3 Paralanguage is an exceptional type of nonverbal communication since it exists when we both speak and use words. Paralanguage involves verbal and nonverbal aspects of speech including **intensity**, **tone**, **pausing** or **silence**. Paralanguage conveys emotion or gives nuanced meaning by using some techniques. For example, a silence between verbal messages can be interpreted as a sign of hesitation and it may indicate the requirement of some time to gather thought.

When interlocutors have different cultural and linguistic backgrounds in an intercultural context, nonverbal type of communication becomes significantly important.

2. Intercultural communication skills and nonverbal misinterpretations

We communicate most of our nonverbal messages in various ways. To communicate accurately a nonverbal message across cultures is a complex issue. Nowadays, more heterogeneous groups of people in terms of **culture**, **race**, **age**, **gender** and **education** work together in **global workplaces**. This workforce diversity requires a type of organizational culture in which employees have to develop their **intercultural communication skills**. Nonverbal type of

communication is especially prone to deceptive understandings in cultural comparisons. There are various interpretations and expectations in relation to body languages and postures.

Much of our nonverbal behaviour is learned and is therefore culturally unique. While people from all cultures express their emotions (such as sadness, happiness, anger, etc.) universally, they manifest various gestures differently. Some cultures have tendency to make eye contact less regularly and for a short amount time, for instance. Our culture teaches us how to communicate by touching others with our bodies, with our eyes, with our voices, with smell, through the usage of space and through the **way we dress** and present ourselves.

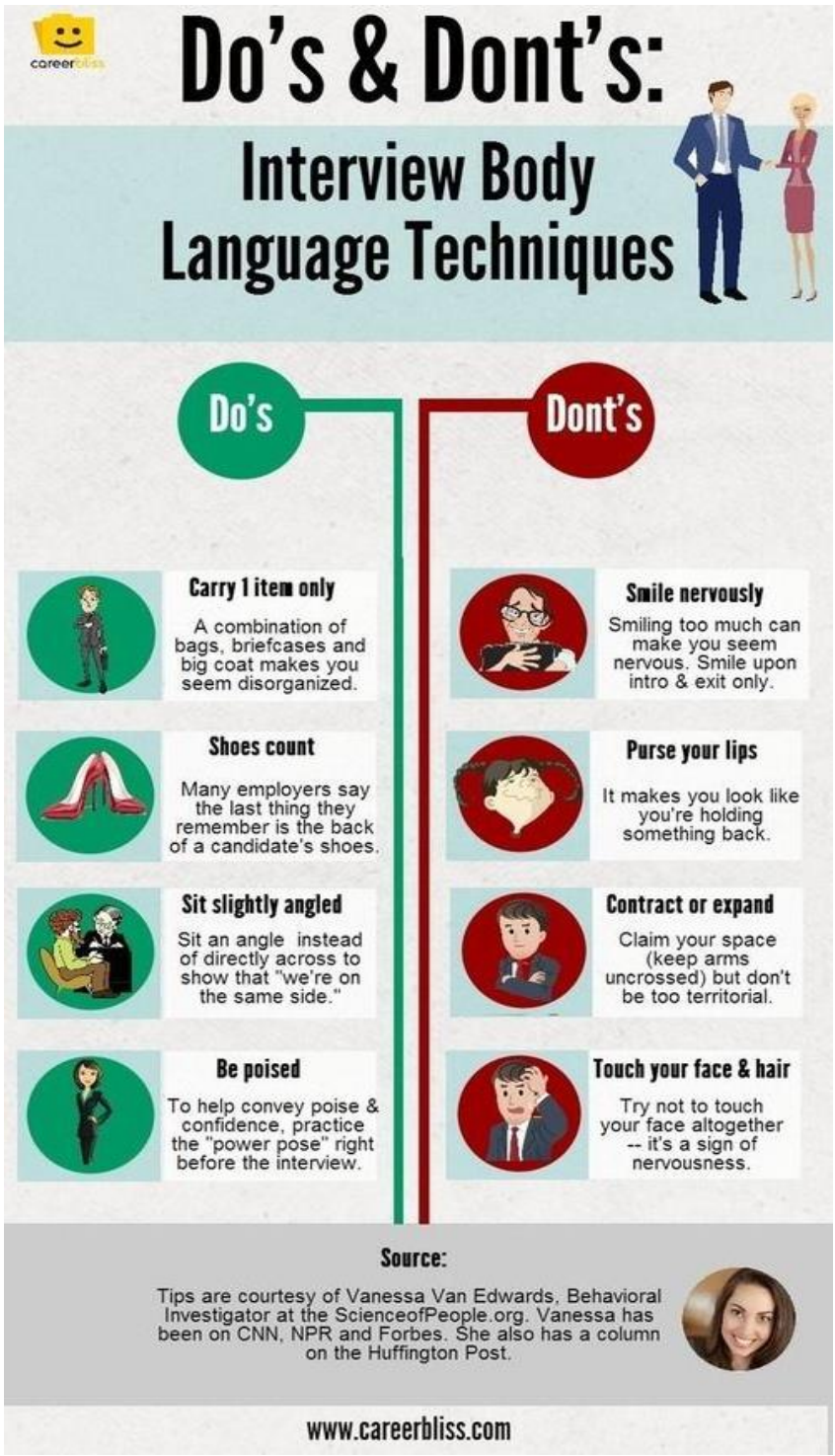
In an intercultural communication, it is possible to violate the expectations of others by our nonverbal behaviours. For example, we may touch too much or we may stand too close to that person. In that case, it is really important to know and to respect the codes of nonverbal communication, if we really want to establish an **impressive communication**.

TASK FOR STUDENTS

Different countries and their respective cultures employ different types of body language and gestures. Find five gestures that have variations in different cultures and compare them with each other.

PRACTICAL EXAMPLE

As a type of nonverbal communication, **body language** helps to make a good first impression. The following infographic for nonverbal communication **do's** and **don’ts** demonstrate ways to make a **great first impression** in a job interview.



Picture 6: Infographic of the body language tips for job interviews (blog)
Source: Vanessa Van Edwards (2013, 3 June), https://www.careerbliss.com

CONCLUSION

Successful communication occurs when a **sender** and a **receiver** agree upon the shared meaning of an intended message. Miscommunication takes places when a receiver gives an erroneous meaning to

a verbal or nonverbal message. **Miscommunication** may happen more frequently in **intercultural communication** than intracultural communication. Each culture gives unique meanings to nonverbal expressions. For an effective type of communication, it is important to raise awareness about the different attributions that we make about nonverbal communication in other cultures.

FEEDBACK QUESTIONS

1. *What are the basic forms of nonverbal communication?*
2. *Why the field of nonverbal communication is particularly prone to false interpretation in cultural comparison?*
3. *What is the relationship between intercultural communication skills and nonverbal misinterpretations?*
4. *What are the new techniques to improve nonverbal communication?*

EFFECTIVE VERBAL COMMUNICATION AND PRESENTATION SKILLS IN DIGITAL AGE

INTRODUCTION

An effective presentation takes full consideration of target audiences' expectations and needs in order to achieve the desired outcomes. This lecture is designed, firstly, to present the basic stages of **planning** of a presentation. And then, we will focus on the techniques for delivering an **effective presentation** to the audience. Traditional presentation tools are not considered anymore as effective for impressing audience. As presentation techniques have changed with the advances in technology, we will explore effective verbal communication techniques and presentation skills in the digital age.

THEORETICAL BACKGROUND

We are often required to present our ideas to other people in our personal and business lives. An effective presentation requires, firstly, a careful planning.

Planning

In the first step, we need to set an **objective** for our presentation, and then, we should decide the type and the design of our presentation to meet our objective.

An effective speaker acknowledges the variety of differences based on **interests**, **levels of knowledge** and **experience** and prepare for and respond to them accordingly.

As the **physical environment** (such as venue, room light or sound) may influence the quality of the presentation, it is important to assess the suitability of these conditions.

A successful presentation is composed of **logical**, **structured** and **coherent** arguments.

Performance

A convincing presenter needs to be assertive by his or her posture. The presenter should be in permanent contact with his/her audience. An effective **voice modulation** helps the speaker to win the audiences' attention.

Visual aids and technological tools

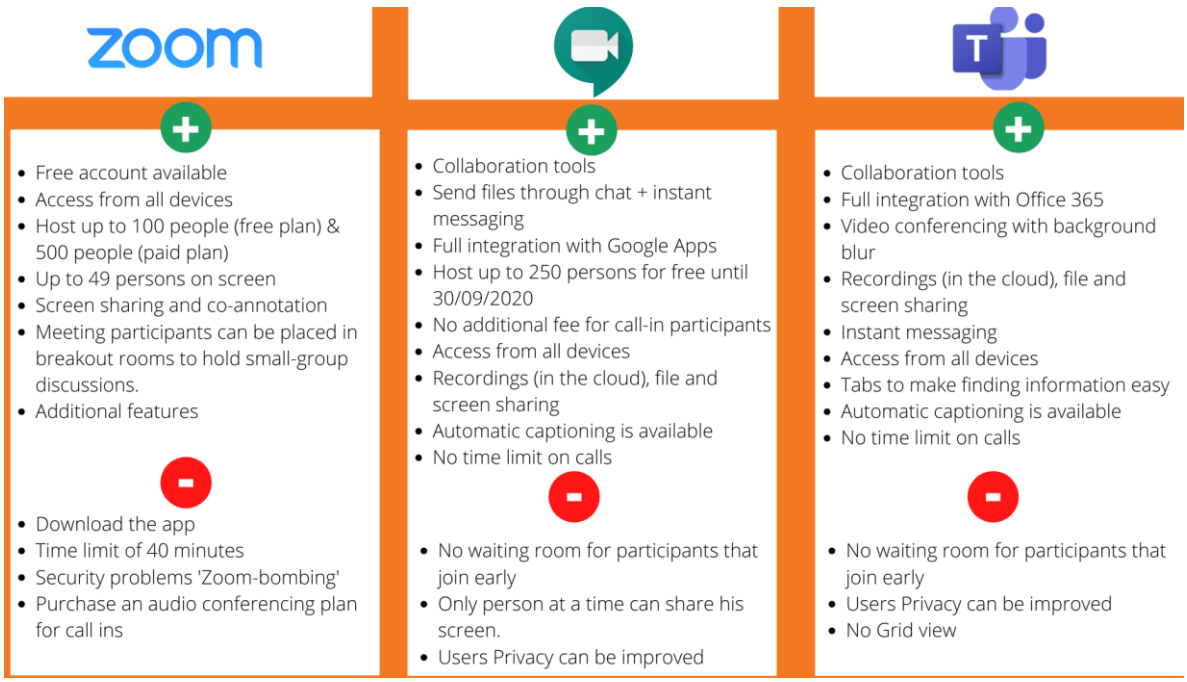
With the rising demand of **visually attractive** and impressive presentations, there is an increasing demand for **multimedia presentations**, which have become an inevitable part of our lives. Developers offer a variety of alternatives for free or paid presentation software programs. Some presentation software programs are cloud-based, others are downloaded for offline use. The following software programs are the most popular ones that are used for presentations. Collaborative presentation tools such as Google Presentation, VoiceThread; tools for sharing Presentations

such as Slideshare, SlideRocket; Zoom Browsers such as Prezi; other presentation tools such as Wordle, Cooliris, Dipity.

Besides these technical points, it would be helpful to consult the best examples of effective communication and presentation skills in the digital age. One example here is the case of TED Talks programs, through which inspiring thinkers, innovators and doers have been sharing their inspiring ideas.

PRACTICAL EXAMPLE

COVID-19 revived the need to explore online teaching and learning opportunities. Thus, it became crucial to be able to use digital learning management systems, e-learning platforms and communication tools. The following picture compares some of these communication tools (Zoom, Google Meet, Microsoft Teams) for an effective distance learning during the pandemic.



Picture 7: Comparing Zoom, Microsoft Teams and Google Meet [Blog]
Source: Charlotte Verbrugghe (2020, 10 April),
https://www.fourcast.io/blog/comparing-zoom-microsoft-teams-and-google-meet

TASK FOR STUDENTS

Create a presentation on 21th century communication skills by using a digital software program.

CONCLUSION

To be able to communicate accurately is the key element to improve verbal communication skills. To deliver a successful presentation is one of the essential 21st century communication skills. An effective presentation requires a **careful planning** and a successful performance with **visual aids** and latest technological tools. We need to get inspired by good examples in order to adapt the new presentation skills in the digital age.

FEEDBACK QUESTIONS

1. *What are main elements of effective verbal communication?*
2. *What are the main stages of a successful presentation?*
3. *What are the latest effective verbal communication and presentation techniques?*
4. *What are the most popular software programs that are used for presentations?*
5. *What are the effective ways of communication in a digitalized world?*

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Collaboration

Erdinc Duru – Asuman D. Paksu – Murat Balkis – Sibel Duru

MOTTO: „Coming together is a beginning, staying together is progress, and working together is success."
Henry Ford

LEARNING OBJECTIVES OF THE MODULE

After completing this module, the learners will be able:

- to define the elements of collaboration and collaboration process,
- to understand the process of being a capable team,
- to comprehend the importance of trust and respect in the process of being a team,
- to develop listening skills in collaboration,
- to develop perspective-taking skills in collaboration,
- to develop conflict resolution skills in collaboration,
- to design a road map for team members,
- to comprehend collaboration in the digital era,
- to improve and encourage collaboration skills.

THE ELEMENTS OF COLLABORATION AND COLLABORATION PROCESS

INTRODUCTION

Today, increasing technological developments have facilitated interactions among countries. In many **societies**, **social**, **economic**, **cultural** and **political changes** and **transformations** have gained unprecedented momentum compared to previous periods. The shifting and exponential growth of existing information within the framework of this rapid change have led to a process in which the acquisition of knowledge and production, distribution, and intelligence consumption is essential. This change has affected the education field as much as other fields and increased and differentiated society's expectations and demands from education (Özgüngör and Duru, 2014). There is a paradigm shift from **behaviorism** to **cognitivism** and (social) constructivism (Köseoğlu and Tümay, 2013). **Globalization** increases the insistence of students to

improve the knowledge and skills they need for accomplishment. Connecting our world-wide ecosystem, economy, and political connections require students to learn to work and solve problems with people world-wide. “The employers considered that 21st Century Skills are essentials for accomplishing workplace such as creativity and innovation, collaboration, global and local connections, communication, self-direction, critical thinking, and using technology as learning tools” (Wilcox, Liu, Thall, & Howley, 2017).

Many universities use various teaching methods to develop these skills in their students to meet these career needs. The capacity to collaborate with other people is an essential skill of the 21st century and a necessary condition for optimal learning. Teachers can design education in many ways, enhancing students' skills to work in teams. Students can discuss subjects in **pairs** or bigger **teams** and share their understanding with the other students. Collaborative learning is to assume the essential responsibilities of working together. Therefore, collaborative learning requires shifting learning responsibility from teachers and students. Collaborative learning is to enable students to create information together. **Working together** to achieve a common goal, they build knowledge through their **interactions** with each other. In other words, it can be said that collaborative learning environments are advantageous in terms of students' success, **interpersonal relations**, and the development of **social competence**. This lecture focuses on the importance and necessity, elements, and process of collaboration.

THEORETICAL BACKGROUND

The fundamentals of collaborative learning framework are based on the **Piaget's** and **Vygotsky's theories**. For example, Piaget, a cognitive constructivist, sees **cognitive development** as **balance**, **imbalance**, and a new balance process. The individual must be active in this process. In the **socio-constructivist approach**, Vygotsky pointed out that a **cognitive imbalance** is essential in evoking improvement. Social connections enable such mental shortcomings to the degree that students cooperate with their peers at higher developmental stages. Because of that, group heterogeneity is significant, as

group members are anticipated to have various information, various representation patterns, and different cognitive devices.

Vygotsky highlighted the significance that **social interaction** causes individual **cognitive transformation**. As social interaction is adopted, the participants' conceptual changes can occur as new appropriate **understandings** (Köseoğlu and Tümay, 2013). Like Piaget, Vygotsky emphasizes the importance of heterogeneous **cooperation groups**. According to Vygotsky, the proximal development zone defines the distance between what individuals can achieve by themselves and what they can achieve with the assistance of more skilled "others." While the Piagetian perspective often maps kids at various developmental stages to assist cognitive imbalance, the Vygotskian view usually matches kids with grownups. Social constructivism perceives the environment as a fundamental part of collaborative mental actions. According to this approach, information is not something transferred from one partner to another.

On the contrary, information is gathered through interactions between group members. This approach highlights that the **whole group performance** is beyond the addition of its fragments. In addition to that, based on group members' input, group interactions change in ways that are not essentially expectable.

What is Collaboration?

The concept of collaboration was first used in the context of the **human relations in the industry** trend that developed at the end of the "Hawthorne Studies" led by Elton Mayo in the 1930s (Bolat, 1996). „Collaboration means working with people or departments that are thought to positively impact the outcome of performing a task or achieving the final goal“ (Bardakoğlu & Akgündüz, 2016). As cited in Downe, Finlayson, and Fleming (2010, p. 251), "the word collaboration can be traced back to the Latin verb collaborate, which is a combination of 'with' (co) and 'work' (labour)". This shows that „collaboration is a dynamic and active process for doing and achieving something between people“ (Downe et al., 2010).

Gray (1991) suggests that the collaboration aims to create a richer and more comprehensive estimation of the problem among **stakeholders** rather than

structuring the problem by any group members alone (Gray, 1991). Similarly, Chrislip and Larson (1994) state that collaboration aims to form a shared vision and standard techniques to deal with concerns that extend beyond any specific member. When the literature is analyzed, it is seen that many definitions are made for collaboration, but there is no standard definition agreed upon (Wood & Gray, 1991). Some authors conceptualize collaboration as a relationship (Bushe, 2006; Chrislip & Larson, 1994; Schwarz, 2006). For example, Schwarz (2006) defines „collaboration as a mutually beneficial relationship between two or more people, groups, or organizations that co-design and learn together and learn from each other to meet their relevant interests, such as sharing, responsibility, authority, and accountability to achieve results." According to Bushe (2006), „collaboration is a relationship where two or more people devote themselves to successfully carrying out a project or process together". While following the outcomes, they act on behaviors and assumptions which are consistent with their cooperation. The other group authors define collaboration **as a process** (Dietrich, Eskerod, Dalcher, & Sandhawalia, 2010; Thomson, Perry, & Miller, 2009). Dietrich et al. (2010) define „collaboration as a systematic process in which two or more individuals or organizations work together for a **common purpose**, **creating_knowledge**, **learning**, and **consensus**". Roschelle (1992) conceptualizes collaboration as an exercise to find common ground in the group or make an ordinary meaning. According to Roschelle (1992), the participants become to speak the same language through the creation, monitoring, and repair of shared information. Thomson et al. (2009) state that the conceptualization of collaboration in different ways adds richness to the literature. According to Thomson et al. (2009), the lack of consensus on the meaning of cooperation among researchers makes it difficult to compare the findings in studies and to know whether the measured thing is a collaboration. Although there is no consensus on the definition of collaboration in the literature, the existing definitions include certain elements such as common purpose, more than one person who came together to achieve this goal**, act together to achieve the goal**, a **willingness to take responsibility**, and a **repetitive process**. Briefly, there is a beneficial reciprocal relationship among different parties with common goals in collaboration

via sharing their **responsibility**, **authority**, and **accountability** to reach the goals (Chrislip & Larson, 1994).

The Elements of Collaboration

Martinez- Moyano (2006) described the collaboration as an operation in which knowledge, participation, outcomes, notions of trust and aggregation of activity repetitively interact with each other; and further explained that the way of improving collaboration is through paying attention to the ways of **handling information** in the process of **collaboration**, producing and understanding of the outcomes, and facilitating the sense of trust through **communication**.

According to Wood and Gray (1991), "collaboration occurs when a group of autonomous of a problem domain engage in an interactive process, using shared rules, norms, and structures, to act or decide on issues related to that domain" (p. 146). As can be understood from those definitions, it can be said that collaboration has a **complex** and **multidimensional structure**.

In the existing literature, the growing body of research has tried to identify the elements of collaboration. For example, based on their qualitative work with students enrolled in the undergraduate nursing program, Gagnon and Roberge (2012) offer eight aspects of cooperation: **cooperation**, **coordination**, **communication**, **responsibility/accountability**, **mutual trust and respect**, **autonomy**, **assertiveness**, and **psychosocial aspects**. Barratt (2004) suggests five collaboration elements as a **collaborative culture**, **trust**, **mutuality**, **information exchange**, **openness** and **communication**. Thomson et al. (2009) attempt to test the structural equational model of collaboration that is proposed in light of the findings of research on collaboration. They found that the five elements model of collaboration is valid. These elements are **governance**, **administration**, **autonomy**, **mutuality** and **norms**. Finally, based on the study by Hoegl and Gemuenden (2001), Dietrich et al., (2010) describe five elements of collaboration namely communication (refers to the adequate, clear and efficient exchange of information between collaborative actors), coordination (expresses a mutual understanding of the goals, necessary activities and contributions to be achieved by collaborative members),

mutual support (refers to the willingness of the co-actors to help each other in achieving the goals agreed upon), **aligned effort** (means that the contributions of the collaborating group members are in line with the expectations of the contribution), and cohesion (refers to the presence of a collaborative spirit among group members).

PRACTICAL EXAMPLE

The development of the collaboration skill requires developing sub-skills such as **coordination**, **communication**, **conflict resolution**, **decision making**, **problem-solving** and **negotiation** (See Picture 1). Effective teamwork needs to support the development of collaboration skills. However, it is not as easy to create a capable team. For an effective team, the culture of trust and respect in teams; communication skills; but especially **listening skills**, which is an essential sub-skill of communication skill; taking perspective and conflict resolution skills need to be developed.

Picture 1: The teamwork skills (2020, 15 August)
Source: https://www.thebalancecareers.com/list-of-teamwork-skills-2063773

TASK FOR STUDENTS

Discuss the advantages of teamwork with your group by identifying two situations that require cooperation and collaboration.

CONCLUSION

Since collaboration has a complex and multidimensional structure, although it does not have a standard definition, we can say that collaboration means working together to achieve the specified goal. Collaborative learning, based on the work of Piaget and Vygotsky, is not new in the educational area. The studies in education mention the positive effects of collaborative learning on students, such as developing **critical thinking**, **metacognition**, and **motivation towards learning** (Lai, 2011). However, the increasing complexity of technology and jobs has forced many business areas or different departments in a job, and other disciplines in the academic community to work together, so collaboration has become an essential skill in the business world and education.

In sum, collaboration is an essential skill in the business world of the 21st century. For improving and encouraging collaboration skills, the **goal** and **expectations** related to teamwork should be clearly defined; the group members' uniqueness must be acknowledged; **trust** and **respect** should be built and maintained among group members, and positive communication should be established.

FEEDBACK QUESTIONS

1. *How can you describe collaboration?*
2. *Have you ever worked in a collaboration team? If yes, would you evaluate the teamwork with its negative and positive aspects? If no, and as a member of a team, what would you expect from a team?*
3. *What are the elements of collaboration?*

THE PROCESS OF BEING A CAPABLE TEAM

INTRODUCTION

It can be said that collaborative work is an increasing trend in today's education and competitive business world. Institutions are looking for solutions to their cooperation problems, and employees and students want to be part of a team. On the other hand, although collaboration is often chosen because it is a **more comfortable** and **more efficient way**, it is not easy to create a capable team. One should be careful about some points to get the desired efficiency from collaborative studies. For example, group members must trust and respect each other and understand each other's perspectives. It is also essential that they manage conflicts that may arise in the group from time to time and solve problems within a collective mind's framework. For an effective team, the culture of trust and respect in teams; communication skills; but especially listening skills, which is an essential sub-skill of communication skill; taking perspective and conflict resolution skills need to be developed. Therefore, how does an effective collaborative team form, and how does it work during the lesson? We will focus on the questions and try to find answers to them. Second, we will discuss the topics below concerning the process of being a **capable team**.

THEORETICAL BACKGROUND

1. Trust and respect as the basis of being a team

Collaborative learning requires **teamwork**. "In the process of collaboration, team members should **trust** and **respect** each other" (Nelson, Hegtvedt, Haardörfer, and Hayward, 2019). The strengths and weaknesses of each group member are different from other group members. In cases that require teamwork, each team member participates in the process with this potential. If the team members do not make efforts depending on the team's purpose, the team will not be able to achieve its goal. On the other hand, depending on the team's purpose, each member will make different contributions to the process because each member has various personal resources in achieving the goal.

Therefore, group members must trust and respect each other in the process of team building. If there is no trust and respect, it will be challenging to achieve the goal. Therefore, during the lesson, we will focus on creating sincerity, trust, and respect in the grouping process.

Trust is among the indispensable elements of an effective work team because the sense of trust also brings the **feeling of being safe**. In this context, when people in your work team feel safe and respect each other with their colleagues, they can easily open themselves to others, take the necessary risks, and tolerate each other's weak points. A sense of trust is also an extremely important condition for sharing information. More specifically, as your team members start to trust each other, **interpersonal information flow** and **open communication skills** will become stronger.

What can you do to create an atmosphere of trust in-group/teamwork?

Respect differences: Our differences are not a threat to group/teamwork, but a wealth. If the group respects differences, they bring their unique experiences to the group work without hesitation. It is also the foundation of building trust in this group.

Creating a mutual trust environment: Group/team members should trust each other and show this clearly. This means you need to trust your team, colleagues, and boss. Team members can only open themselves if they feel safe and feel like part of the team.

Open communication: Establishing an open dialogue between the group/team members contributes positively to **group dynamics**. Where there is open communication, misunderstandings, conflicts, and problems decrease, and trust increases.

Enabling team members to get to know each other: One way to create an atmosphere of trust within the team is to allow the team members to get to know

their colleagues **more personally**. Hence, it is essential to develop suitable environments to tell personal stories and establish personal connections.

Not being accusatory: When people work together, making some mistakes and disappointments is always possible. This often means that it is easy to accuse someone of doing so. But in an environment where everyone starts to blame each other, unrest will also arise. This will have an **impact on the motivation of the team**, the **atmosphere of trust** within the team, and ultimately ±. With this, it is vital for each team member to look at the errors with a **constructive perspective**, to be more flexible, and to use a **positive language**.

Preventing groupings: Groupings damage the trust environment in the team. In the case of gatherings, team members should create an open discussion environment on this issue and be allowed to express what they think about their potential impact on other team members. Just being able to speak honestly about the subject can help reduce the team's chances of grouping.

Picture 2: Trust and respect as the basis of being a team (2020, 15 August)
Source: https://www.thebalancecareers.com/how-to-build-trust-on-your-team-3575707

2. Listening skills requirement in collaboration

Listening is an essential communication tool. We communicate 80% of our time. We spend 45% of our waking time listening to others. Listening does not only include a **hearing**. Listening also includes **attention** and **thinking**. We hear voices while listening, but we consider them consciously. "Effective listening is an active process and includes receiving, remembering, understanding, evaluating, and responding" (DeVito, 2019). Listening skills allow us to learn about others' experiences, understand our teammates, and build trust between others. Collaborative learning requires teamwork, and team members need to improve their listening skills to understand and work together. Therefore, during the lesson, we will first discuss how to improve our effective listening skills, and secondly, we will explore essential **strategies to enhance team collaboration**.

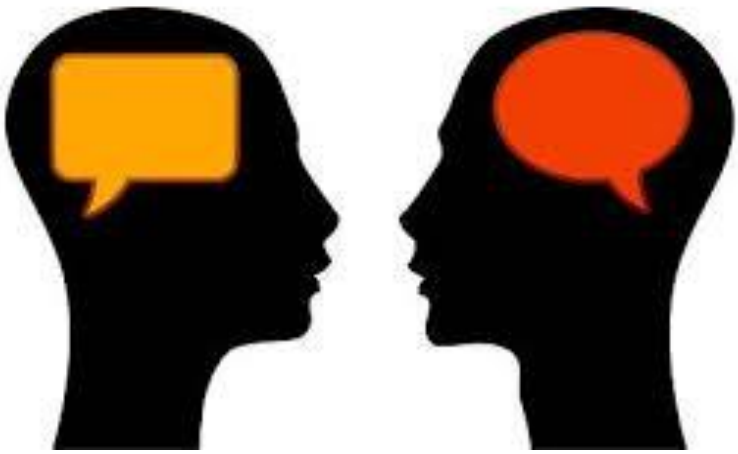
It can be said that practical communication skills play a vital role in both private and public life. Efficient communication skills help build and maintain relationships, resolve conflicts in negotiations, and understand people with a different mentality. Since listening is an essential part of **verbal communication**, taking listening skills seriously, and learning as a particular skill is necessary. Contrary to popular belief, being a good listener is not that easy as there are too many active listening difficulties. Active listening skills are not only abilities but also process-based skills. We can conceptualize this process as follows. This process can be formulated as **focusing**, **understanding**, **evaluating** and **responding appropriately**.

FOCUSING: The first stage of active listening is to **pay attention** to the other's **emotions**, **thoughts**, **behavior**, **language pattern**, **body language** and focus on the person speaking as a whole.

UNDERSTANDING: Understanding is **giving meaning to the message** being heard to be achieved as close as possible to the message intended by a person who is speaking.

EVALUATING: Evaluation is the processing of the message received, interpreted and understood for **decision making**. The individual brings together a lot of data and creates a **judgment** about what is heard.

RESPONDING APPROPRIATELY: The correct response is to check whether the listener understands what is intended to be told by another person and react adequately to another person.



Picture 3: Listening skills as the basis for understanding others (2020, 22 August)
Source: https://www.bilgiustam.com/etkin-dinleme-nedir/

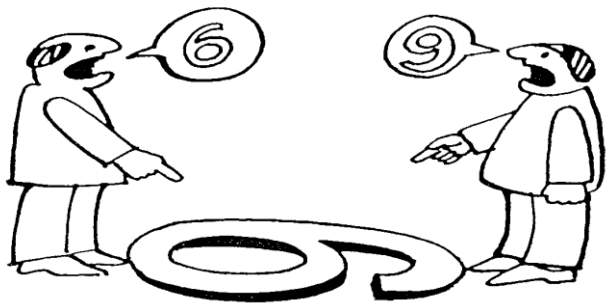
3. Perspective-taking of others in collaboration

Perspective-taking is an individual's putting himself in the other's place, understanding his thoughts and point of view, and reacting accordingly. Human is a social entity, and we are often in a group, whether in family or business life. Sometimes we may encounter situations or processes that require teamwork. In such cases, we may need the ability to perspective-taking. Understanding how the group members think and react will prevent the group members from **misunderstanding** each other and contributing to the group to act faster for its purpose. Perspective-taking is a skill that can be learned and taught and can make group work more effective. Therefore, during the lesson, we will learn how to improve our skills to perspective-taking in individual-group relationships.

According to Davis (1983; 1994), empathy has four sub-dimensions: **perspective-taking**, **empathic interest**, **fantasy** and **personal distress**. "As a cognitive

component of an empathy, **the perspective-taking** is a process of putting oneself in another person's shoes, understanding other person's thoughts and perspective, and reacting accordingly" (Duru, 2002). In other words, perspective-taking is a three-stage process-based skill. In the first stage, the person replaces him/herself the place of the other person. Secondly, he/she understands his/her thought, perception, and perspective, and finally reacts appropriately to another person without mixing his/her viewpoint with the process. People with empathic tendencies give more help to the person they perceive in need. Similarly, people with high motivation to help people in need tend to take the other's perspective more frequently in showing interest in the other's lives (Oswald, 1996). In summary, it can be said that cognitive components of **empathy**, such as perspective-taking, have a facilitating effect on the perception of the needs of the individuals in the team.

Please look at Figure 4. What do you think? Who do you think is right?



Picture 4: Perspective-taking skills (2020, 18 June)
Source: https://www.dmy.info/empati-nedir/

4. Conflict resolution skills as the basis of compromise

Conflict is in life and is a natural result of our differences. We use some coping strategies, consciously or unconsciously, while experiencing conflict. We apply these strategies as appropriate depending on the type of conflict, with whom it is experienced, its severity, and its possible consequences. There may also be conflicts in groups created by gathering more than one person due to differences in **perceptions**, **beliefs**, **values**, **thoughts**, **interests**, **needs**, **expectations**, and **experiences**. In reality, conflict is inevitable in life. The important thing here is not

the lack of conflict, but how the group members manage this conflict when there is a conflict. The effective way to resolve a dispute is to find a way to satisfy both parties, and their needs are mutually satisfied. Gaining conflict resolution skills is learning to use a **win-win strategy** in a sense. Therefore, during the lesson, we will first discuss how to improve our conflict resolution skills in individual-group, group-group relationships, and second, we will learn essential conflict resolution strategies.

Conflicts and disagreements are inevitable as a natural result of differences in individual values, past lives, beliefs, and perceptions. Whether the outcome of the battle is positive or negative depends on how the conflict is managed. **Conflict**, **resentment**, **deterioration of relations** and a **decrease in work efficiency** result from **conflicts that are not well managed**.

Different people use different strategies in conflict management. These strategies, which are generally learned in childhood, appear to operate automatically. People are often unaware of how they behave in a conflict situation. According to Johnson (2006), there are two things people want to achieve or achieve in the event of a conflict. One of them is the individual's desire to make their own goals, which also causes **interpersonal conflict**. The other one is the importance given to the **relationship** with the person. It can be said that both requests fall into different points of a line ranging from "very important" to "not important at all". In other words, to what extent is the aim causing the conflict important for the individual? How meaningful is their relationship with the person with whom they are involved in the battle? Depending on these two factors, people can adopt different conflict resolution strategies. Five different conflict resolution strategies have been defined that people can refer to, depending on how much they care about their goals and relationships. These five different conflict resolution strategies are shown, each symbolized by an animal. You can see the details about the subject in Picture 5.

TURTLE (Avoidance)

The turtles retreat to avoid conflict. They stay away from conflict-creating problems and people. They believe that trying to resolve disputes is an empty effort. They feel

helpless. They think that it is easier (retracting) to be physically or psychologically withdrawn rather than facing conflict.

TEDDY BEAR (Accommodation)

The relationship is significant for the Teddy Bears, and the purpose is not so important. Teddy bears **want to be accepted and loved by others**. They think that people cannot argue without harming relationships, and that conflict should be avoided to avoid unpleasantness. They **give up their own goals** to maintain their relationship.

SHARK (Using force, competing)

Sharks force the person in conflict and try to use **force on the other person** to accept their solutions. Their goals are critical, and their relationships are not meaningful. They want to **achieve their goals at all costs**. They are not concerned with the needs of others. They see conflict as **one person winning**, **the other person losing**. Winning gives sharks a sense of accomplishment and self-love. Losing gives a sense of weakness, inadequacy, and failure.

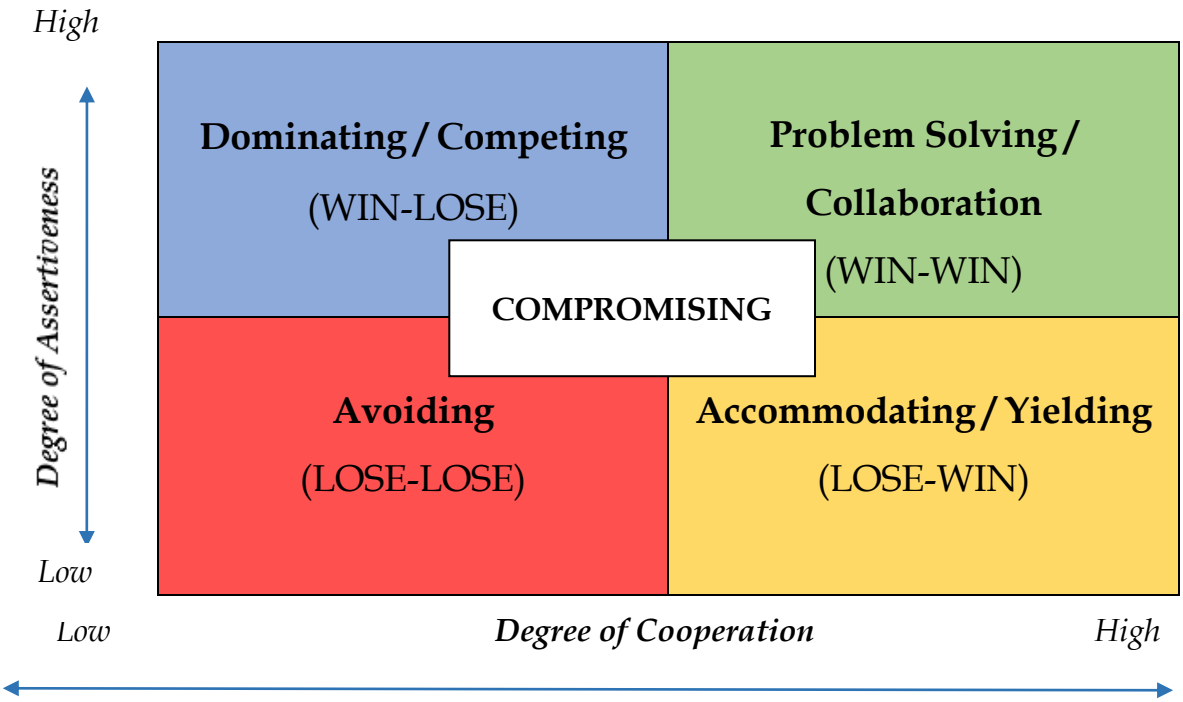
FOX (Compromise)

Foxes attach moderate importance to both their goals and their relationships. Foxes seek reconciliation. They give up some of their own goals and persuade the person they conflict with to give up their goals. They **look for a solution** where **both sides will gain something**. To find such a solution, they are willing to make some sacrifices for their purposes.

OWL (Collaboration)

Owls attach great importance to both their purpose and their relationship. They see conflicts as problems that need to be resolved and seek a solution that one and another person can achieve. They **see conflicts as a tool to improve relations** by reducing tensions between the parties. They continue the relationship by looking

for **solutions that will satisfy both parties**. Moreover, they are not satisfied unless tensions and negative feelings between the parties disappear.



Picture 5: The model of conflict resolution strategies (2020, 15 May)
Source: https://imgbin.com

5. Designing a road map for team members

Collaborative work is designed for complex tasks that cannot be performed by a person. Cooperative action is becoming the building blocks of corporate strategies day by day. This situation continues rapidly today. The building blocks of institutions are not only individuals but teams with different purposes. Ideally, we assume that the teams are established to realize any project work entirely in harmony with the goal. However, this is not the truth. It often takes time to build an effective team.

The team development process developed by Bruce Tuckman (1965) can be used as a roadmap to increase the team's effectiveness. Tuckman emphasized that groups must go through **five stages to work effectively**. They are **forming**, **storming**, **norming**, **performing** and **adjourning** (Riebe, Roepen, Santarelli, and Marchiora, 2010).

FORMING STAGE: This is the orientation phase in which the team members try to get to know each other and **create a trust relationship** in this first phase. In this phase, the facilitator should ensure that the team knows each other better, discuss the team's purpose, and clarify the expectations from each team member (Riebe et al., 2010).

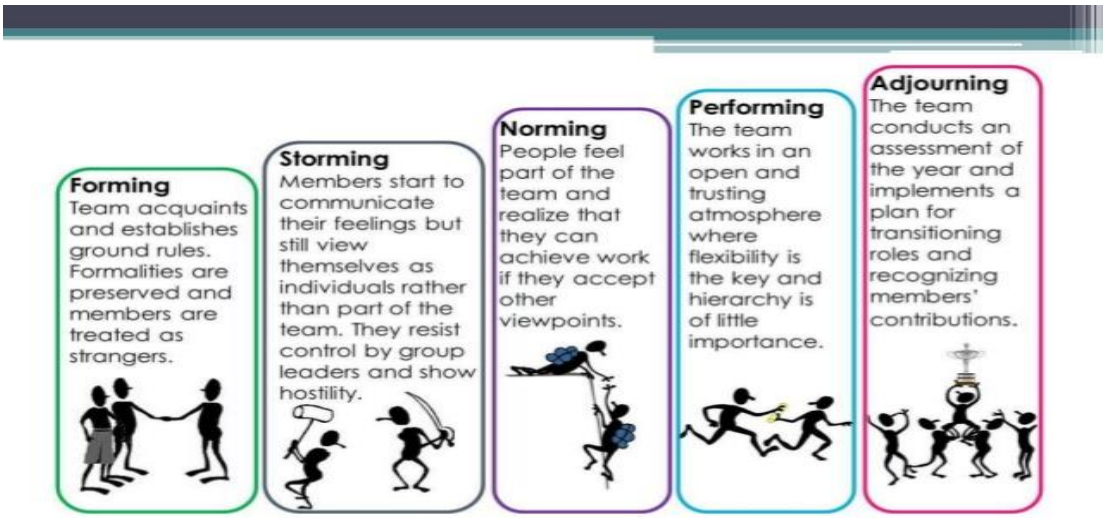
STORMING STAGE: In the second phase, team members question the **team's goal**, **tasks** and **interpersonal relationships**. Therefore, conflicts may occur. At this stage, the facilitator can enable team members to exchange ideas on team norms (work norms, meeting standards, and communication norms), **roles** and **responsibilities** for long-term teamwork. The facilitator can also carry out activities to increase the awareness of team members about conflict management (Riebe et al., 2010).

NORMING STAGE: At this stage, team members' own individual goals for teamwork evolve towards team goal, and team members' team skills such as **listening**, **clarifying and summarizing**, **time management** and **conflict-management** develop. At this stage, activities for the development of team skills can be organized, and team members can be promoted to evaluate team progress and give feedback to each other (Riebe et al., 2010).

PERFORMING STAGE: At this stage, team members show **positive interdependence**; they are well organized for teamwork; they **act as a team**. Here, the facilitator can withdraw and allow the team to take the entire initiative. Unless necessary, she/he does not interfere with the team and only observes the teamwork (Riebe et al., 2010).

ADJOURNING STAGE: This stage is when the **team evaluates each other**, and the project after the project is completed. Assessments at this stage should increase the awareness of team members about their potential and provide information on the

aspects they need to strengthen for teamwork, if necessary. The facilitator can provide peer assessment and process assessment tools (Riebe et al., 2010).



Picture 6: Tuckman's stages of group development (2020, 05 June)
Source: http://ns4business.com.br/2018/10/

PRACTICAL EXAMPLE

This activity will contribute to each student's understanding of becoming part of a team and developing collaboration skills.

Materials: A case study

"You are the chairman of the board of a company that exports home textiles. You filled your warehouses with raw materials that will continue your production for about two years. While making production planning, the "Pandemic" has started, and you want to turn this global crisis into an opportunity. You are trying to understand with your Board of Directors whether your machines are suitable for producing masks and whether you can create a new production band. On the other hand, you have six months of orders that you have planned and have to raise. You do not want to make wrong decisions, and you need to listen to different perspectives. You want to create a team of experts from inside and outside the company to make more rational decisions. But you are not sure whether this team can work effectively. The task expected from the team members is not to perform the tasks assigned to him, to organize the time, and to fulfil his responsibilities. To

create a common goal expected from the team, share their experiences, listen to the other, manage possible conflicts, compromise in the rational decision-making process, and feel like a meaningful and valuable part of the team. You are trying to understand how you can manage the team's approach to be a capable team and work collaboratively."

Directions

1. Create a group of five or six students.
2. Create a strategy for the team to get to know each other and trust each other.
3. Discuss with all members what it means to be a team.
4. Allow each member of the team to listen to each other.
5. Share what it is to understand a member's perspective with the whole team.
6. Develop the principles of how to manage conflicts between team members.
7. Build awareness of how a problem can be solved cooperatively within the team.

TASK FOR STUDENTS

What knowledge and skills are essential in being a team? Why? How to create a strategic roadmap for the team? Discuss with your group members and write a 1000-word essay.

CONCLUSION

The development of this skill requires the development of sub-skills, such as **coordination**, **communication**, **conflict resolution**, **decision making**, **problem-solving** and **negotiation**. Effective teamwork needs to support the development of collaboration skills. However, it is not as easy to create a capable team. For an effective team, the culture of trust and respect in teams; communication skills; but especially **listening skills**, which is an essential **sub-skill of communication skill**; taking perspective and conflict resolution skills need to be developed.

In addition to these skills, team members need to develop additional skills such as **goal setting**, **planning**, **self-regulation**, **note-taking**, **making decisions** and **leadership** for effective teamwork. The team meetings are very suitable areas for the development of these skills. To support the development of these skills, team meetings should be planned around a purpose. The basic rules should be established, and the meeting should be evaluated to support team members and teamwork.

Ideally, we assume that the teams established to realize any project work in perfect harmony with the purpose. However, this is not the truth. It often takes time to build an effective team. The team development process developed by Bruce Tuckman can be used as a roadmap to increase the effectiveness of the group. Tuckman emphasized that teams must go through **five stages to work effectively**. These are **forming**, **storming**, **norming**, **performing** and **adjourning** (Riebe et al., 2010).

FEEDBACK QUESTIONS

Please answer the following questions considering the case study:

1. *Where did you start first? Why? Please explain your rationale or justification.*
2. *Who would the team consist of, what would be their expertise, characteristics? Explain, along with its rationale or justification.*
3. *How would you make each member of the team to be a part of the team? What would be the communication and information flow between the members? What would be your opportunities or risks in this process, how did you manage the process of becoming a team, and what did you do and how? Explain, along with the rationale or justification.*
4. *How would the team decide the purpose, roles, duties, limits, and responsibilities, and why? Please explain the rationale or justification.*
5. *How would you decide if you could manage the process effectively, how would you evaluate it, and what would your criteria be, why? Explain along with the rationale or justification.*

COLLABORATION IN THE DIGITAL ERA

INTRODUCTION

Developments in the information society and information technologies have made it necessary to be effective in new emerging environments in application areas. Technology has undoubtedly affected the practice and, thus, the work on reaching the continuous demands and expectations of the institutions' target audiences, persuading them, informing them, and responding to them. Developments in information and communication technologies require the training of qualified personnel who can actively use these technologies. In the internet world we live in, it has become necessary to use digital platforms in teamwork and cooperation. This lecture focuses on the importance and necessity, elements and process of collaboration.

THEORETICAL BACKGROUND

Technological revolution and developments (such as changing social structure and globalization) in the digital age have caused some transformations in almost every field. Although the digital age developments offer the opportunity to work independently, **strong networks** and collaboration have brought to the fore for corporate or organizational success. In this age, collaborating with **experts from different disciplines** or **cultures** has become increasingly important. Therefore, it is almost inevitable to develop this understanding and create environments suitable for collaboration in the digital world.

Because of the change in technology, “what” we do, and “how” we do things is more important than “where” we are. However, in the digital age, profound changes have also been inevitable in the functioning of teamwork. Nowadays, participating in the partnership or collaborating with someone no longer requires a physical presence. Because the development of **virtual environments** can connect individuals to space and time, allowing real-time communication and collaboration worldwide. Indeed, while the digital age has eliminated the concept of time and

space, it has brought to the fore a complete human-system interaction. "Primarily, micro-technological developments have eliminated the necessity of working, depending on a location. With the help of telecommunication networks, it offers the opportunity to work from anywhere thanks to Internet technology and digital technology" (Saray, 2019).

Briefly, the collaboration aims to create channels of communication that enable many people to work together to achieve a common goal. With the digital age, profound changes have also been inevitable in the functioning of teamwork. For example, working with **distance**, **multicultural teams**, **new technologies** and **standard applications** have become an essential tool for collaboration. Klitmøller and Lauring (2013) state that the effective use of the digital age's virtual communication and interaction is central to the success of teamwork. In this digital age, collaboration can be achieved in many ways, including networks, applications, and telecommunications. Standard methods used to improve the cooperation in the digital workspace are **e-mail**, **meetings** (e.g., nTask, Eztalks, Teamviewer, etc.), instant messaging (e.g., Skype), **document sharing solutions** (e.g., Dropbox, Google Drive, Microsoft OneDrive, Hightail, etc.), enterprise **social networking** (e.g., Clarizen, Slack, Igloo, Yammer, etc.), and **team workspaces** (e.g., Bluescape, HeySpace, Microsoft Teams, Slack, Zoho Projectsetc.).

PRACTICAL EXAMPLE

The collaboration aims to create channels of communication that enable many people to work together to achieve a common goal. In this digital age, collaboration is achieved in many ways, including **networks**, **e-mail**, **meeting**, **document sharing**, **cloud applications** and **interactive communication**. These are some of the standard methods used to develop collaboration in a digital workspace.

Let's present one case study - COVID-19 is a virus originated in China and it is spreading rapidly worldwide, causing deaths. One way to avoid spreading this epidemic is a development of a new vaccine. In many countries, some scientists started studies on this subject together. The World Health Organization thinks that

working together rather than scientists' independent work can solve the problem in a shorter time. The only disadvantage of this proposed solution is the obstacle with travelling, e. g. cancellation of flights for now.

Picture 7: Collaboration in the digital era (2020, 10 June)
Source: https://www.turizmgunlugu.com/2018/02/28/turizmciler-dijital-pazarlamayi-tartisiyor/

TASK FOR STUDENTS

Create a presentation on 21st century collaboration skills by using a digital software program.

CONCLUSION

The **increasing complexity of technology** and **jobs** has forced many business areas or different departments in a job, and other disciplines in the academic community to **work together**, so collaboration has become an essential skill in the business world as well as in education. Also, the digital workspace has facilitated the collaboration of different institutions in the global world and eliminated the concept of time and space in cooperation. This also increased the importance of collaboration skills.

FEEDBACK QUESTIONS

1. *Could scientists live in different parts of the world working on a vaccine development work together? How?*
2. *What are the solutions to bring these scientists who have vaccine development studies together?*
3. *How can scientists notify each other of their work for COVID-19?*
4. *How can they share information among themselves?*
5. *How can they meet to make joint decisions?*

IMPROVING AND ENCOURAGING COLLABORATION SKILLS

INTRODUCTION

Collaboration gets together people with various backgrounds, experiences, knowledge, and skills to achieve shared goals. It has several advantages of managing large tasks, finding **creative ideas**, **combining abilities**, etc. A successful collaborative environment is a place where everyone in the atmosphere has a voice on equal terms, and where their **talents** and **skills** can contribute to the project. Providing collaboration into team culture depends on developing team members' collaboration skills. Better collaboration skills make teamwork more efficient and lead a profitable and valuable outcome. On the other hand, poor collaboration can cause destructive results like a waste of energy, resources, and time. Hence unqualified collaboration can be worse than no collaboration at all.

THEORETICAL BACKGROUND

Literature proposed that collaboration is an indispensable development (Morse, 2000). Several scholars suggested that there are several way to foster collaboration skills (Ertmer, & Glazewski, 2015; Goddard, Goddard, & Tschannen-Moran, 2007; Gratton, & Erickson, 2007). The

following can be considered as in a common list for improving and encouraging collaboration skills:

Defining purpose clearly and expectation related to teamwork

Even though different scholars suggest different lists, all lists should involve putting a clear goal. Describing a strong shared purpose as clear as possible should be the first step of any collaborative work. In this way, the team understands what they are aiming toward and it is possible for keeping track of whether they are on their correct path or not during their work.

The other crucial keystone of effective collaborative work is confirming each team member recognizes what is anticipated from them. Each team member needs to **understand** that they belong to a **unified group** and not distinct from the purpose of the team so that they need to adjust their activities parallel with the purpose of the group. It is obvious that if there are any unambiguity and hesitation concerning roles an effective collaboration cannot occur. Another thing is roles should be assigned fairly and reasonably. Each group member needs to understand the **role** and **responsibilities of others**. They need to know what each role description entails. Unclear role definition hinders team members to take on responsibility when they need to. Members need to know how and why one member's role is different from others so that they will be able to work together well. This provides thrust and reliability. Otherwise, uneasiness can be seen.

Acknowledging the uniqueness of group members

Once the purpose and role definitions were set, assigning group members to the tasks should be done decently. Although collaboration is simply means working together it does not mean all team members are the same and do the same task. Acknowledging the fact that no two individuals are the same and **respecting individuality** is very crucial. Each team member has **unique expertise**, **characteristics**, **experience**, **skills** and **point of view** which can bring diversity and **different valuable perspectives**. Highlighting each person’s assets in assigning roles means **recognition of their strength** by team members. This validation

encourages them to take a responsibility, to motivate them to invest their distinctive assets for the team. (Gratton, & Erickson, 2007).

Building and maintaining trust between group members

Trust is a fundamental component of any kind of group work that is difficult to build, but easy to fail. Effective collaboration entails establish and share information trustfully which helps well resource management. Organizing **ice breakers**, trust, confidence, **team-building activities** help team members to begin build trust. A coherent and trustworthy team encourage members to share an **honest feeling**, **creative and constructive ideas** and **feedback**. This will help to strengthen team bonds, to create a sense of shared responsibility and to give people the confidence to speak up.

Establishing positive communication

Collaboration is almost impossible without another 21st century skill which is **open** and **respectful communication**. Communication is the amalgam which tie the team members. Especially in this digital era establishing continuous communication in anytime anywhere become important. It is helpful to solve any conflicts and share enthusiasm within the group.

PRACTICAL EXAMPLE

Environmentally Friendly Agriculture

In this example, students study in groups on an environmental issue: environmental friendly agriculture. They are expecting to show collaborative effort in the role of a government authority from the ministry of agriculture, a farmer, an environmental engineer, a representative from industry and local communities, and scientists etc. This example can be transformed to the other environmental issues such as ignorant consumption, pollution, environmental friendly industry, environmental friendly house cleaning/ industrial cleaning and so on.

Expectations: The students will be able to search the environmental problem grounded on careless agriculture, analyze the effects of inconsiderate agriculture on life with different perspective, prepare a report on problems of caused by agriculture and suggestions for environmental friendly agriculture.

Related collaboration skills: to give personal opinion in a supportive manner, to take turns, to assist others for achieving goal of the group, to handle disagreement thoughtfully, to share and negotiate information, and suggestions, to be an active listener on thoughts, feelings, concerns of others, to check for agreement, to gain commitment to shared goals, to allow others' helps, ability, involvement, to check for common understanding.

Procedure

- Explain the purpose the activity to the students.
- Ask the students what they know about environmental issues caused inconsiderate agriculture and lead a brainstorming on their responses.
- While brainstorming as a whole group on these environmental problems make a concept map or a list with students' responses on the board.
- Divide students groups of 5 or 6. According to class size number of group members may change.
- Assign each student the role of a government authority from the ministry of agriculture, a farmer, an environmental engineer, a representative from industry, a representative from local communities, or scientists. According to class size of groups you may omit one of the role or duplicate some of them. The roles can be assigned by the teacher or the teacher may let the students negotiate about which role each of them take.
- Inform students they are responsible for preparing a report on environmental friendly farming and presenting the report to the whole group.
- Remind students that they need to cover each issues aroused in whole class brainstorming at the beginning of the lesson.

- During the preparation all government authority leave their groups and get together as a government authority group, similarly farmers from all groups gather as farmers group and so on. Therefore the students with the same role get together.
- Explain students that each different role group need to research and study the issue for their perspective. At this phase students with the role of the representative from industry are encouraged to visit related local industries, farmers group may pay a visit to local farm, the engineer group may visit local engineer chamber etc. If visiting is not possible they can call and get direct information from related sources or search from internet related to the perspective of their role. At this stage students are encouraged to take notes, bring photos, documents or other resources.
- When all role groups finish their search, they split and each student move back to the original group which involves all different roles.
- In their original group each student should display the perspective of their role and share the other group members what they got in the previous stage. Then as a group they prepare a report and presentation.
- A final report will be completed for evaluation. Related to report encourage students to find alternative solutions to issues whether reasonable or marginal.
- Finally, ask students to evaluate the other groups' presentations verbally and give them feedback.

TASK FOR STUDENTS

Investigate the environmental problem based on careless agriculture, analyse the effects of unconscious agriculture from a different perspective, prepare reports on the problems caused by agriculture and suggest proposals for environmentally friendly agriculture.

CONCLUSION

Put it in a nutshell developing and fostering collaboration skills is so important to be successful in the end. Although one can suggest many different ways related to each team member and the whole group, we can make a concise list. The following bullet points can be considered as a concise list for fostering collaboration skills:

- **defining purpose clearly** and expectation related to teamwork,
- acknowledging the **uniqueness of group members**,
- establishing a **positive communication**.

FEEDBACK QUESTIONS

1. *Can you suggest more strategies for encouraging collaboration in your subject area?*
2. *Which other 21st century skills is helpful in fostering collaboration?*

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Critical Thinking

Lucilla Crosta – Valentina Banda

MOTTO: „Time given to thought is the greatest time saver of all."
Norman Cousins

DEFINITIONS, THEORIES AND MODELS OF CRITICAL THINKING

LEARNING OBJECTIVES

After completing this lesson, the learners will:

- know and understand definitions, theories, models and skills of critical thinking,
- be able to take an active role in discussions,
- be able to apply critical thinking face to face or in virtual teams.

INTRODUCTION

Critical thinking has been widely defined by authors such as Jonh Dewey (2010), Moon (2008) and Ennis (2011). These definitions refer to "critical thinking such as a reasonable reflective thinking focused on deciding what to believe or to do" (Ennis, 2011) or more generally speaking to the ability to **analyze facts**, **generate and organize ideas**, **defend opinions**, **make comparisons**, **evaluate arguments**, without passively accepting what is read, but learning to **rise question** on information. The module will explore some key definitions of critical thinking and will discuss theories, models and skills about it.

Picture 1: Illustrative graphic of critical thinking
Source: Pixabay

Students will be asked to read the resources provided and to actively discuss the topics of the module in a big group discussion either online or face to face. Different views and perspectives will be shared together using a critical thinking approach. The idea is to deliver the module fully online if it is necessary to deliver it face-to-face it would be adapted accordingly. The video here below provides an introduction to the definition of critical thinking. You can watch this video in order to start being introduced to the topic.

Picture 2: Print screen of video on introduction to the module
Source: University of Leeds, https://www.youtube.com/watch?v=josRsaUPAEU

THEORETICAL BACKGROUND

Dewey (1933) for example (In Hitchcock, 2020) analysed critical thinking as consisting in **five phases** namely: **suggestions**, in which there is some thinking into a possible solution; the **identification of a problem** to be solved, a question for which the answer must be sought; the **use of an hypothesis**, to guide observation; the **reasoning** as the mental elaboration of the idea and finally the **testing of the hypothesis**.

Ennis (2011) identified **fifteen critical thinking abilities** composed by other relevant sub-abilities that characterize altogether a **critical thinker**. Ten of them are:

1. Focus on a question.
2. Analyse arguments.
3. Ask questions/clarifications or challenge the questions.

4. Judge the credibility of a source.
5. Observe and judge observation reports.
6. Deduce and judge deduction.
7. Make generalisations and hypotheses.
8. Make and judge values of judgements.
9. Define terms and judge definitions.
10. Follow problem solving steps.

Finally Siegel (2010) states not only how critical thinking requires specific skills and dispositions but also how the "ability to reason well and the disposition to be guided by reasons is a central importance" (p. 142) in relation to critical thinking. **"Central"** in his view is the **"Reason Assessment Component"** since any critical thinking thought needs to be supported by an explanation of why the reasons provided are good ones, what kind of criteria have been used for defining them as such, what is their nature, why they have been chosen and so on. In addition Siegel state that what is necessary is also a good disposition in being a critical thinker, what he calls **"The critical spirit"** (p. 143).

PRACTICAL EXAMPLE

Critical thinking theories and models can be discussed in the team and reviewed together with **pros and cons**. Examples of critical thinking skills can be also provided and discussed together.

Critical thinking is the ability to think **clearly** and **rationally**. A person who is a good critical thinker can:

- evaluate information in a systematic way,
- understand the logical connections between ideas,
- identify inconsistencies in others' thinking,
- effectively solve problems and make informed decisions,
- separate what is important and what is irrelevant information,
- construct strong evidence-based arguments,

- view situations from different perspectives,
- ask hard questions to challenge observations and assumptions.

Critical thinkers typically engage own self-reflection and independent thinking. They manage an insight to the problem from another perspective – they are able to think **"outside the box"**. Critical thinkers closely examine their beliefs, assumptions, ideas, and arguments in order to identify misconceptions and gaps in their reasoning. They are able to refine their thought processes over time, and they are very skilled at **synthesizing information**.

Many people are under the false impression that if a person can hold a lot of facts or knowledge in his/her brain and retrieves information from his/her memory more effectively than others, that he/she is a good critical thinker. This idea is not correct. Critical thinkers can sort out what is credible and true from what is not credible and not true. They are able to:

- interpret what information really means,
- analyze ideas and arguments,
- reach accurate conclusions based on evidence,
- assess whether people got the facts right.

TASK FOR STUDENTS

Students will be asked to surf on Edulai library:

https://dev.moodle.b52.cloud/login/index.php

After that, they will post answers on course on LMS Moodle:

- *What is the definition of critical thinking you would like to embrace? Why? Please highlight pros and cons of this definition*
- *What do you think about critical thinking theory/theories why?*
- *What do you think about critical thinking skills?*

CONCLUSION

The module will be a starting point for introducing students the topic of critical thinking while practicing some critical thinking

approaches in the discussion. They will practise some critical thinking skills while reflecting on themselves. They may understand that there are not always right or wrong answers but different views and perspectives together with pros and cons as real possibilities.

FEEDBACK QUESTIONS

1. What are the stages for critical thinking development?

2. What are the key theories/models of critical thinking?

3. What are the key skills of a critical thinker?

STRATEGIES TECHNIQUES AND TOOLS TO ENHANCE CRITICAL THINKING

LEARNING OBJECTIVES

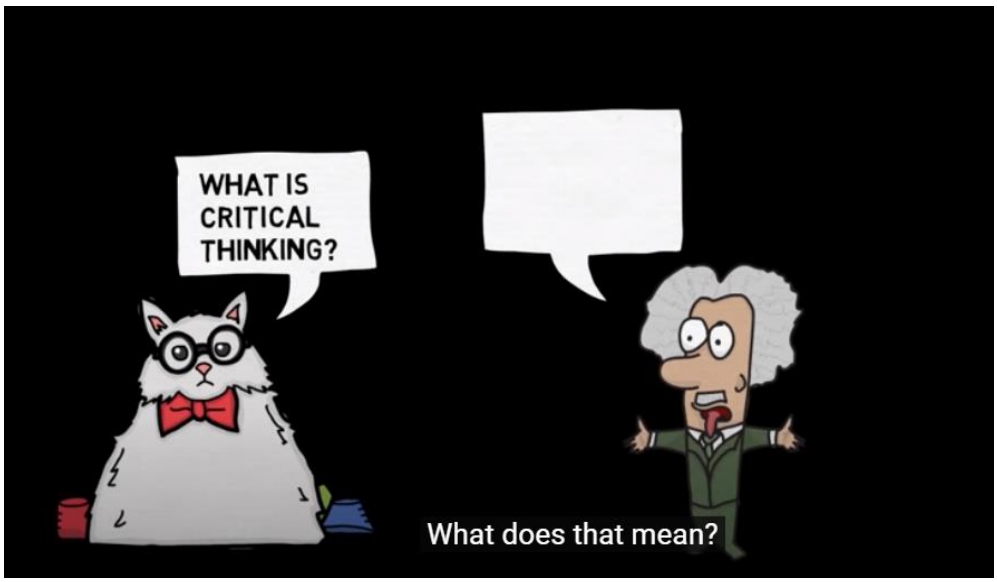
After completing this lesson, the learners will:

- acquire techniques that can be used for enhancing critical thinking,
- become more aware of their critical thinking skills thanks to practicing them through specific techniques and tools.

INTRODUCTION

Critical thinking skills are not always so well framed and clarified among university students. Mastering these skills is very important not only for the academic life but also for professional life where critical thinking skills are highly valued among employers in the Europe and all over the world. In this lesson, the students will acquire several self-assessment tools and take part in group discussions in order to identify own critical skills and argumentations. In order to achieve this, some critical thinking strategies and tools may be used during the learning intervention. For instance, Edulai software tools

may be used for assessing students' critical thinking skills through their free piece of writing. **Edulai assessment tool** can be accessed here: https://dev.moodle.b52.cloud/login/index.php. The idea is to deliver the module fully online, if it is necessary to deliver it face-to-face it will be adapted accordingly. The video provided here gives an introduction to **critical thinking skills.** You can watch this video in order to start being introduced to the topic.



Picture 3: Print screen of the video of the Edulai assessment tool
Source: G. Pynn, https://www.youtube.com/watch?v=Cum3k-Wglfw

THEORETICAL BACKGROUND

The profesionals in carerr counselling constantly focus on setting a variety of critical thinking models, strategies and ways to develop critical thinking skills of candidates for different job possitions.

The **IDEAS technique** (Facione, 2020, p. 27) is just an example of some critical thinking strategy that will be presented and discussed during the module. The IDEAS approach **Critical Thinking General Problem Solving Process** consists of five steps: **IDENTIFY** (I) the problem, **DETERMINE** (D) relevant information, **ENUMERATE** (E) options and consider consequences, **ASSESS** (A) the situation and make some decisions, **SCRUTINIZE** (S) the process and self-correct.

Another example can be the set of **five critical thinking components** namely: **analysing**, **evaluating**, **reasoning**, **problem solving** and **decision making** (GE

Foundation Work Skill Program). These five components are closely linked together into a loop when we start analysing the items of a situation, then we can move into the **evaluation stage** where we assess them. As a consequence, we follow up with some reasoning and then we make some proposals for solving the problem/situation. Once the decision is made and the problem is solved, we start again with the first element of the cycle, creating an infinite loop.

This process is very useful especially in workplace environment where companies need quick, precise and careful solutions and decisions to everyday issues and problems.

In the workplace graduates will be expected to engage in critical thinking on a daily basis. Employees will have to analyze, evaluate, reason, solve problems, and make decisions. While these abilities are connected, they are also distinct and involve specific behaviors.

Picture 4: Critical Thinking Skills Model
Source: GE Foundation WorkSkill Program (n.d).

Analysis means having the ability to take something apart and examine the essential or constituent parts, and the relationships between the parts. For example, when you take your car in for a service check, the mechanic systematically does an

analysis to determine the problem that needs to be fixed. They are masters at taking things apart and putting them back together.

Evaluating is making an assessment or judgment based on criteria, a set of standards, data, or information. For example, when you go to the doctor, he or she completes a number of vital signs tests, looks at data and your records, and arrives at a judgment about the status of your health.

Reasoning is your ability to form a coherent and logical argument, and to be able to use reasons to justify your argument. It is the process of using your mind to consider something carefully and to be able to demonstrate that it is either true or false. The main function of reasoning is to be able to devise and evaluate arguments intended to persuade others. For example, lawyers use reasoning in the courtroom to convince a jury that the defendant is either guilty or innocent.

Problem solving is the ability to understand the root causes of an issue or situation, consider alternative solutions, and arrive at a decision about which solution is best to address the problem. For example, a sales team is brought together because sales have dropped 25% in the last quarter. They need to work through a systematic problem solving process in order to find a solution.

Decision-making is the ability to identify and choose a course of action from alternatives, based on values and preferences. For example, when a young couple is buying their first house, they usually start with determining the amount of money they have to spend. Then, they need to consider location, size, and amenities. Typically, they end up having to decide between House A and House B.

PRACTICAL EXAMPLE

Students can experience different critical thinking tools and strategies. Students can share their experience in a case study and later explain to the wider group how useful a specific strategy, technique or tool for enhancing critical thinking was (GE Foundation WorkSkill Program). See a Critical Thinking Skills Assessment Sheet for an example:

Table 1: Critical Thinking Skills Assessment Sheet

	Critical thinkers are able to:	Low					High
1	Evaluate information in a systematic way	1	2	3	4	5	6
2	Identify inconsistencies in others' thinking	1	2	3	4	5	6
3	Understand the logical connections between ideas	1	2	3	4	5	6
4	Effectively solve problems and make informed decisions	1	2	3	4	5	6
5	Separate what is important and what is irrelevant information	1	2	3	4	5	6
6	Construct strong evidence-based arguments	1	2	3	4	5	6
7	View situations from different perspectives	1	2	3	4	5	6
8	Ask hard questions to challenge observations and assumptions	1	2	3	4	5	6
9	Interpret what information really means	1	2	3	4	5	6
10	Analyze ideas and argument	1	2	3	4	5	6
11	Reach conclusions based on evidence	1	2	3	4	5	6
12	Assess whether people got the facts right	1	2	3	4	5	6
13	Identify misconceptions and gaps in their own reasoning	1	2	3	4	5	6

Source: GE Foundation WorkSkill Program (n.d)

TASK FOR STUDENTS

Students will have to read the provided and selected readings for the module. They will be asked in first instance to carry out an individual activity such as a self-assessment of their level of critical thinking skills. Students will be asked to fill in the "Critical Thinking Skills Assessment" sheet as part of the module activity/discussion. Only after that they will be exposed to the information about skills needed by a good critical thinker and then they can start a conversation in the big group with other peers. In the group they will be exposed to different critical thinking techniques and tools to use in the discussion individually and then they will comment/reflect on them altogether. A final self-reflection of the overall process will be compiled by each student individually and shared with the

tutor. The activities will be carried out either face-to-face or online depending on the context / situation.

CONCLUSION

Becoming aware of our own critical thinking skills is not an easy and immediate process at all, but rather a developmental one. Hence having started reflecting on them is just the beginning. Regularly exercise them through the techniques and tools discussed in the module will help students introducing them into their daily life both for becoming a better student and a better professional in the future workplace.

FEEDBACK QUESTIONS

1. *How useful was the technique/tool used in the group for enhancing your critical thinking skills? Why?*
2. *What worked well and what did not work well? Why?*
3. *What would you do in a different way next time?*

DIFFERENT TYPES OF ARGUMENTATIONS, PRE-CONCEPTIONS AND STRENGTHS OF ARGUMENTATIONS

LEARNING OBJECTIVES

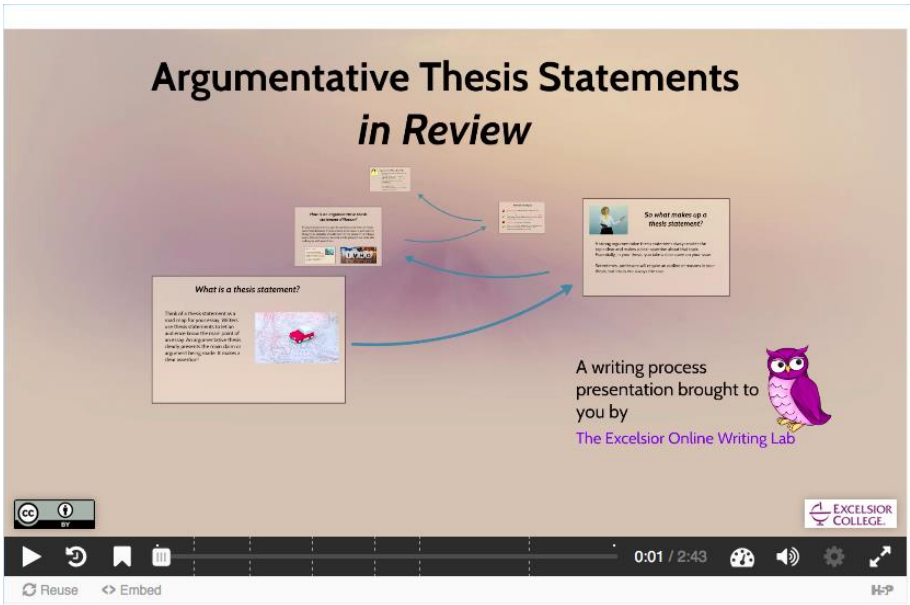
After completing this lesson, the learners will:

- know how to use different types of argumentations techniques,
- understand connections of different types of critical thinking with argumentations, pre-conceptions and strengths and practices,
- be able to recognize pre-conceptions in critical thinking in practice,

- be able to build argumentations and apply argumentation techniques while interacting within the team.

INTRODUCTION

There are several ways to approach critical thinking concepts, for example **problem solving method**. However, this module will introduce students **argumentation** techniques, pre-conceptions and components which typical for critical thinking. Methods for evaluating an argument and proofs in order to support argumentations will be also discussed. So in the module again **theories on argumentations** will be linked with practice related both to the academic and professional context. The following video provides an introduction to argumentation in relation to academic environment.



Picture 5: Print screen of the video on Argumentative Thesis Statements in Review
Source: Excelsior College, https://owl.excelsior.edu

THEORETICAL BACKGROUND

Theories on argumentation are provided in the selected readings of the module. Topics such as what is an argument**, identifying an argument**, **differences** between an argument and explanations, **validity** of an argument, **evaluating arguments**, **negations**, **contradictions** and **proofs**, **fallacies**, **argumentation proof** (Cleave, 2016 and Cohen & Salas, 2002) will be discussed in the module and shared with the team. In addition, different steps of

argumentations will be presented and used in practice in the module by participants.

For example, Cleave (2016) defines an argument such as "An argument is a set of statements, some of which (the premises) attempt to provide a reason for thinking that some other statement (the conclusion) is true. Although arguments are typically given in order to convince or persuade someone of the conclusion, the argument itself is independent of one's attempt to use it to convince or persuade" (p. 3).

Indeed, there are several different ways to interpret the meaning of **argument** which is different at the same time from the meaning of **explanation**. They later occur when we use an argument in order to show why the statement of a conclusion is **true** in our view (Clave, 2016).

Another aspect that will be touched in the module is the topic of **validity of an argument**. An argument can be considered as valid if its premises support the conclusion, and it is something that every argument should aim for. An argument is valid when its conclusion cannot possibly be false, assuming that the premises are true. So basically: "A valid argument declares that if the premises are true, the conclusion must be true" (Clave, 2016).

On the other side "Negation comes into play when it switches the truth value of a proposition from false to true or from true to false while adding a negation (i. e. not)" (Clave, 2016).

There are more examples of critical thinking concepts and approaches that can be used while discussing critically around a topic. Knowing what these concepts and approaches will contribute to better dealing with them both in the daily professional and academic practice.

PRACTICAL EXAMPLE

Participants will be introduced to the argumentation steps/process, to its pre-conceptions and proofs. This will help them to carry out individual exercises in order to identify argumentation steps and potential pre-conceptions/fallacies in critical thinking. A professional case study

will be presented to the team and discussed together afterwards. In addition, they will be asked to fill in individually the **Social Assumption Exercise and Quiz** that will be discussed afterwards in the team.

Case study and Fishbowl: The Nova Company

- Nova is a car assembly plant that has been operating in South Carolina for the past five years. Currently, the company is experiencing many pressures. The company has invested considerable funds to build the plant, but within the past year Nova is having trouble finding skilled workers, and production is not moving forward as anticipated.
- Costs are increasing and profits are getting down at Nova's South Carolina plant, and this is creating concerns from the boardroom to the plant floor. Everyone seems to know the plant is struggling.
- There is a history of conflicts between the union and the company. There have been threats of strikes over the past two years, but management and the union have managed to reach a solution on the issues at the 11th hour.
- The company is restructuring at the management level in New York City and this is creating uncertainty about the plant's future.
- Nova is an international company with plants in Canada, the US, and Europe. The new CEO was told to cut costs, and get profits up, or there will be layoffs and plant closures.
- This pressure has created tensions between the frontline supervisors and the workers. Frontline supervisors are pushing the workers because they have been directed to work harder and faster.

The general manager of the plant has called together a set of workers to solve the problem about how to increase workplace morale and increase productivity (GE Foundation Work Skill Program).

Social Assumptions Quiz

1. Social Assumptions: List of Alternative Explanations One or two possible explanations are given for each fact. Can you think of any other probable explanations?

FACT 1: Alternative Explanations: Center city families spend less money on toys, books, and lessons than suburban families. Center city schools have fewer facilities and materials than suburban schools.

FACT 2: Alternative explanations: Drivers spend more time driving near their homes than on more distant roads. The laws of probability may in part explain the number of accidents.

FACT 3: Alternative explanations: City conditions such as noise, over-crowding, and competition cause the higher suicide rate. Pace and quality of life in rural areas are calmer than in the city.

FACT 4: Alternative explanations: Women have historically been discriminated against in the workforce where men have traditionally dominated. Because women are often discouraged from pursuing careers outside the home, they are forced to depend on men in the workforce.

FACT 5: Alternative explanations: Men are often pressured to be "strong," that any lack of strength is a failure. Thus, because men who show their emotions are made fun of, they hide emotions to appear more masculine, and more successful in their gender roles.

2. Read each fact, stereotype, and alternative explanation. Decide where these stereotypes may have originated. Do you think the alternative explanations are reasonable and appropriate? Can you think of any more explanations?

FACT 1: Up to 40% of all people released from prison commit other crimes and are re-imprisoned within five years of their release. Stereotype: This is because criminals would rather break the law and have a chance to stay in prison term than keep a job.

Alternative explanations: A person in prison is seldom taught skills necessary for becoming a responsible member of society. In fact, prison may have taught that person how to become a better criminal.

FACT 2: Many men are poor housekeepers. This is because men do not have the ability to cook, clean, or do the laundry.

Alternative explanations: Household skills take time to learn and men (and boys) spend their time learning other skills.

FACT 3: The highest number of deaths caused by heart attacks occurs in America. Americans eat a lot of foods containing cholesterol. We can conclude that cholesterol causes heart attacks.

Alternative explanations: There may be a relationship between heart attacks and diet, but the diet alone usually does not cause heart attacks without interacting factors such as a lack of exercise or strain on the heart due to excessive activity.

TASK FOR STUDENTS

Students will carry out/read individually first the professional case study – Case Study and Fishbowl and to discuss it in the main team. Secondly, they will carry out the Social Assumptions Quiz (firstly, individually and later sharing the results in the big team).

CONCLUSION

Argumentation is the basis of critical thinking. Becoming a good critical thinker means being able to apply basic argumentation **rules** and **strategies** into practice both in academic environment but also in a professional life. In addition, being able to identify pre-conceptions for reasoning and providing their proofs are also important steps for improving argumentation skills. Acquiring these skills requires long time exercising and practising.

FEEDBACK QUESTIONS

1. *Were you able to identify your bias, misconceptions and false believes that prevent you to critical thinking around an issue? Why?*
2. *Please give several examples of types of argumentations techniques.*
3. *Do you know any problem solving method?*

FALSE CRITICAL THINKING AND COGNITIVE BIAS

LEARNING OBJECTIVES

After completing this lessons, the learners will:

- be able to identify bias and fallacies inside a critical thinking process,
- understand the connections of the critical thinking with **bias** and **fallacies** (false critical thinking).

INTRODUCTION

This interesting module will be based on discussing on what are the most common and diffused human cognitive biases that prevent us to properly develop our critical thinking skill. Participants will be asked to identify what their own cognitive bias might be and to discuss about them within the team. Hence once again the delivery of content in the class will be followed by more practical reflections and exercises. In order to introduce this lecture, you can watch the following video.

Picture 6: Print screen of the video "Logical Fallacies"
Source: GCFLearnFree.org, https://www.youtube.com/watch?v=4CtofTCXcYI

THEORETICAL BACKGROUND

In this module the most recent work from Friedman (2017) will be taken as starting point for understanding some of the **key cognitive bias** people have in their daily life reasoning. "Cognitive bias are defined as product of **normal human brain function** that we all share." These are features of **human psychology** that make us prone to errors in how we form beliefs and make decisions**.** The notion of an **"error"** is a strong one. We wouldn't call a cognitive bias a **"bias"** unless it often resulted in judgments that we can all recognize as **false** or **irrational** in some way. The whole concept of a cognitive bias is grounded in this idea that there is a gap between how we should reason and how our brains really thinks. In addition, the topic of logical fallacies or **false critical thinking** will be discussed. "Logical fallacies can be defined as any error in reasoning that makes an **invalid argument** and they are basically part of cognitive bias." The module will help clarifying these key concepts that affect our critical thinking process and will help students reflect on them.

PRACTICAL EXAMPLE

An important quality of critical thinkers is their willingness and ability to look at themselves. They constantly examine their own thinking. They challenge themselves to think in different ways and they try to look at old situations in new ways. These reflection exercises can consume your energy because you are uncovering your biases, misconceptions, false beliefs, and thinking distortions that are obstacles to you becoming a critical thinker.

Some handouts such as **"Critical Thinking Starting with Yourself"** are aimed at helping participants to reflect on situations when they are consuming their energies because of their misconceptions and bias. In the same way having "mental bias" prevent participants to make free and good decisions.

The handout **"Mental Trap Reflection"** will provide participants with a change to reflect on what mental traps are. Mental traps are bad habits in our thinking that we develop over the years. These ways of thinking block us from making good

decisions and often we are not even aware of their influences over us. Like any habit, we fall into these mental traps automatically. The way to change these habits is to intentionally bring them to our conscious awareness, acknowledge that we engage in these behavior patterns, and then work to form new habits. Some of these **mental traps** that **hurt critical thinking** are:

- We continue to work on projects that have lost their meaning or value for us.
- We work harder than necessary to achieve our goals, **wasting our energy and resources**.
- We remain fixated or stuck on a task when it is clear that we are **blocked from achieving our goals**.
- We know our plans have failed, the game is over, we have lost, yet we continue to dwell on the "what ifs" and continue to **replay the events.**
- We start working on something too soon and we end up **overworking**, or **working in vain**.
- We try to hold on to the old course of action and we resist **making** the **inevitable change**.
- We clearly decide to do something, but we procrastinate, or have get difficulty getting started and **getting down to business.**
- We try to attend to two things at once, and they both require **focus or conscious attention**.
- We are rushing or hurried, acting faster than we should, and we don't give the task the time and **attention that it needs**.
- We spend too much time thinking about topics that shouldn't **even occupy our minds**.
- We carelessly say or think something just because it seems to be true. (Kukal, A. (2006). Mental Traps. Toronto, ON: Random House).

TASK FOR STUDENTS

Think about your own life experience and identify two examples of times when you have fallen into one or more mental traps. Talk about ways to avoid these mental traps. What do you need to start and stop doing them? Please fill in table with some examples.

START DOING	*STOP DOING*

CONCLUSION

Personal cognitive bias and **critical thinking fallacies** are difficult to identify if we do not start working on reflecting on ourselves in the first instance. Becoming a good critical thinker means being able to identify them first and foremost on ourselves and afterwards on others and on the topics we discuss. This skill can be mastered with lots of exercises and it requires lots of time to invest in it.

FEEDBACK QUESTIONS

1. *Were you able to identify your bias, misconceptions and false believes that prevent you to critical thinking around an issue? Why?*
2. *Think about a time when you were in a debate or discussion with a friend, or family member and you realized your reasoning was off-track.*
3. *How did discussion in the team help you to identify them further?*

Answers on Edulai: https://dev.moodle.b52.cloud/login/index.php

USE OF CRITICAL THINKING IN ORDER TO IMPROVE ACADEMIC RESULTS

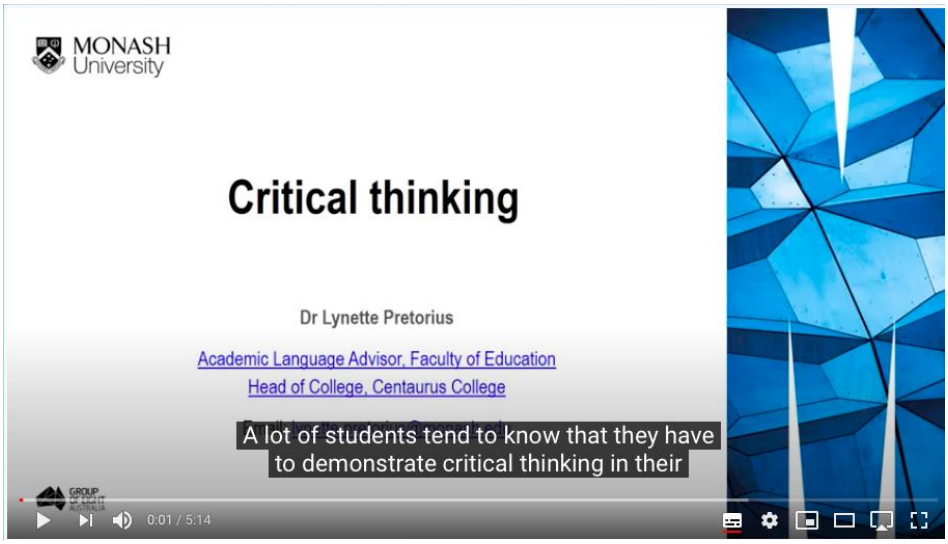
LEARNING OBJECTIVES

After completing this lessons, the learners will:

- be able to apply previous theories, knowledge, skills and understandings on critical thinking into practice,
- improve their academic performance and academic writing.

INTRODUCTION

Critical thinking becomes now, more than in the past a key Higher Education skill for both graduates and undergraduate students. The module will help students to develop and apply this skill into university environment in their daily learning class for example while discussing in teams and while writing **essays**. Indeed, the module will recall the topic of **argumentation** but applied in the **higher education** context and will guide the student towards the process of both think critically and **write critically in Academia**. You can watch this video in order to start being introduced to the topic.



Picture 7: Print screen of the video "Academic Language Advisor"
Source: Monash University, www.youtube.com/watch?v=w_dYbZTNui0

THEORETICAL BACKGROUND

The module will be mainly based on the topic or argumentation already discussed in the previous section. The remaining part of the training will be mainly practical since it will help student to apply into practice, especially into their academic writing, the theories and skills about critical thinking acquired in previous module.

PRACTICAL EXAMPLE

Students can get familiar with application "Claims and Arguments" samples, where they can access different types of argumentative and critical thinking writings. They can surf there and use them for building **their argumentative thesis** afterwards. This application is accessible here: https://www.mesacc.edu/~paoih30491/ArgumentSampleEssays.html

TASK FOR STUDENTS

Students will have to read the provided and selected readings for the module. They will be then asked to use the "Thesis Generator for Writing an Argumentative Thesis" tool in order to exercise their critical thinking and writing skills. They can try to generate as many Argumentative Theses as they wish at individual level and then they can share the theses with the wider group. They can also access the "Claims and Arguments" sample sites in order to see practical and additional examples of argumentation building. Students can then share their argumentative thesis in the team for discussion and feedback. In addition, Edulai software tool will be used for assessing students' critical thinking skills through students' free piece of writing. So student will be also asked to submit one or more piece of free text into Edulai in order to automatically assess their critical thinking skills level there. Edulai assessment tool can be accessed here: https://dev.moodle.b52.cloud/login/index.php

CONCLUSION

Critical thinking skills especially in **writing** have always been considered as key skills for graduate and undergraduate students at the university but also as very difficult skill to master and to understand in the professional life. Acquiring this skill in university environment will also help students to develop it in preparation of the workplace since employers give a great importance to it. Indeed, all of the interviewed entrepreneurs in a survey on this topic stated that this skill really makes a difference when hiring new candidates.

FEEDBACK QUESTIONS

1. What does argumentation mean?

2. What are its key components?

3. What are the key theories of argumentation?

APPLYING CRITICAL THINKING TO CONCRETE PROFESSIONAL PROBLEMS AND PRACTICAL CASES IN THE REAL WORLD

LEARNING OBJECTIVES

After completing this lessons, the learners will:

- understand the impact of critical thinking skills on the professional environment,
- will learn how to use critical thinking skills for solving professional cases,
- become more aware which soft skills the employers seeks for when hiring new candidates.

INTRODUCTION

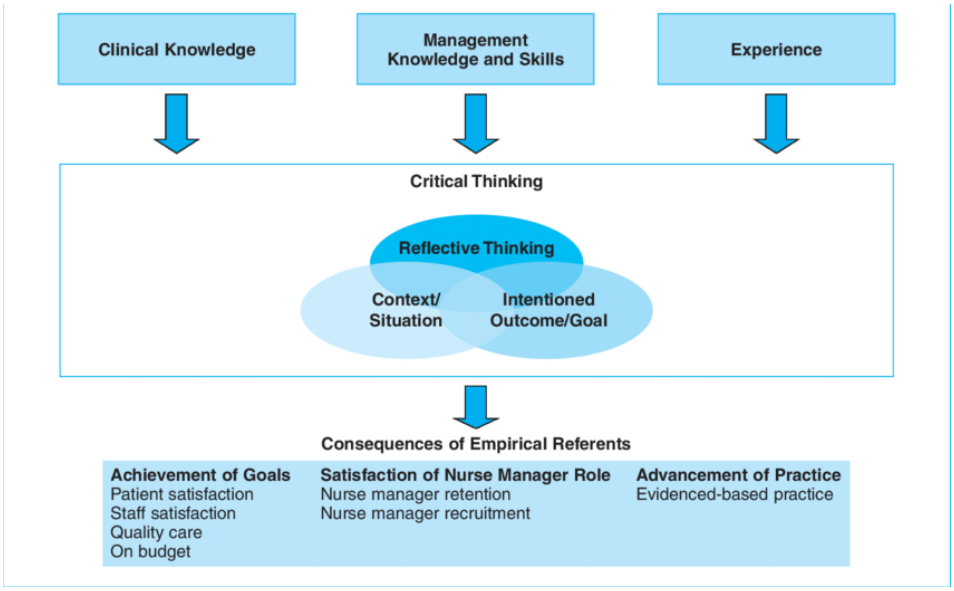
One of the key finding of the European market research on 21st century skills of the project CATCH 21, was that although critical thinking was considered by employers to be one of the key employability skills, it was hard to find it among young employees or graduates. With this module we would like to provide students examples and professional cases when critical thinking skills are required and ask them to solve the cases. This will help them train solving similar problems in the work-place environment where critical thinking skills are often linked to **problem solving**.

THEORETICAL BACKGROUND

The module will be mainly based on the topic of critical thinking skills in professional environment. The remaining part of the training will be mainly practical since it will help students to apply the theories and skills about critical thinking acquired in previous module into practice, especially in a professional context.

PRACTICAL EXAMPLE

Students can analyse the **"Critical thinking of nurse managers"** case and provide an individual solution to it in Picture 9.



Picture 8: Critical Thinking Concept Map for Nurse Managers Antecedents
Source: Barbara Morrison, Research Gate

The solutions will be then shared in the big group through informal discussion. Then the two possible scenarios/solutions from the case can be provided and discussed further in the big group.

TASK FOR STUDENTS

Students will have to read the provided and selected readings for the module. They will be asked to use the "Critical Thinking in Nurse Managers" case in order to exercise their critical thinking and problem solving skills inside a real professional case. Later, they will be asked to share their solution/s with the wider group for discussion. Once this is done, the two possible scenarios/solutions from the case will be provided and discussed further.

CONCLUSION

Critical thinking skill especially in **professional environment** has always been considered as key skill for students who approach the marketplace for the first time. Indeed, employers complain that young students often lack practical and critical thinking skills while entering the company for the first time. Acquiring these skills during daily life and professional practice will help fresh graduates to become more ready for **job market** and **more employable** in comparison with other peers.

FEEDBACK QUESTIONS

1. *What are the concrete key critical thinking skills which you gained from the module?*
2. *What critical thinking strategies, tools and approaches do you often use in your practice or teaching?*
3. *How are you going to use them for preparing your daily work at university and your future workplace?*

Students are asked to prepare an individual 5 minutes long video or written assignment which will contain answers to these questions.

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Self-Direction

Jiřina Sněhotová – Kamila Urban – Jiří Votava

MOTTO: „The goal of the educational process is to produce self-directed, lifelong learners."
Gerald Grow

LEARNING OBJECTIVES OF THE MODULE

After completing this module, the learners should/will:

- be able to construct a definition of self-directed and self-regulated learning, to explain their meaning and to gain the knowledge how to become a self-directed and/or self-regulated learner,
- understand the strategies to influence their achievements, and to escape negative feelings (f.e. shame, defeat, and depression),
- be able to describe self-directed and self-regulation techniques and skills,
- be able to describe proper strategies and approaches to implement self-regulated learning into higher education environment,
- get familiar with examples of teachers' approaches to initiate, facilitate and evaluate self-regulated learning,
- be able to list examples of evaluation tools and methods that could help both educators and learners to identify learning progress, to provide formative feedback and to allow future accommodations,
- become aware of the main directions of the development of higher education,
- be able to identify the most important and the most relevant study tasks at higher education and to link study tasks and teaching methods, especially regarding self-regulated learning.

SELF-DIRECTION AND DEVELOPMENT OF STUDENTS' SELF-DIRECTED LEARNING SKILLS

INTRODUCTION

The use of self-directed learning (hereinafter also SDL) as a **learning tool** is increasing in today's educational environment. SDL refers to two distinct but related dimensions: as an **instructional process** where a learner assumes primary **responsibility for the learning process**; and as a

personality characteristic addressing a learner's desire or preference for assuming responsibility for learning.

THEORETICAL BACKGROUND

The prevailing definition of self-direction is offered by Malcolm Knowles. In its broadest meaning, self-directed learning describes "a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes" (Knowles, 1975, p. 18). The research of the Canadian adult educator, Allen Tough, has made a significant contribution in this area when he published a study claiming that the majority of adult learning and change occurred **without relying** much on **professionals** or **institutions** (Tough, 1971).

The idea has found many supporters among educators however was viewed by some as a vaguely anarchistic and as a threat to the adult education establishment. Although the closely related term **autodidacticism** which could be translated as **self-teaching** has roots in the Ancient Greek. The idea is that students should be encouraged to do more **independent work**. Until the Industrial Revolution autodidactics stood more on the fringes of society, but the 20th century has brought people more opportunities to pursue advanced academic careers and drive their own learning. In the 21st century with the widespread use of the Internet and communication technologies, it is accepted or even required to be autonomous and self-directed in learning. Nowadays learning environments should consider **students' individual needs**, **goals**, and **interests**.

According to Brookfield (1985), the critical, rather than technical, interpretation of SDL has two essential characteristics:

- Self-direction is described as the continuous exercise by the learner of **authentic control** over all decisions having to do with learning, such as what should be the goals of a learning effort, what resources should be used, what

methods will work best for the learner and by what criteria the success of any learning effort should be judged – those decisions are said to rest in the learner's hands.

- Self-direction is considered as the **ability** to gain access to, and choose from, a full range of **available and appropriate resources**, the main questions are what a **learner considers essential for his/her development**, and how to get an **access** to available and **appropriate resources**.

According to many researchers the importance of SDL lies in its motivational component because it makes students more willing and motivated to learn. SDL decreases the probability that children will suffer from the life-long wounds commonly produced by coercive schooling and provides opportunities to pursue a far wider range of interests than is possible in a typical school with its pre-defined curriculum, fixed schedule, and inability to accommodate the needs and interests of individuals. Based on intrinsic motivation SDL promotes the natural development of self-confidence, initiative, perseverance and life satisfaction. Decades of research have confirmed that SDL must be explicitly taught and requires time for **depth of learning** and **reflection** (Skager, 1984; Westwood, 1997; Van Deur & Murray-Harvey, 2005).

Researchers Gureckis and Markant (2012) has further explained the cognitive and computational benefits of self-directed learning. On the cognitive side, SDL allows individuals to focus effort on useful information, which they do not possess yet, can expose information that is inaccessible via **passive observation**, and may enhance the **encoding** and **retention of materials**. On the computational side, the development of efficient **"active learning"** algorithms that can select their own training data is an emerging research topic in machine learning. This review argues that recent advances in these related fields can provide a framework for studying how people evaluate different sources of information and decide about the information they seek out and attend to. Work in machine learning can also help identify the benefits and weaknesses of independent exploration and the situations in which such exploration will confer the greatest benefit for learners.

Grow suggests a staged model of transition from a dependent to self-directed learner and "proposes a way teachers can be vigorously influential while empowering students towards greater autonomy" (Grow, 1991, p. 128). Key aspects of **Staged Self-Directed Learning Model** (hereinafter also SSDL) are based on the **Situational Leadership Model** of Hersey and Blanchard (1988). The SSDL model (see Table 1) is built on **strong belief in the value of self-direction** and provides a framework to aid good teaching practice by matching the teaching style to the learner's stage of self-direction. The appropriate teaching style can help the learner advance towards greater self-direction. The model raises awareness of differences between students – their ability, motivation, willingness, need for direction, or dependence. The ability to be self-directed is situational and progression can loop between stages (Grow, 91).

Table 1: The Staged Self-Directed Learning Model

	Learner	**Teacher**	**Examples**
Stage 1	Dependent	Authority, Coach	Coaching with immediate feedback. Drill. Informational lecture. Overcoming deficiencies and resistance.
Stage 2	Interested	Motivator, Guide	Inspiring lecture plus guided discussion. Goal-setting and learning strategies.
Stage 3	Involved	Facilitator	Discussion facilitated by teacher who participates as equal. Seminar. Group projects.
Stage 4	Self-Directed	Consultant, Delegator	Internship, dissertation, individual work or self-directed study group.

Source: Grow, 1991

When applying SSDL model teachers should consider several limitations:

- no clear method for reliably judging learner's stage of self-direction,
- mismatches between teacher style and learner stage can lead to difficulties,
- model is situational, thus flexibility is required,
- model presumes the ability of the teacher to adapt teaching style to suit the situation and learner,

- model is teacher-orientated, does not include learner's view (Grow, 1991).

Grow believes that "the goal of the educational process is to produce self-directed, lifelong learners" (Grow, 1991, p. 127).

PRACTICAL EXAMPLE

Self-directed learners can:

- diagnose their learning needs,
- formulate learning goals,
- monitor learning activities,
- complete learning independently (Saks & Leijen, 2014).

Self-directed learning skills involve the ability to manage learning tasks without having them directed by others. Those skills are necessary for **effective lifelong learning** and are one of many learning skills students are expected to develop in college. Skager (1984) identified **seven personal characteristics of self-directed learner** based on a survey of earlier work by a number of theorists and researchers (Berlyne, 1965; Biggs, 1973; Dave, 1975; March, 1972; Maslow, 1954; Joyce & Weil, 1972; Rogers, 1969; Wroczynski, 1974; Skager & Dave, 1977):

1. **Self-acceptance:** refers to positive views about the self as a learner and is grounded in extensive and successful prior experience.
2. **Planfulness:** such learners are able to diagnose their own learning needs, set appropriate personal goals based on those needs, and devise effective strategies for accomplishing the learning goals.
3. **Intrinsic Motivation:** such learners persist in learning activity in the absence of external controls in the form of rewards or sanctions.
4. **Internalized Evaluation:** such learners are able to act as their own evaluation agents, can give accurate estimates of the quality of their performance based on evidence they collect themselves.
5. **Openness to Experience:** such learners engage in new kinds of activities that may result in learning or goal setting. Curiosity, tolerance of ambiguity,

preference for complexity or playfulness represent motives for entering into new activities and imply openness to experience.

6. **Flexibility:** implies a willingness to change goals or learning mode and to use exploratory, trial-and-error approaches to problems. Failure is countered with adaptive behaviour rather than by withdrawal.
7. **Autonomy:** such learners choose to engage in types of learning that may not be seen as important or may even be perceived as dangerous within a particular cultural context.

Planfulness and Internalized Evaluation are very important elements of the concept of SDL because they describe an individual who is able to engage **self-evaluation**.

TASK FOR STUDENTS

Discuss in pairs at what stage(s) are you as a learner? What teaching style(s) do you prefer? Is there a match or mismatch? When and why?
In smaller groups, suggest how to develop SDL skills while learning. List specific activities and assessment outputs that can work well with SDL tasks.

CONCLUSION

Self-directed learning process promotes **student development** and **autonomy in learning**. By practicing and developing self-direction, students build **skills** and **habits** they can apply in life. This gives students a sense of empowerment that keeps them **motivated** and **engaged**. These skills are necessary for **effective lifelong learning** and are one of many learning skills students are expected to develop in college. The expectation is that students will become self-directed learners as they mature and gain content knowledge.

FEEDBACK QUESTIONS

1. *What possible effects self-directed learning has on the growth of a learner and the learning process?*
2. *What is the Staged Self-Directed Learning model? How can learners use it?*
3. *What self-directed learning skills do you recognize?*

THE ROLE OF EMOTION IN SELF-DIRECTED LEARNING

INTRODUCTION

Self-directed learning is recognised as a **key goal** of **higher education** however it is rare to find the emotional component of SDL discussed explicitly in the literature. Several recent brain researches confirmed the importance of emotion in all types of learning as well as in facilitating SDL. The affective side of learning is the **critical interplay** between how we **feel**, **act**, and **think**. Emotions have a strongly **judgmental character** and therefore give signals for how current learning and performance situations are experienced. "Emotions play a key role, as they influence learning through **cognitive resources**, **learning strategies**, and **motivation**" (Jensen, 1998; Pekrun, 2000; Rager, 2009).

THEORETICAL BACKGROUND

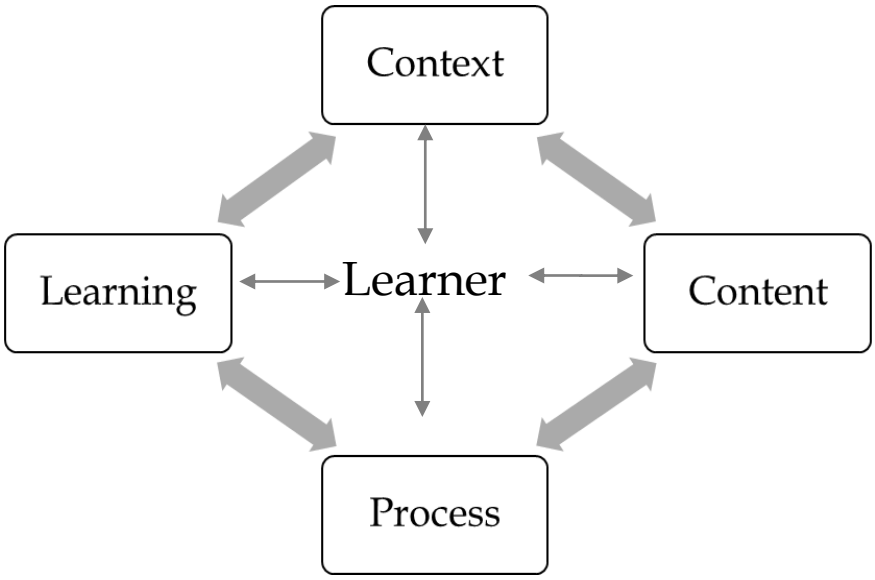
A widely used term **emotional intelligence** (hereinafter EI) was first mentioned by two scientists in 1989 - Peter Salovey and John D. Mayer, however the term was popularized by Daniel Goleman (1995). Goleman defined EI as the ability to be aware of and to handle one's emotions in varying situations. He claimed that EI includes **self-awareness**, **self-regulation**, **motivation**, **empathy**, and **social skill** and predicts important occupational criteria far beyond than those predicted by general intellectual ability.

Salovey and Mayer (in Salovey, Brackett, &Mayer, 2004) describes EI as an individuals' ability to **appraise**, **express** and **regulate emotions** in the self and others and to make use of these emotions for **problem solving**. EI is conceptualised as encompassing three major categories or dimensions of **emotional abilities**:

1. **the appraisal and expression of emotions in the self and others** (i.e. the ability to accurately perceive and express the emotions of the self and others, enabling socially adaptive behaviours),
2. **the regulation of emotions in the self and others** (i.e. the ability to control and modify the emotional states of the self and others, so as to meet particular goals),
3. **the utilisation of emotions in adaptive ways** (i.e. the ability to make use of one's own emotions for solving problems).

Rager (2009) presents an **interactive model of self-directed learning** that positions emotion (Picture 1). The model is presented by integrating information from diverse bodies of literature that contribute to understanding the link between learning and emotion. The resulting model provides a more comprehensive and practical tool for understanding self-directed learning. The essential premise of the model (see Picture 1) includes characteristics such **context**, **content**, **learning**, and **process**. Each characteristic carries an inherent emotional load that is mediated by the characteristics of the **individual learner**.

The **CONTEXT** component of the model represents the environment within which the self-directed learning experience takes place. The **CONTENT** component of the model represents the subject matter or topic of the self-directed learning experience. Subcategories of this dimension include the **complexity**, **urgency**, **criticality**, **novelty**, **availability**, and **general emotional character** of the topic to be investigated through self-directed learning.



Picture 1: An interactive model of self-directed learning
Source: Rager, 2009

The **LEARNING** component addresses the information processing that takes place within the brain of the learner. It acknowledges the role of emotion in the learning process emanating from neuroscience. As suggested by information from brain research, emotion is essential to learning. The **PROCESS** component of the model represents the self-directed learning process itself. It includes the **triggering event**, **diagnosing learning needs**, **formulating goals**, **identification** and **selection of resources**, **learning strategies**, **evaluation**, **decision making**, and **action** (as mentioned in earlier linear process models of self-directed learning by Knowles (1975) and Tough (1971) (Rager, 2009).

The analysis by McCombs and Whisler (1997) reveals the significance of two elements in driving autonomous or self-directed learning: (1) **self-regulation and control of affect**; and (2) **generation of positive affect and motivation**, which are both core components of EI. The study of Zhoc with colleagues (2018) focused on the effects of EI on SDL and how EI and SDL contribute to key learning outcomes in higher education, including grade point average, generic learning outcomes (including social, cognitive and self-growth outcomes) and students' satisfaction with their university experience. Results indicated that three key emotional abilities—emotional regulation of the self, appraisal of emotions in the self and emotional regulation of others —were positively associated with SDL.

In the process of achieving learning goals, **self-regulation of emotions** is very important so as to override different temptations and short-term attractions that may lead to distraction and procrastination in goal-directed behaviour. The ability to regulate negative emotions is therefore critical, to sustain study effort and persist in the face of setbacks in the course of pursuing goals. As to the appraisal of emotions in the self, it is an important process facilitating **self-reflection**, which in turn is critical for SDL. Given that emotions are signals providing information to an individual on what is valuable and meaningful, an individual who is well aware of their own emotions can make good use of this emotional information to guide thinking and action. Meanwhile, for the emotional regulation of others, self-directed learning is fostered by helpful interactions and relationships with other people, who can offer advice and insight that facilitate individuals to progress in the course of achieving the learning goals. This study provided empirical evidence that students who are more **emotionally intelligent** are **more self-directed**, leading to higher achievement in both academic and generic development, which in turn results in higher university satisfaction (Zhoc et al., 2018).

Schweder (2020) has studied association in self-directed learning during adolescence, which additionally promotes student's positive emotions. The study gets more in-depth information about motivation, emotions, and learning behaviour in self-directed vs. **teacher-directed learning** (hereinafter also TDL) settings. According to Saks and Leijen (2014) the main differences between SDL and TDL arise from the fact that the responsibility for learning alternates between the **instructor** and **learners**. Many studies refer that the dominance of TDL settings causes rapid loss of motivation in early adolescence and is often linked to weaker learning behaviour. A key finding of the Schweder (2020) study is that students in SDL settings perceive more positive emotions compared to students in TDL settings. The positive emotions mediate all relationships between mastery goal orientation and learning behaviour in students from SDL, whereas positive emotions only mediate the relations between mastery goal orientation and absorption in students from TDL.

PRACTICAL EXAMPLE

When transferred to **school practice**, this indicates that in SDL settings, experiencing positive emotions (1) supports the learning behaviour of students with lower mastery goal orientation, (2) but that even students with higher mastery goal orientation do not experience any disadvantages for their learning behaviour. This means that SDL (3) is especially relevant for heterogeneous learning groups so that students' learning is promoted regardless of their level of mastery goal orientation (Schweder, 2020).

TASK FOR STUDENTS

Reflect in pairs your recent strong positive and negative emotions while learning. What was the situation? What was your task? What did you do? Why did you feel the emotions? What was the result?

CONCLUSION

The depth of the relationship between **emotion** and **cognition** is often **underestimated** and **misunderstood**. It has already been shown that **positive emotions** are important psychological components that stimulate **motivation**, **meta-cognition**, and **cognition**, thereby positively influencing **learning behaviour**. Schweder's (2020) finding supports assumption that positive emotions mediate all relationships between mastery goal orientation and learning behaviour in students from self-directed learning.

FEEDBACK QUESTIONS

1. *How can you use the interactive model of self-directed learning as a learner?*
2. *Why emotions play important role in self-directed learning?*
3. *How do you control your emotions?*

SELF-REFLECTION AND METACOGNITION IN SELF-REGULATED LEARNING

INTRODUCTION

Self-directed learning (SDL) and **self-regulated learning** (SRL) are commonly understood as closely related or even **identical attitudes towards learning** (Pilling-Cormick & Garrison, 2007; Saks & Leijen, 2014), since the **main factors** influencing learning in both SDL and SRL are **self-efficacy** and **metacognition** (Pilling-Cormick & Garrison, 2007). Self-efficacy is a motivational component which influence the choice of learning activities and strategy use. It is a perceived value of the learning goal and beliefs of one's capabilities to achieve the goal (Pilling-Cormick & Garrison, 2007; Pintrich, 2000). Metacognition refers to one's knowledge and cognition about own cognition (Flavell, 1979).

THEORETICAL BACKGROUND

In SDL, **individuals** play an **active role** in which they determine their **learning priorities**. In SRL individuals **set goals**, **plan** their learning, **monitor** and **regulate** their cognition, motivation and behaviour and evaluate their learning outcomes in a **guided environment** (Pilling-Cormick, 2011). The main difference between SDL and SRL stands at the beginning. In SDL, **individuals take responsibility** and **determine own priorities**, they are free to generate their own learning goals. The emphasis is laid on the **external management of learning** (Pilling-Cormick & Garrison, 2007).

Metacognition, defined as **thinking about thinking** or **cognition about cognition**, has according to Flavell (1979) **two components - metacognitive knowledge** and **metacognitive experiences**. Metacognitive knowledge is a storage of believes about yourself and cognitive processes, tasks and strategies (Flavell, 1979).

TASK FOR STUDENTS

What do you think about your memory and text comprehension? Do you know the best strategy to remember explicit information from the text?

The second component of metacognition are **metacognitive experiences** which are **conscious cognitive or affective experiences** (Flavell, 1979, p. 906). Metacognitive experiences provide internal feedback about current progress, future expectations, degree of comprehension etc.

Metacognitive experiences activate **cognitive strategies** - if you are uncertain about your text comprehension, you may read it once again – and **metacognitive strategies**. In accordance with Flavell (1979), these metacognitive strategies consist of:

- **monitoring** of progress to accomplish the goal,
- **planning** how to begin or continue,
- **predicting** how much time do I need, how much can I remember or understand,
- **evaluating** how well I performed or what can I change to the future learning.

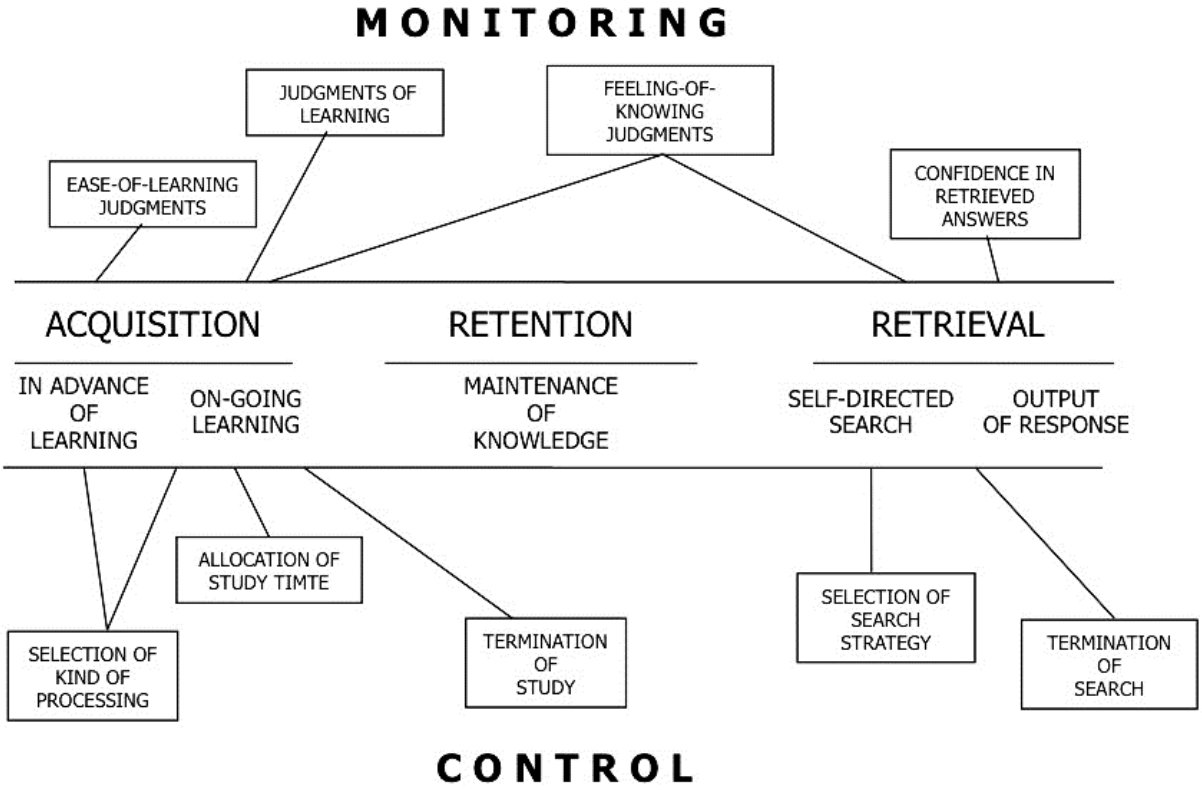
When learners manage use of different cognitive strategies, they adaptively regulate their learning. This ability is called **metacognitive regulation** (Winne, 1996). Metacognitive monitoring and regulation (also called control) are two processes allowing the flow of information between cognition (world, tasks), where cognitive strategies are selected, and meta level, where thinking about thinking, i.e. metacognition, takes place and metacognitive strategies are used (Nelson & Narens, 1990).

PRACTICAL EXAMPLE

Metacognitive regulation shapes behaviour, it can initiate, continue or stop an action. To do so, information from metacognitive monitoring is necessary (Nelson & Narens, 1990; Winne, 1996). How sure I am that I have understood the difference between monitoring and regulation? Question about monitoring. Do I need to reread the paragraph? Question about regulation.

TASK FOR STUDENTS

Metacognitive monitoring task – prediction - Think individually about the text you have just read. At the end, teacher will ask you 5 text-comprehension questions. How many do you think you will be able to answer correctly?



Picture 2: Main components of metacognitive monitoring and metacognitive regulation
Source: Nelson & Narens, 1990

The accurate metacognitive monitoring plays a vital role in SRL and SDL. Self-regulated learners are aware of own skills and knowledge and can accurately monitor the learning tasks, performance and comprehension (Zimmerman, 1990) and in the same time actively **regulate own performance** (Magno, 2009) as visualized on Picture 2. Self-regulated learning (SRL) is based on metacognitive monitoring and regulation of own learning influenced by factors of external environment. Metacognitive monitoring precedes and is necessary for self-regulating own learning (Winne, 2015). Effective self-directed learners also need

self-regulation and so accurately monitor own learning process (Saks & Leijen, 2014).

There are several models of SRL: Boekaerts', Efklides', Pintrich's, Winne and Hadwin's and Zimmerman's. In all of the models, SRL is a **cyclical process** composed of **different phases** (Panadero, 2017; Winne, 2015). Panadero (2017) in meta-analysis of different SRL models established these three phases of SRL as essential:

1. **Preparatory phase**, which includes task analysis, planning and goals setting.
2. **Performance phase**, in which the task is performed, and monitoring and regulation processes are operating.
3. **Appraisal phase**, which includes reflexion, evaluation and adaptation for future learning.

Preparatory phase includes motivational aspect. Motivation affects desire to **perform a learning activity**, **goals selection** and **strategy choice**. Prior learning, a student anticipates type of test or mastery that will be needed. **Metacognitive knowledge**, i.e. what learners know about own cognition, and ease-of-learning judgments, i.e. predictions about how easy or difficult it will be to learn, also influence goals selection, cognitive strategy choice and allocation of study time.

During **performance phase**, metacognitive experiences (affects, expectations, cognitive strategies) can change the learner's task performance, if monitoring judgments are not accurate. Monitoring judgments; feeling-of-knowing judgments, i.e. a feeling that learning material is known or will be remembered on a test, judgments of learning, i.e. predictions about future test performance and confidence judgments, i.e. postdictions about past learning or performance, influence termination of learning, seeking assistance or strategy changing, i.e. metacognitive regulation. Overconfidence in monitoring judgments leads to worse study performance because students do not sufficiently regulate their learning (Dunlosky & Rawson, 2012).

In **appraisal phase**, students self-evaluate (provide self-evaluation judgments) their work or learning. They also have to control their affective reactions and attributions therefore, this phase also includes emotion regulation. As seen, SRL includes the cognitive, metacognitive, behavioural, motivational, and emotional aspects of learning (Nelson & Narens, 1990; Panadero, 2017; Winne, 2015).

TASK FOR STUDENTS

Think (or talk) in pairs of your last learning process. What did you do in three phases of SRL? For better orientation, think about goals setting, strategies adoption, monitoring of own performance, strategy evaluation or learning regulation based on monitoring outcomes, self-evaluation and adaptation for future learning (see also Magno, 2009).

CONCLUSION

Self-regulated learning is a **cyclical process** containing of three phases: **preparatory**, **performance** and **appraisal**. Metacognition operates in each of those phases; metacognitive knowledge is important in preparatory phase in which learner selects the **learning goals** and **metacognitive processes** (monitoring and regulation) that are important for effective performing. Metacognitive processes can operate consciously or unconsciously, and they can be accurate or inaccurate (Flavell, 1979; Nelson & Narens, 1990).

FEEDBACK QUESTIONS

1. *Recall your prediction about how many questions will you be able to answer correctly.*
2. *Provide confidence judgments for each question on a scale from 1 to 10 how sure are you that your answer is correct. 1 means very unsure and 10 means very sure.*
3. *Provide self-evaluation judgment on how many of questions did you answer correctly.*
4. *Find correct answers in the text and provide yourself internal feedback.*

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
What is metacognition?										
Which two factors influence learning in both SDL and SRL?										
What is metacognitive knowledge?										
What are two metacognitive processes?										
What are metacognitive strategies?										

TEACHER EVALUATION IN THE PROCESS OF SELF-REGULATED LEARNING

INTRODUCTION

"Self-regulated students select and use self-regulated learning strategies to achieve desired academic outcomes on the basis of feedback about learning effectiveness and skill" (Zimmerman, 1990, p. 6-7). **Learning strategies** involve the use of cognition, metacognition, motivation, affect, and behaviour. Students can be taught to choose the learning strategies and to manage the learning effectively by providing them feedback.

THEORETICAL BACKGROUND

Learning strategies facilitate information processing and enable learners to succeed in learning. Learning strategies facilitate **encoding**, **storing** and **retrieving of information** (Johny, Lukose, & Magno, 2012; Weinstein, Acee, & Jung, 2011).

The use of learning strategies is developing from the primary schools and once are internalized, the student can use them in appropriate situations and change them if it is necessary. However, students struggle of choosing an effective strategy and often use an ineffective such as rereading and highlighting (Dunlosky et al., 2013; Johny, Lukose, & Magno, 2012).

There are three types of cognitive learning strategies: **rehearsal**, **elaboration**, and **organization**, which refer to information processing. Other learning strategies are **metacognitive learning strategies** (metacognitive knowledge and monitoring, planning, predicting, evaluating), **motivation strategies** (f.e. self-activation, maintenance of learning) and **approaches to self-regulation** (Weinstein, Acee, & Jung, 2011).

Not all **cognitive learning strategies** are effective or efficient for learning. **Passive rehearsal strategies**, which promote only repetition (f.e. repetition of a definition, listening over and over a lecturer or rereading) are not effective for meaningful learning. Highlighting material in a text, the keyword mnemonic, summarization and imagery use for text learning have also a low utility assessment because can be used only under limited condition (f.e. summarization and imagery use for text learning) or do not boost students' performance.

On the other hand, **active rehearsal learning strategies** involving more cognitive processes and meaning building are **more effective** for reaching learning goals. Active learning strategies are **practice testing**, **self-explanation** and **elaborative interrogation**. Elaboration learning strategies involve modifying the material to make it more memorable and to support comprehension (f.e. trying to apply the material for real life situations or teaching someone else). Organization strategies include finding the relations or work out the important information and reorganise them in order to memorize them more efficiently. Both **elaboration** and **organization strategies** require **greater cognitive effort** (Dignath, Buettner, & Langfeldt, 2008; Dunlosky et al., 2013; Weinstein, Acee, & Jung, 2011).

Strategy choice as well as self-regulation can be taught to students to **increase their achievement** and **motivation to learn**. To do so, teachers need to activate students' self-regulatory processes. SRL training containing planning and monitoring activities, learning strategies taught and teacher feedback were found to be beneficial for students (Dignath et al., 2008; Magno, 2009).

The most effective training programmes provide students with **feedback** (Dignath et al., 2008; Dunlosky et al., 2013) because feedback decrease overconfidence of students' performance (Dunlosky & Rawson, 2015). Self-regulated learner is

encouraged to ask for feedback from teacher in all three phases of SRL cycle (Butler & Winne, 1995).

PRACTICAL EXAMPLE

In **preparatory phase**, the learner may confront self-efficacy beliefs. *Are my learning goals appropriate? Are my plans too ambitious or too modest?* In **performance phase**, the learner modifies learning strategies or regulatory processes. *Is the used strategy leading me to my goal?* In **appraisal phase** they improve future learning based on feedback. *Was my learning approach suitable? Should I change anything in the future learning?*

In self-regulated learning, different kinds of feedback are used to evaluate students' performance. Two most common are **performance feedback** and **calibration feedback**. Performance feedback provides information on whether the task solution was correct or incorrect, calibration feedback provides information about the correctness of task performance as well as the accuracy of the metacognitive judgment regarding it (Urban & Urban, 2018). Moreover, performance feedback during performance phase in SRL improves performance in testing (Dunlosky & Rawson, 2015).

While performance feedback has an immediate effect, even preschool children can self-evaluate more accurately after receiving performance feedback (Urban & Urban, 2020), calibration feedback is more complex and needs more time to enhance monitoring accuracy (Urban & Urban, 2018; Urban & Urban, 2019), performance and self-efficacy (Nietfeld, Cao, & Osborne, 2006).

TASK FOR STUDENTS

Recall the number of correctly answer questions from LESSON 3.

Provide yourself performance feedback.

Provide yourself calibration feedback on all judgments you have made. (For example: "I thought I will be able to solve/ I solved correctly three questions but in fact I solved correctly two.")

CONCLUSION

Improving monitoring accuracy is a key feature in successful self-regulated learning (Butler & Winne, 1995; Dunlosky & Rawson, 2015; Nietfeld, Cao, & Osborne, 2006). Students should be therefore provided by **feedback** in all phases of SRL and teachers should lead students to **monitor** and **regulate** their own **learning process**. Therefore, educators must be aware of their own learning. According to Flavell (1979), metacognition is defined as **cognition about cognition**. It involves reflecting and being aware of ones' own various cognitive processes. Increasing awareness of teachers' and students' skills is considered an essential requirement for the development of metacognition in students.

FEEDBACK QUESTIONS

1. *What is the role of metacognitive processes in self-regulated learning?*
2. *In which phase of self-regulated learning, metacognitive strategies are used?*
3. *Which are effective cognitive learning strategies?*
4. *How can teacher evaluate student's performance in self-regulated learning?*

STUDY TASKS AND SELF-MANAGEMENT SKILLS IN HIGHER EDUCATION

INTRODUCTION

The following text is based on the assumption that if university students are to successfully develop strategies and skills for **self-determination** and **self-management of learning**, it is necessary to describe correctly the **environment**, **culture**, **organization** and **expectations** associated with universities. It should be noted at the outset that due to the different traditions of the development of higher education and higher education

institutions in individual countries, there is great variability in the terms by which these institutions are referred to.

Two terms are widely used to describe the segment of schools that follow secondary education: **higher education** and **tertiary education**. Their content of both terms more or less overlaps, the first is more common in British and North American publications, the second was adopted in connection with the introduction of the UNESCO International Classification of Education Degrees (ISCED) and is common in international studies, statistical reports, and concept papers. More than terminology, however, it is important what exactly the individual actors represent under these terms, what expectations arise from the ideas, and what tasks and roles teachers and students must fulfil.

THEORETICAL BACKGROUND

The term higher education means education at a college or university where subjects are studied at an advanced level (Cambridge dictionary). The International Standard Classification of Education ISCED 2011 describes higher education as follows: "Tertiary education builds on secondary education, providing learning activities in specialized fields of education. It aims at learning at a high level of complexity and specialization. Tertiary education includes what is commonly understood as academic education but also includes advanced vocational or professional education. It comprises ISCED levels 5, 6, 7, and 8, which are labelled as short-cycle tertiary education, Bachelor's or equivalent level, Master's or equivalent level, and doctoral or equivalent level, respectively. The content of programs at the tertiary level is more complex and advanced than at lower ISCED levels" (ISCED 2011, p. 46).

Furthermore, UNESCO investigates the situation of education and analyses the main trends of its development. Among other changes, it is especially a permanently **rising population** that enters the **tertiary level**. One speaks about the massification accompanying with "lowering of academic standards as universities and student populations become yet more diversified (Altbach el al., 2009). In the

1990s, the participation rate was around 15%; now it is over 40% in many countries, and some politicians are signalling a target of up to 60%" (Biggs & Tang, 2007, p. 4).
The discussion on the idea of a university is not new. Many scholars tried to decide about the role of higher education in society and about the position of universities in the process of knowledge creation and transfer. Whitehead argues that: "the university imparts information, but it imparts it imaginatively… A university which fails in this respect has no reason for existence. This atmosphere of excitement, arising from imaginative consideration, transforms knowledge. A fact is no longer a bare fact: it is invested with all its possibilities. It is no longer a burden on the memory: it is energizing as the poet of our dreams, and as the architect of our purposes. Thus, the proper function of a university is the **imaginative acquisition of knowledge**. Apart from this importance of the imagination, there is no reason why businessmen, and other professional men should not pick up their facts bit by bit as they want them for particular occasions. "A university is **imaginative**, or it is nothing - at least nothing useful" (Whitehead in Ramsden, 1992, p. 12, bolded by the author of this chapter).
In conclusion, we could summarize that for the current tertiary or higher education, it is typical that:

- Learning subjects are not only young adults but also people in other phases of their life course.
- They already have acquired learning habits and knowledge from the previous education, they cannot be considered as "tabula rasa" in the sense of learning techniques and skills.
- The academic environment covers either more experts like, e.g. scientific content and/or professional kind of future work preparation – these both sides struggle sometimes for the hegemony.

In short, it must be kept in mind that **higher education** has been undergoing **significant changes** and **reforms** during at least the **last three decades**.

Additionally, the world around keeps moving forward. Here are some most influential keywords to illustrate this development:

- massification,
- democratization,
- internationalization,
- increasing student diversity,
- struggle between academic and professional programs,
- the two-degree system introduced with the Bologna process,
- liberalization (the university does not keep a monopoly on knowledge, many, even lay or uneducated people can easily buy or reach demanded information),
- knowledge inflation (it is difficult to distinguish what is elementary, e.g. the most important, essential education, many are drowning in the ocean of facts).

All these key points are also the **challenges**. If we recall what Whitehead (Ramsden, 1992) wrote, a university (or any similar institution of higher education) becomes useless, when it loses its **uniquity**, its **spirit**, **originality**, and **creativity of thinking**. In the next step, we will describe typical study tasks at higher educational institutions to explain later what teachers can do to support self-regulated learning and the imaginative spirit of learning.

Let us assume that students from higher education institutions are obliged to master various types of activities and for each type of these activities it is possible to order an appropriate **list of skills** and **teaching approaches** (which will be discussed later). For the purpose of this text we could, with certain amount of caution, divide all academic tasks common at higher education into four main subgroups: **knowledge transfer and acquisition** (this first category leads to distinguish many other subcategories including information reception, processing, categorising etc.), **knowledge production** (what could also be called scientific work, including re-production of previous state of knowledge, preparing and conducting

of own research, ability to formulate and public research results etc.), **social dimension of learning**, and **professional formation** and **academic ethos**. This four-category division is of course not completely or universally agreed, and it allows all readers and users to adapt or to add other aspects and tasks of academic work in higher education.

PRACTICAL EXAMPLE

It has to be stressed that all four aspects illustrate the reality of a **generalized higher education institution**, therefore there will be remarkable differences among schools, especially with regards to the **type of a higher education institution** (academic, professional), in the direction of a **study programme** (social sciences, humanities, technical studies etc.) or of overall **country specifics** (higher education legislation, national educational policy etc.). Four categories of tasks refer to a higher or tertiary type of learning and they do not describe the metacognitive level (or self-determination / self-regulation). This meta-level goes above and across these four categories as the following scheme clears up.

Table 2: Study tasks categories at higher education

Metalevel (f. e. self-determination, self-regulation, metacognitive skills)			
Metalevel influences all four types of skills needed during university study			
Knowledge transfer and acquisition	Knowledge processing and production	Social dimension of learning	Professional formation and academic ethos

Source: Own elaboration

Knowledge transfer and acquisition: Beginning with ancient Roman and Byzantine times, through the medieval reborning of erudition in western European countries until the period of Enlightenment and modernity, the most common picture of a university is always related to a solid, broad and expert knowledge base. Most ancient donors gave schools money to buy books, funders now-a-the day pay for licences to approach online resources. University libraries represented

and still represent a "container" of concentrated information waiting to be opened, rediscovered, enlivened, and transferred by and to the next generation. Do not matter how fast this tradition leaves the position to a new, digital, or virtual kind of learning, almost every student during the first days and first steps in a campus is obliged to deal with the following tasks:

- **attaining a lecture**, that means understanding of spoken language (listening and comprehension of a lecture), the ability to concentrate, to take notes, to identify the most important parts of the presentation, to ask questions;
- **searching for information**, this involves the ability to use all kind of primary resources effectively, to use searching engines, catalogues, databases; this category also involves a general orientation in the library environment;
- **reading and comprehension of a text**, especially the ability to read effectively, to find quickly important facts, to apply functioning exception techniques (active learning strategies);
- **using new media and modern resources**, this ability refers to the current situation when students spend increasing study time on-line of via which refers to.

Knowledge processing and production: During the foundation times of modern European and American universities, it was always important that teaching must collaborate closely together with research (namely Humboldt and Newman). One would argue that students are not on the same level as fully qualified researchers and they must therefore the knowledge more absorb than create. This position is of course true, but only to some extent. University study - does not matter if strictly academic or professional - must at least partly simulate the way, how the knowledge came to light. Through this category students are to develop critical thinking skills and to conduct own research activity even though they do not aim, in their professional career, to stay in academic environment. This category consists of the following tasks:

- reproduction of knowledge,
- formulation of own ideas, positions or opinions,
- suggesting research design,
- conducting the research process,
- identifying of a problem and conducting all problem-solving process.

Social dimension of learning: As a man is not an isolated island, also higher education has also an important social dimension which affects both individual and collective level of student life. To this category constants following tasks:

- orientation in the academic environment, including the campus and all school facilities,
- understanding and acceptance of a student role,
- teacher – student relation, the common communication related to teaching and learning situations,
- socialization into the student body,
- social responsibility of higher education institution, relationship between university and public society, state institution, family, etc.,
- personal responsibility for own study (why, for what expenses, with what outputs etc.).

Professional formation and academic ethos: Teaching is not only instruction but mainly formation of persons fostered by the practice of habits and virtues.

- professional socialization,
- academic ethics – freedom, rules, etc.

TASK FOR STUDENTS

Analyse in small groups your own study programme. Identify the most frequent teaching forms and methods. Estimate what exactly your teachers expect from you. Decide about differences between learning at a high school and on the university level. What is the role of self-direction and self-regulation? What is typical for university culture and environment?

CONCLUSION

Self-management skills refer to **strategies**, **techniques** and **approaches** we use to direct our activities and behaviours effectively. They help become a successful learner and allow to **maximize productivity**, **improve workplace performance** and efficiently achieve **professional goals**. Improving self-management skills can help **increase employability** and **better manage career path**.

FEEDBACK QUESTIONS

1. *What could you do to change the indecisive or surface approach to pragmatic or deep type?*
2. *What could you do to benefit deepen your understanding of taught topics?*

TEACHING STRATEGIES FOR ESTABLISHING AND SUPPORT OF SELF-REGULATED LEARNING

INTRODUCTION

The term **self-management** became a roof concept referring to many fields of education, including very broad discussion on **personality**, **motivation**, **learning**, or **communication**. As some authors suggest, the self-management in higher education consists of **self-management tasks** (what situations are to be solved, what are typical situations during the learning process) and **self-management skills** (what a person is supposed to learn, what are necessary skills to master learning goals, etc.). Among the most important self-management tasks during higher education study could be listed understanding of own role as a part of the whole learning situation (student as a learner), student relation to the learning process (attitudes, motivation) and the student organization of work (work management, the decision on and division of resources like time, material, expenditures, etc.). As the most important skills, that correspond with the

above-mentioned tasks, are listed **interpersonal skills** (dealing with the internal environment, understanding of own personality), **motivation skills**, **time-management,** and some other related domains.

THEORETICAL BACKGROUND

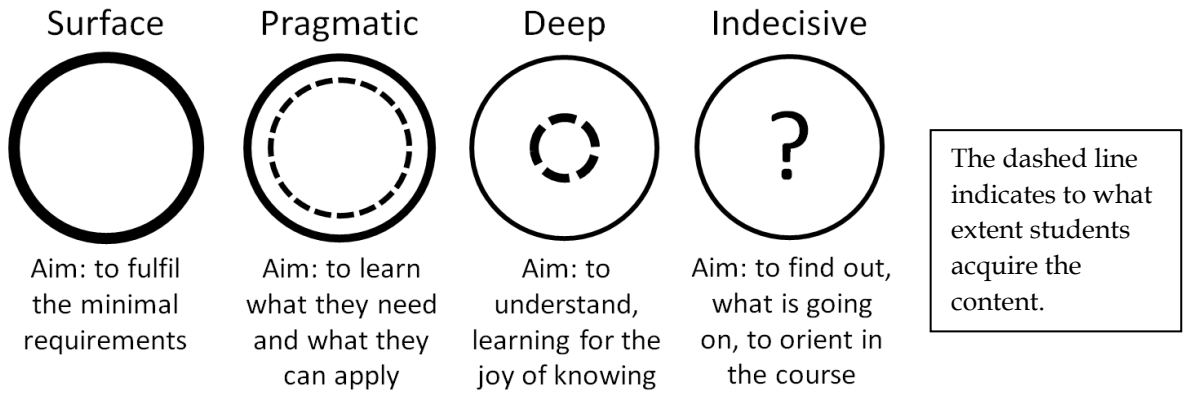
To distinguish strategies of higher education from those common at the lower level or in other kinds of institutions (at upper secondary level, in further education), it is useful to remind what Paul Ramsden listed as important characteristics of university study. He understands that a teacher at higher education should fulfil the following expectations:

- a desire to share love of the subject with students,
- an ability to make the material be taught stimulating and interesting,
- a facility for engaging with students at their level of understanding,
- a capacity to explain the material plainly,
- a commitment to making it absolutely clear what has to be understood, at what level, and why,
- showing concern and respect for students,
- commitment to encouraging student independence,
- an ability to improvise and adapt to new demands,
- using teaching methods and academic tasks that require students to learn actively, responsibly, and cooperatively,
- using valid assessment methods,
- a focus on key concepts and students' misunderstandings of them, rather than on covering the ground,
- giving the highest quality feedback on student work,
- a desire to learn from students and other sources (Ramsden, 1992, p. 89).

The term strategy means something more than just how a teacher carries out the **classroom activity**. Usually it includes also the overall **relationships** between a **teacher** and a **student** combined with broader **academic background and**

environment, especially rules, guidelines, allocated time for teaching, resources available for teaching, etc. **Approaches to learning** also relate to other personal characteristics of students, besides others to **cognitive** or **learning styles**. The purpose of this text does not allow to compare all possible aspects therefore we will pay more attention to Ramsden's theory of learning approaches of students at higher education, and there will be also some references to Kolb's learning types theory.

Ramsden and his followers pointed out that for the successful higher education, it is important to take **student approaches to learning** into account (Ramsden, 1992). The author differentiates three main categories of students according to their learning strategies: **surface**, **pragmatic**, and **deep**. From long-term work experience, we add a fourth category: **indecisive**.



Picture 3: Study approaches
Source: Own elaboration based on Ramsden

Students with the **surface learning approach** come to courses with the intention to overcome obstacles and to gain credits with the minimum of expenditure (with minimal effort). They are **not interested in the content** of other aspects of higher education except what the teacher demands for the final test of examination. This approach has many reasons. Very often these students do not understand and accept their role as a member of academia. They also do not see any relevant meaning of the content for them and their lives. Sometimes, they are persons who have some other priorities and a course does not go well with them (for example,

when all students from different programmes must complete some common courses, nevertheless they are relevant to their direction).

Students with the **pragmatic learning approach** go further than the previous. They **know** very well **what their aims are** and what they want to achieve in their lives of **profession.** This position allows them to evaluate the content according to the **potential benefits**. It is essential for them to see that what they learn relates to what they will do or how it would be possible to apply the acquired knowledge. Some of these students already have professional experience and it is easy for them to discover whether the new information corresponds with the world of work and real life. They prefer **practical outputs** for the theory (which does not exclude also some theoretical background; in this case the type corresponds with Kolb, they would probably belong to a converging or accommodating learning style). Strong point of this category is students' ability to self-organization, students can effectively **manage their time** and meet **deadlines**.

Students with **deep learning approach** belong usually to a minority of learning subjects. They need to learn because they **want to understand**. Their favourite question is **"Why?"** and they are not satisfied with uncompleted or unproven facts. They **study for their love to knowledge** or the subject, they are usually curious on the beginning and exited when the curtain of a course rises, and new horizon of science appear. Their approach could be very demanding, even difficult for some lecturers, as it is common that these students ask **intelligent questions** and discuss with **enthusiasm**. It could happen that they can be **disappointed** if the reality does **not meet their expectations**. Then they withdraw or even change their approach to the surface level. Sometimes it is difficult for them to finish a course in time to even finish the course at all for their incompetence to manage time and respect deadlines. Comparing with Kolb's learning style theory, this type would probably be closer to **diverging** and **assimilating learners**, who like **reflecting on concrete experience** (not only "What happened?" but also "Why?") and like theorising.

Finally, there is the fourth category added of the study approach - **indecisive students**. It could be argued that this is not approach in the true sense of the word. These persons are standing before the gates of new learning experience and are

waiting for a guide who would enlighten them what is going to happen. They do not know much either about course content, course objectives, or course assignments. Unfortunately, sometimes it happens that they **do not orient themselves** during the course and are **lost**, indifferent, **unmotivated**, and sooner or later they drop out. This group deserves more attention from both lecturers and support staff. It is necessary to provide proper **study guidance** and to ensure that there will be sufficient contact and interaction with the responsible teacher and also other students. There is a significant danger they could fix the surface approach in case they do not find convincing meaning in their study.

Teaching methods in higher education are widely discussed in the literature (Biggs & Tang, 2007; Gibbs, 2014; Ramsden 1992). There is no doubt that there is relation between the **selected method**, ongoing student activities, and other effects, especially visible in the way how students understand their own learning and how they overtake responsibility for own learning and development.

In the second part of this publication (Social Constructivist Didactic Guide), you will find the most effective teaching methods for **activating students**. In the text below, there is description of the most **common teaching methods**. Each method is linked to the most typical tasks (activity) **expected from students**. In the table, each cell indicates to which extent the method is appropriate for a given category of tasks (+++ very appropriate, ++ partially appropriate, + less suitable), see Table 3.

Lecture represents the most common and probably the oldest teaching method in higher education. The main purpose of the lecture is knowledge transfer and acquisition. However, according to Gibbs (2014) *"over 700 studies confirmed that lectures are less effective than a very wide range of other methods for achieving almost every educational goal you can think of."* The same author goes on and warns that even for the transition of factual information there are many other and more effective methods, like **private reading**. Firstly, we must answer the question if the lecture is an appropriate method, and if yes, what form of lecturing is the most effective.

Table 3: Relation between study tasks and teaching methods

	Knowledge transfer and acquisition	Knowledge production	Social dimension	Professional formation and academic ethos
Lecturing	+++	+	+	+++
Small group teaching / seminary	++	++	+++	++
Self-directed learning	+++	+++	+	+
Practices	++	++	++	++
Computer assisted learning	+++	++	+	+
Problem-based learning	++	+++	+	++
Experiential / workplace learning	+	+++	++	+++

Source: Own elaboration

Exley and Dennick (2007) list several ideas, what can traditional lectures do well:

- communicating enthusiasm for the topic,
- providing a structure or framework,
- tailoring content to the students' needs,
- providing current information,
- using another method is not viable.

There are other ways how to make teaching **more interactive** and how to support indeed, responsible and self-regulated learning. Besides others, it could be a **tutorial system** and **one-to-one approach** with regular teacher-student contact. Individualization would allow more space for looking **own learning trajectory**, on the other hand, there is less and less time space in massified higher education for individual consultations.

PRACTICAL EXAMPLE

Other strategies can focus on the development of a **participative approaches**, for example, as a part of **small group teaching**, **student project work**, **discussions**, **problem solving groups**, or **work based education**. Here are some other recommendations:

- Teachers should clearly convey to students the main **idea** of a course, the main **aims**, and essential intended **learning outcomes**.
- It is worth to provide students **sufficient support materials** and to advise them how to in it.
- Students can become **"managers"** of their own **projects**, either research projects or work-based projects.
- Student can be asked to work in groups, where they must learn **team roles**, effective communication, and responsibility to others.
- The teacher can let students decide about some parts of the curriculum; students can then choose what to study and how to study, through **own enquiry**, students can enjoy more space to arrange their own learning.
- Application of **learning management systems** and other tools that allow students to see the **structure of a subject**, to become aware of its extent, and to be able to control their way step by step through a course.

TASK FOR STUDENTS

Go back to the table "Relation between study tasks and teaching methods". Try to evaluate listed teaching strategies according to their impact on your approach to learning. What can exactly be done to acquire at least a pragmatic or even deep level?

CONCLUSION

Self-direction and **self-regulation** also relate to the idea and the conception of a university. It is important to clear out what expectations and what tasks students are required to complete

during their journey through courses. Teachers could affect student approaches to learning especially by choosing **stimulating** and **effective methods**, for example, **interactive lecturing** or **problem-solving activities**.

FEEDBACK QUESTIONS

1. *What study tasks are typical for your courses? What kind of activities are you supposed to fulfil?*
2. *How do you estimate your study approach and the study approach of your schoolmates? For what reasons do you adopt such an approach?*

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Creativity and Innovation

Mehmet Emin Bakay – Şaban Çelik – Tolga Şentürk

MOTTO: *„It is not the strongest of the species that survives, nor the most intelligent. It is the one that is the most adaptable to change."*
Charles Darwin

LEARNING OBJECTIVES OF THE MODULE

The learning objective of the module is that students will be able:

- to learn theoretical perspectives and models of creativity and innovation,
- to illustrate appropriate techniques and strategies to enhance creativity,
- to demonstrate tangible and intangible encouragement methods and tools to encourage innovation skills,
- to apply innovative thinking methods and techniques into practical contexts,
- to identify tactics and strategies for development of creative processes,
- to discuss ways to deal with complex challenges with a creative perspective and innovative outlook.

THEORETICAL PERSPECTIVES AND MODELS OF CREATIVITY AND INNOVATION

INTRODUCTION

It is essential to conduct the first lecture with the presentation of creativity theorists and their contribution to innovation. Although there are various theoretical approaches to creativity and innovation in different contexts, there is a general consensus on the basic definitions of these concepts, even if there are differences in practice. "While creativity is seen as the aptitude to produce an original work (Sternberg ve Lubart, 1999), innovation is understood as a new product, service, process or application of the system" (OECD & EUROSTAT, 1996).

Apart from these basic definitions, there are also some different conceptualizations. "For example, while creativity is the skill to evaluate the opportunities that no one else has seen innovation brings novelty and benefits with some practices to business, employee and organization" (West and Richards, 1999). "According to

a more general approach, innovation is considered as the implementation of a created value or idea" (Craft, 2005).

THEORETICAL BACKGROUND

1. Creativity Theories

The literature on creativity has grown exponentially since 1950s. This section is very short synthesis of these theories (**Developmental**, **Psychometric**, **Economic, Stage and Componential Process**, **Cognitive**, **Problem Solving and Expertise Based**, **Problem Finding**, **Evolutionary**, **Typological**, **Systems**) which are explained very well in Kozbelt, Beghetto, and Runco (2010).

1.1 Developmental Theories

Within the framework of this approach, researchers examine the impact of individual's family and the social environment on the potential of creativity. Some studies include longitudinal data analyses. These studies generally argue that the person's family structure (Albert and Runco, 1989) and the **environment in which they live** (Goertzel and Goertzel, 1976) influence the **level of creativity**. Development theories explain the impact of **games** and **entertainment** (Pearson, Russ and Cain Spannagel, 2008), the **number of children** (Gaynor and Runco, 1998) and the **level of freedom in the family structure** (Albert and Runco, 1989) on the level of creativity.

1.2 Psychometric Theories

Psychometric theories develop scales to **measure creativity**. They are important for **testing the validity** of existing creativity theories, even though they do not provide an explanation for the nature of creativity. These tests show important results in order to distinguish creativity from intelligence, convergent thinking and similar concepts. Psychometric tests give importance to measuring the effect of the environment in which the individual is located, as well as the validity and reliability of the scales used to measure the level of creativity of the individual.

Structure of **Intellect (SOI) Theory** (Guilford, 1968) and **Torrance Test of Creative Thinking** (Torrance, 1974) are examples of this approach.

1.3 Economic Theories

Economic theories generally emphasize the relationship of the economy with creativity and its impact on creativity. They argue that number of people in the environment constrain the creativity due to inhibition of brainstorming techniques. Additionally, they claim that as the level of knowledge and expertise increases, the trend towards different alternatives will decrease. This approach focuses on the **environmental factors** that would create creativity. In other words, the role of exogenous factors in the emergence of creativity has been addressed in an economic benefit-cost analysis.

1.4 Stage and Componential Process Theories

This theory is developed to understand the nature and structure of creativity via **stages** and **componential processes**. According to this theory, creativity is claimed to occur as a result of some stages, which may be **sequential** or **recursive**. The most well-known model developed by Wallas (1926) consists of four sequential stages. These stages are **preparation stage** (definition of the problem), **incubation stage** (process of thinking), **illumination stage** (emergence of an idea) and **verification stage** (examination of the accuracy of the idea).

- **Cognitive Theories**

Cognitive theories put the creative process and creative people at its centre. Within the framework of this approach, it is argued that cognitive functioning is the basis for the formation of **creative thinking**. The creative individual is the ones who make a difference in this process. In this context, Guilford (1968) has developed the **Theory of Structure of Intellect** by defining cognitive functioning processes.

- **Problem Solving and Expertise Based Theories**

Problem solving and expertise-based approaches can also be seen as part of cognitive processes in general. In this approach, creativity is defined as a rational process that occurs on the basis of **cognitive processes** and **field expertise**. In this approach, it is emphasized that, for example, a problem without a single solution develops creativity.

- **Problem Finding Theories**

According to this theory, an **appropriate problem** must be found first and then the solution must be developed (Runco, 1994). Within the framework of the problem-finding approach, creative people are defined as those who proactively identify the problem and then produce solutions with a **subjective** and **exploratory behaviour**.

- **Evolutionary Theories**

Some researchers have proposed an evolutionary approach to explain creativity (Simonton, 1988, 1997). Simonton argues that both **experience** and **genetic factors** contribute the development of scientific talent. He calculates the genetic influence of talent on creative achievement in science. This approach is used to explain the situation of distinguished people with very high creativity level.

- **Typological Theories**

In this approach, the differences in creativity are divided into a certain **typology**. These differences are personality traits of a creative individual, his/her career preferences, his/her working methods and so on.

- **Systems Theories**

System theories conceptualizes creativity not as a single phenomenon but as a **subcomponent of a complicated system**. This approach essentially states that creativity occurs as a result of **interrelated** and **interactive factors**. Major contributors to the system theory approach include Gruber (1981), Csikszentmihalyi (1988) and Sawyer (2006).

Table 1: General Description of Main Category of Creativity Theories

Category	Primary Assertion	Key Concepts	References
Developmental	Creativity develops over time (from potential to achievement); mediated by an interaction of person and environment.	Place and family structures Role of play Support during transitions Longitudinal process Multivariate influences	Helson (1999) Subotnik and Arnold (1996) Albert and Runco (1989)
Psychometric	Creativity can be measured reliability and validly; differentiating it from related constructs (IQ) and highlighting its domain-specific nature.	Reliable and valid measurement Discriminant validity Thresholds Domain specificity	Guilford (1968) Wallach and Kogan (1965)
Economic	Creative ideation and behavior is influenced by "market forces" and cost-benefit analyses.	Influence of macro-level factors Psycho-economic perspective Markets of creativity Investment decisions	Rubenson and Runco (1992,1995) Florida (2002) Sternberg and Lubart (1992,1995)
Stage & Componential Process	Creative expression proceeds through a series of stages or components; the process can have linear and recursive elements.	Preparation stages Incubation and insight Verification and evaluation Component mechanisms	Wallas (1926) Runco and Chand (1995) Amabile (1999)
Cognitive	Ideational thought processes are foundational to creative persons and accomplishments.	Remote association Divergent/convergent thinking Conceptual combination, expansion Metaphorical thinking, imagery Metacognitive processes	Mednick (1962) Guilford (1968) Finke, Ward and Smith (1992)

Problem Solving & Expertise-Based	Creative solutions to ill-defined problems result from a rational process, which relies on general cognitive processes and domain expertise.	Ill-defined problems Cognitive, computational approach Expertise-based approaches Problem representation & heuristics	Ericsson (1999) Simon (1981, 1989) Weisberg (1999, 2006)
Problem Finding	Creative people proactively engage in a subjective and exploratory process of identifying problems to be solved.	Subjective creative processes Exploratory behaviors On-line discovery	Getzels and Csikszentmihalyi (1976) Runco (1994)
Evolutionary (Darwinian)	Eminent creativity results from the evolutionary-like processes of blind generation and selective retention.	Chance-configuration Blind generation of ideas Selective retention of ideas Equal-odds rule Social judgment and chance	Campbell (1960) Simonton (1988, 1997)
Typological	Creators vary along key individual differences, which are related to both macro- and micro-level factors and can be classified via typologies.	Individual differences Categories of creators Seekers versus finders Integrate multiple levels of analysis	Galenson (2001, 2006) Kozbelt (2008)
Systems	Creativity results from a complex system of interacting and interrelated factors.	Evolving systems Network of enterprises Domain and field Gatekeepers Collaborative creativity Chaos and complexity	Gruber (1981) Csikszentmihalyi (1988a) Sawyer (2006)

Source: Kozbelt, Beghetto, and Runco (2010)

2. Innovation

In the Oslo Guide, which is one of the important studies on innovation, innovation is defined as follows: "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations" (OECD & EUROSTAT, 1996). Although there are many types of innovations, this section will be reserved to the most prominent ones: Incremental - Radical Innovation; Technology - Management Innovation and Product - Process Innovation (Utterback, 1994).

2.1 Incremental - Radical Innovation

Incremental innovation refers to some small-scale changes to improve an existing systems, products or services. The radical innovations, on the other hand, focus on **revolutionary structural changes** targeting to replace the existing services, products or systems. As innovations shift from incremental innovation to radical innovation, the risk that the organization or business takes will increase. Scuilli (1998), in his study in the banking sector, revealed that incremental innovation is related to the **size of the firm**, and large firms are more open to this type of innovation. Ettlie et al. (1984) emphasized that radical innovations are more common in businesses with high centralization and low bureaucratic transactions. On the other hand, there are those who say that firm size is inversely related to radical innovations (Dougherty & Hardy, 1996).

2.2 Technology - Management Innovation

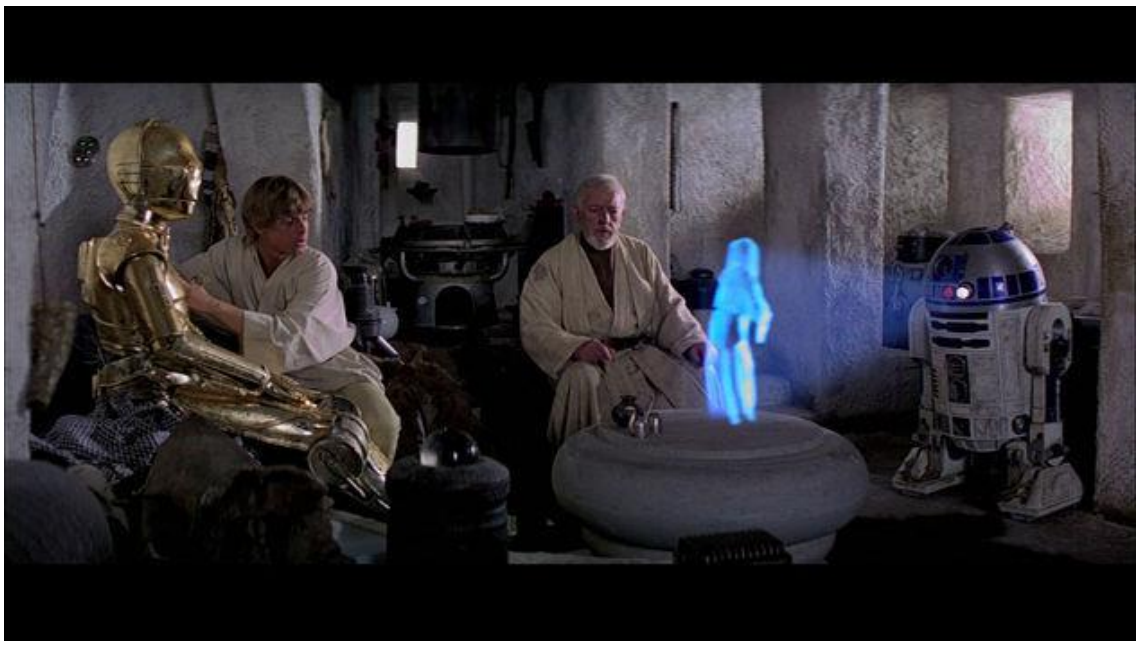
While technological innovation refers to the process in which a new idea is embodied in procedures, devices or tools that are of practical value to society, management innovation includes changes that affect the organization's policies, the procurement of its resources or the social structure (Daft, 1978).

2.3 Product-Process Innovation

While product innovation includes changes in the product or service, process innovation refers to changes in the production or supply stages of these products and services (Utterback, 1994). Business strategies and organizational structure are directly related to product (Parthasarthy and Sethi, 1992) and process (Dess and Davis, 1984) innovations. In addition, both product and process innovations are associated with the strategic changes of businesses and organizations.

PRACTICAL EXAMPLE

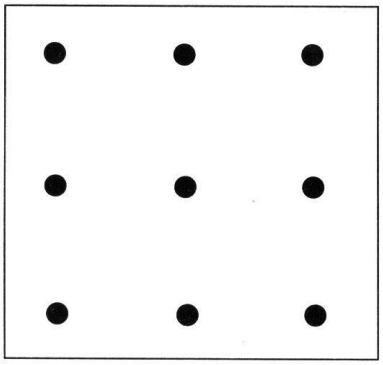
Science fiction movies may inspire technological inventions. To take one example: The first usage of a hologram representing an individual was in the science fiction movie "Star Wars: A New Hope". In this movie Princess Leia's image was projected as a hologram. Inspired by this projection, scientists have managed to create the 3D imaging technique to create the illusion of depth in an image.



Picture 1: Robin Zabiegalski (2017, 25 April)
Source: https://thetempest.co/2017/04/25/now-beyond/tech-money/tech-inspired-by-science-fiction/

TASK FOR STUDENTS

T*ry to solve the following puzzle. The goal of this puzzle is to connect all nine dots by drawing* ***four*** *continuous straight lines without taking your pen off the page and without tracing the same line more than once. This task will help to improve your creative thinking skills.*



Picture 2: The nine-dot puzzle
Source: Authors of this chapter

CONCLUSION

Creativity is linked to the concepts of mostly **inspiration** and **freedom**. This arouses the interest that creativity is only in art, such as music and painting. This is a **restrictive approach**. The fact that creativity plays a role wherever information exists demonstrates the **applicability of creativity**, especially in terms of educational sciences. Therefore, creativity is effective in the information processing and inference processes in the field of education. As Miller (1986: 248) states, "creativity has not been a serious lesson especially in university education. However, creativity must be the basis of the modern liberal education system in order to increase student performance".

FEEDBACK QUESTIONS

1. *Define the concept of creativity and innovation by giving some practical examples.*
2. *What are the major theoretical perspectives in the field of creativity?*
3. *Explain the following innovation types in detail: Incremental - Radical Innovation; Technology - Management Innovation and Product - Process Innovation.*

STRATEGIES AND TECHNIQUES TO ENHANCE CREATIVITY

INTRODUCTION

This lecture introduces students the strategies of creative thinking that will stimulate their imaginations. In this lecture, we will present several basic creative strategies. Our main goal is to discuss innovative strategies and techniques to enhance creativity.

As the importance of creativity is understood, many creativity programs and methods in the field of education have been developed over the years (Bull, Montgomery and Balloche, 1995). Some research has been done to measure the effectiveness of these training programs and methods (Clapham, 2003; Nickerson, 1999; Scott, Leritz, and Mumford, 2004). When the results of these studies are evaluated, it is seen that two issues stand out in the development of creativity. The first is to develop the **creativity potential**. Secondly, the results of aforementioned studies provide people with the knowledge and skills to develop creative ideas.

THEORETICAL BACKGROUND

1. Developing creativity potential

Some of the training programs designed to develop creativity potential are **Hemisphericity**, **Psychogenics** and **Psychosynthesis**. These programs are aimed at developing the mental relationships necessary for the brain to perform creative activities (Clapham, 2003). These trainings consist of visuality, relaxation, artistic activities, music and physical movements.

2. Generating creative ideas

Unlike training programs aimed at developing creativity potential, there are also practical training programs aiming to reveal creative ideas. The most well-known programs developed on this subject are **Osborn's Creative Problem-Solving Program** and the **brainstorming program**. In these programs, Osborn wanted to

ensure that groups produce creative ideas effectively and efficiently by applying a certain set of rules.

3. Techniques for enhancing creativity

This section offers a presentation of some of the most used techniques for enhancing creativity: brainstorming, synectics, lateral and vertical thinking, hemisphericity, Khatena training method and packaged educational programs.

3.1 Brainstorming

Brainstorming is a method developed by Osborn. The main purpose of this method is to trigger a better idea that will emerge in the **group work**. In other words, the idea of an individual in the group allows other individuals to come up with another idea that would not normally come to mind.

3.2 Synectics

In order to identify and solve problems that depends on creative thinking and informal conversation among a small group of individuals with diverse experience and expertise, Gordon and Prince propose this method. The aim of this strategy is to reveal the **similarities of individuals in different items** and to develop different ideas about these items. This strategy states and problems based upon creative thinking by a **small**, **meticulously chosen**, and **diversely specialized group**. Synectics relies heavily on human creativity and consciously uses some mental mechanisms of pre-consciousness.

3.3 Lateral and Vertical Thinking

Edward de Bono (1970) defines two ways of thinking: Lateral and Vertical thinking. The application of the existing idea is essential in vertical thinking. In other words, digging the same hole deeper. However, it is essential to develop a new idea in lateral thinking. This is digging a hole somewhere else. This training type is the opportunity to develop new ideas that are essential in the creativity program.

3.4 Hemisphericity

As Herrmann claims, our brain's two hemispheres are specialized for different jobs. From this perspective, **the left hemisphere** is more **effective in sequential computing**. The right hemisphere is more effective in information processing at the same time. Therefore, the **right hemisphere** is more effective in **establishing relationships between items** that are distant from each other. Hemisphere creativity trainings are aimed at ensuring that this feature of the right hemisphere is properly balanced for both hemispheres. For this purpose, visual techniques, relaxation techniques, art and music are used in such creativity trainings.

3.5 Khatena Training Method

Khatena's (1973) creativity training program consists of (a) **breaking away from the obvious and common place**, which means viewing the **environment** in a **different perspective,** (b) **transposition of ideas** which means transferring an idea into a different way of expression, (c) **analogy** which means examining unexpected similarities between objects, (d) **restructuring** which means reorganizing the component of a given structure, and (e) **synthesis** which means incorporating the new idea into a given structure.

3.6 Packaged Educational Programs

The Purdue Creative Thinking Program is one of the well-known packaged education programs in which **divergent thinking** is emphasized. In this program, stories of famous creative peoples are presented in order to enhance creativity. Along with this, practical exercises are conducted. The **Productive Thinking Program** is another one to develop **creative problem-solving skills**. Its target is to improve self-confidence towards problem-solving.

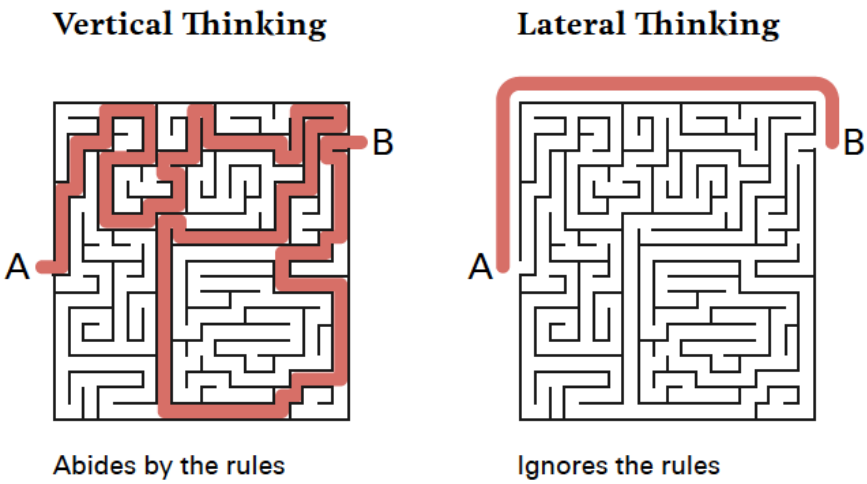
Table 2: Differences between Lateral and Vertical Thinking

Vertical Thinking	**Lateral Thinking**
Selective: choosing among alternatives	Generative: creating new alternatives
Progresses the ideas generated by lateral thinking	Improves the effectiveness of vertical thinking
Traditional	Searching for post-modern approaches
Needs correction at every step	Does not need correction at every step
Concentrating on and eliminating irrelevant approaches	Examining different approaches to find the most promising
Analytical and sequential	Provocative and can make jumps if necessary
Fixed categories and labels	Categories, etc. not fixed
Focusing on most likely approaches	Also searching for least likely approaches
Correctness cannot be disregarded	Richness is essential in lateral thinking
Finite process	Probabilistic process: explore chances of an optimal solution without guaranteeing one
Direct approach	Also explores indirect approaches for promising alternatives

Source: Koçak (2019)

PRACTICAL EXAMPLE

Lateral thinking can be applied to all kinds of challenges that we might encounter in our daily lives. If we adopt lateral thinking, it may help us to improve our living conditions.



Picture 3: Kindred Agency (2019, Apr. 26). Get Lost! Why lateral thinking is the only thing that will save business (Blog)

Source: https://medium.com/@kindred.agency/get-lost-why-lateral-thinking-is-the-only-thing-that-will-save-business-6c125d23e92c

TASK FOR STUDENTS

Form a group composed of three members from your class. Decide a new product to introduce a target audience. By using a brainstorming technique, try to identify a target market for this new product.

CONCLUSION

Creative thinking improves with the application of appropriate techniques and strategies for the execution of key processes involved in creative thought. Different cognitive strategies should be employed while executing different forms of knowledge in solving creative problems.

FEEDBACK QUESTIONS

1. *What are the main differences between vertical thinking and lateral thinking?*
2. *What are the most used techniques for enhancing creativity?*
3. *Explain the main stages of Khatena's creativity training program.*

METHODS AND TOOLS TO ENCOURAGE INNOVATION SKILLS

INTRODUCTION

There are three proposed approaches to turn creative ideas into innovative solutions. The first approach (user-centred design) is that user should be at the **centre of innovation** (Brown, 2008). The second approach (multidisciplinary teams) argues that participants should work **collaboratively** during innovation process (Kostoff, 2003). The third approach (project-based learning) creates a learning environment that fosters creativity and teamwork (Dym, et.al, 2005). This lecture presents main **tangible** and **intangible**

encouragement methods of innovation and tools that foster productive strategic discussions on innovation.

THEORETICAL BACKGROUND

1. User-centred design

Users, **products** and **markets** are well defined in this approach (Lim and Sato, 2006). According to this approach, innovation is expected to be useful and reliable to bring benefits to users. In this respect, user-centred design increases the marketability of the product. User-centred designs require a good review of the experiences of existing users. The innovative product should be safe to use. In respect to this, prototype production is encouraged in the innovation process and real users test the prototype before starting production (Lindfors, 2010).

2. Multidisciplinary teams

The second important feature of creativity trainings is the creation of **interdisciplinary teams**. One of the most important indicators of creativity performance is the variety of teams that are created (Austin, 1997). It is argued that teams composed of different specialties often create **dynamic synergies** and create **innovative products** (Kostoff, 2003). Heterogeneous groups (considering gender distribution) have been reported, for instance, to have high levels of innovative performance (Hoffman and Maier, 1961).

3. Project-based learning

Another important feature of innovation training is that it has a project-based structure. Project-based innovation trainings increase the attention of the participants on the subject (Newell, 2003). In such innovation trainings, the participants are first directed to **find** and **examine the problem**. Then, participants are expected to produce innovative solutions. Developing products for real users within projects is a common education method at universities (Pimmel, 2001). It is stated that project-based innovation training is more efficient than a classical teaching training (Dym, et al., 2005).

PRACTICAL EXAMPLE

Big technology companies, such as Apple and Microsoft, launch their security bounty programs by offering to give rewards anyone who might find vulnerabilities in their products. Since these companies might even ready to pay up to 1 million dollars, these kinds of incentives might encourage people's innovation skills.

Picture 4: CISOMAG (2017, 28 November), Bug Bounty Programs: Closing Security Gaps
Source: https://www.cisomag.com/whitepaper-bug-bounty-programs/

TASK FOR STUDENTS

Try to imagine setting up a streaming platform, such as Netflix, by using user-centred design model.

CONCLUSION

Innovation skills refer to the ability of original thinking that helps to convert knowledge into favourable concrete outputs. Innovators are curious and imaginative people who are willing to take risks at all costs. There is a common misconception and an illusion that innovation skills cannot be mastered while, in fact, everyone has some potential capacity for innovative thinking.

FEEDBACK QUESTIONS

1. *What are the most popular approaches for turning creative ideas into innovative solutions?*
2. *What are the advantages of project-based learning?*

APPLYING INNOVATIVE THINKING METHODS AND TECHNIQUES INTO ACTUAL PRACTICES

INTRODUCTION

This lecture presents some methods and techniques that encourage continuous innovation. In order to apply innovative thinking methods into actual practices, we will specifically focus on Johannessen and Stokvik's (2019) following tools and methods of creative process development: Examine your personal assumption, opinions, and those of others; First the overall situation then the existing context; Modular understanding; Analogies and metaphors ; Expansion of opportunities.

THEORETICAL BACKGROUND

First Method: Examine your personal assumption, opinions, and those of others.

In order to solve a problem, the first thing to do is to consider **all perspectives**, including those that are different from ours. For not being misled by premises and assumptions, we should develop some quantitative measurement indicators. Even while acknowledging the necessity of development of objective indicators, we can hardly deny that these indicators might serve personal fulfilment. Therefore, we should not set any limits to our perspective, and we should expand our outlook to find **alternative solutions**.

Second Method: First the overall situation then the existing context

Since all problems are parts of larger problems, we should analyse **the whole situation** as our starting point. Once we have established an overview of the whole situation, we may focus on our **particular challenges**. We may distinguish larger problems from specific ones, and we may find solutions by bringing diverse approaches together.

Third Method: Modular understanding

This method proposes to identify a problem as consisting of **lego bricks**. By using the Lego brick method, it is possible to break down established structures. As there are multiple ways of combination of Lego bricks, there are various solutions to our challenging situations.

Fourth Method: Analogies and metaphors

This method requires to ask a group of people to develop ideas for finding a solution to a problem by developing and using a **metaphor** or **analogy**. Metaphors and analogies are expected to generate some ideas for solving the problem.

Fifth Method: Expansion of opportunities

This method proposes to find a topic that **is not visibly related to our challenging problem**. Afterwards, we are expected to juxtapose some random ideas (chosen from that topic) with our problem. The main aim of this method is to develop an **unaccustomed way of thinking** and to trigger new ideas for solving our problem.

PRACTICAL EXAMPLE

Vicky the Viking, was an animated TV series, originally aired from 1974 to 1976. It was a German, Austrian and Japanese co-production. The series main character, Vicky, was a timid boy about 10 years old, who was using his strong imagination and creative mind to solve any kind of problems with which he is confronted. Since cartoons influence children's way of

thinking, it might be a good idea to teach how to apply innovation thinking methods and techniques into actual practices.

Picture 5: Vicky, the main character of the animated TV Series, Vicky the Viking
Source: https://www.anisearch.de/character/65960,wickie

TASK FOR STUDENTS

By using modular understanding method, try to find a solution for the problem of traffic jam during rush hours.

CONCLUSION

Applying innovative thinking means usage of information and knowledge in new situations or to create new knowledge. Johannessen and Stokvik's (2019) tools of creative process development, presented in this lecture, provide important materials designed to help anyone who wants to implement an innovation and to develop innovation skills.

FEEDBACK QUESTIONS

1. *What does modular understanding creative process development model mean according to Johannessen and Stokvik (2019)?*
2. *How do we expand our opportunities according to Johannessen and Stokvik (2019) in order to generate new ideas?*

TACTICS AND STRATEGIES TO DEVELOP CREATIVE PROCESSES

INTRODUCTION

In this lecture, we will present some of the following tactics and strategies that are developed by Johannessen and Stokvik (2019) in their book 'Evidence-based Innovation Leadership' for thinking creatively: **Shifting perspective**; **Try to visualize how you think**; **Recombine**; **Removing the context**; **Co-creation**.

THEORETICAL BACKGROUND

First strategy: Shifting perspective

This strategy requires to change our perspective systematically. It proposes to consider our problem from four distinct angles. The first angle is to evaluate the problem from a position of self-first, by asking a question such as: what are the benefits for me? The second angle is to view the problem from another person's perspective. The third angle is to identify the problem from the **angle of a neutral person**. The fourth angle attempts to view the problem from a **systemic perspective** by asking a question such as: how does the problem influence the whole system?

Second strategy: Try to visualize how you think

This strategy is based on the premise that language prevents us to realize the complexity of reality. From this perspective, we should try to use visual representations to express ourselves. It is argued that creativity would develop by freeing us from the **limits of linguistic structures**.

Third strategy: Recombine

This strategy recommends **selecting diverse elements** and then recombine them randomly. The main idea of this strategy is that **connection of different knowledge**, **information**, **concepts** and **ideas** might help us to see the problem from a different

perspective, and thus this recombination of different elements might trigger new ideas.

Fourth strategy: Removing the context

This strategy focuses on the parts. It is recommended to remove the whole context and to encourage the parts to fit into a new **irrelevant larger pattern**. The main idea is to prepare conditions as favourable as possible for emergence of new creative thoughts in the new contexts.

Fifth strategy: Co-creation

This strategy requires to establish a **genuine dialogue** with the aim flourishing creative ideas. What is understood by genuine dialogue is to listen the other person without prejudice and to wait a while before responding. This strategy is based on the idea that a creative dialogue should limit spontaneous reactions by **inserting pauses into** dialogues.

PRACTICAL EXAMPLE

Advertisements use diverse tactics and strategies to develop creative processes. They create original thoughts in the new contexts. The advertisement on Picture 6 is an illustrative example which gives creativity a new edge.

TASK FOR STUDENTS

By using the strategy 'Try to visualize how you think', design a wayfinding signage system for organization of Olympic Games

Picture 6: Ankita Goyal (2018, 13 September), 30 Innovative Subway Ads That Gave Creativity a New Edge (Blog)
Source: https://medium.com/@ankitagoyal102/30-innovative-subway-ads-that-gave-creativity-a-new-edge-37ff25d4fc40

CONCLUSION

Although there are different strategies to develop creative processes, there is only one common theme underlying each approach: free our minds from ordinary, traditional and conservative way of thinking. Each strategy demonstrates us how to improve our creativity skills by using appropriate methods and techniques.

FEEDBACK QUESTIONS

1. *Explain 'Removing the context strategy' according to Johannessen and Stokvik (2019)?*
2. *How do Johannessen and Stokvik (2019) explain the establishment of conditions of a genuine dialogue?*

CREATIVE PERSPECTIVE AND INNOVATIVE OUTLOOK TO COMPLEX CHALLENGES

INTRODUCTION

As an essential part of development of creative and innovative abilities, it is vital to discuss how to evaluate and interpret familiar with an imaginative approach. In this lecture, we specifically focus on two educational creative problem-solving models: Thinking Actively in a Social Context (TASC) and Creative Problem Solving (CPS) model.

THEORETICAL BACKGROUND

Thinking Actively in a Social Context (TASC)

It is a problem-solving model that is based on an assumption that it is possible to **train the brain** and to **improve the thinking capacity**. Wallace et al. (2012) proposes to follow eight stages to overcome any kind of challenges:

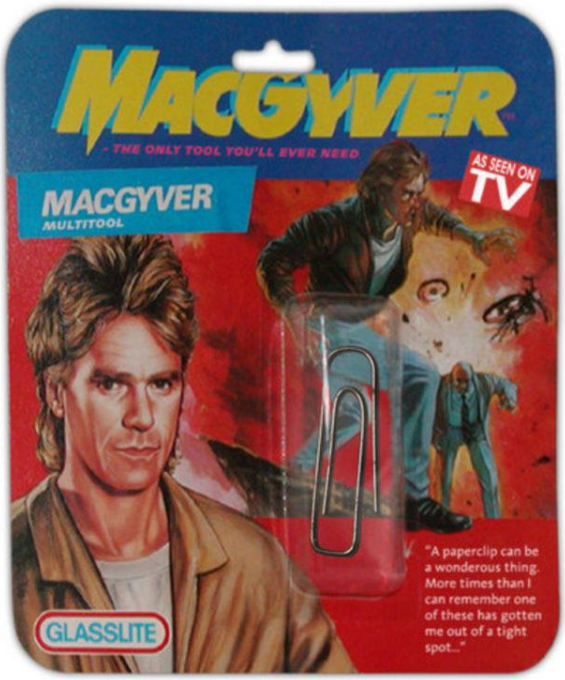
1. Gathering and organizing knowledge based on problems (What do I already know about this?)
2. Identifying problem-solving ideas (What is the task?)
3. Generating problem-solving ideas (How many ideas can I think of?)
4. Deciding and determining the best ideas in the problem-solving process (Which is the best idea?)
5. Implementing the ideas in the problem-solving process (Let's do it!)
6. Evaluating the results of problem-solving related to student knowledge (How well did I do?)
7. Communicating the results of problem-solving in the classroom to get advice and input (Let's tell someone!)
8. Learning from experience-reflecting the learning outcomes obtained during the problem-solving process (What have I learned?)

Creative Problem-Solving (CPS)

The Creative Problem-Solving program is an educational program developed by Osborn and Parnes. The **Creative Education Foundation** (Parnes, 1987; 1999) currently implements it. In its current structure, the program is operated in four stages. These stages are **Clarify** (make sure whether we are dealing with the right problem), **Ideate** (generate some ideas to address our challenge), **Develop** (formulation of ideas and creating solutions) and **Implement** (implement an action plan).

PRACTICAL EXAMPLE

MacGyver was a TV series that aired from 1985 to 1992. This TV series was so popular all around the world by its title character. He was shown to possess extraordinary skills to solve any kind of a problem that he encounters. The creator of this character, Lee D Zlotoff wrote a book in 2016, The MacGyver Secret: Connect to Your Inner MacGyver and Solve Anything, in order to share some tips about developing creative problem-solving skills.



Picture 7: Lee D. Zlotoff (2016, 18 October), Learn the "MacGyver Secret" to Problem Solving Under Pressure (Blog)

Source: https://makezine.com/2016/10/18/learn-the-macgyver-secret-to-problem-solving-under-pressure/

TASK FOR STUDENTS

By adopting the stages of Thinking Actively in a Social Context (TASC) model proposed by Wallace et al. (2012), try to formulate convincing arguments to make more people to wear face masks in public spaces during COVID-19 outbreak.

CONCLUSION

We need a creative perspective and an innovative outlook in order to overcome any kind of challenges we have faced in our whole life. This lecture outlines fundamental features of theories for innovative and creative practices in various problem-solving contexts. After learning to adopt some strategies for personal development, this lecture teaches us how to reframe our background and methodology to deal with complex challenges.

FEEDBACK QUESTIONS

1. *Explain how Thinking Actively in a Social Context (TASC) model helps people to overcome their problems?*
2. *How does Creative Problem-Solving (CPS) model operate? Explain each stage by giving examples.*

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Making Global and Local Connections

Maria Luisa Sierra Huedo – Cayetano Fernández Romero – Antonio Prieto-Andrés – Enrique Uldemolins Julve

MOTTO: „Asked where he came from, he said I am citizen of the world."
Diogenes of Sinope

LEARNING OBJECTIVES OF THE MODULE

The learning objectives of this module is that students will be able:

- to locate themselves in the new globalized world context and they will be able to see their duties within their local communities,
- to acknowledge what the meaning of being an active global citizen is,
- to prepare themselves to face the interconnected world challenges,
- to reflect on the process of globalization and to understand how such process affects important issues in the world and society structures,
- to acquire knowledge about the current challenges for our societies which are: population and migration; human rights in the 21st century; social justice, a more equal world is needed and sustainability and the Sustainable Development Goals (SDG).

Introduction to the Sustainable development and globalization

In the 1960s, Martin Luther King expressed a reality which has become usual nowadays. King said vividly "all life is interrelated. We are all caught into an inescapable network of mutuality; tied in a single garment of destiny. Whatever affects one directly, affects all indirectly. We are made to live together because of the interrelated structure of reality" (King, 2011, p. 70). He illustrated this deep connection according to which the decisions made in a single place can influence people living in a different place of the globe: "Did you ever stop to think that you can't leave for your job in the morning without being dependent upon most of the world? You get up in the morning and go to the bathroom and reach over for the sponge, and that's handed to you by a Pacific Islander. You reach for a bar of soap, and that's given to you in the hands of a Frenchman. And then you go into the kitchen to drink your morning coffee and that is poured into your cup by a South American. And maybe you want tea: that's poured into your cup by a Chinese. Or maybe you're desirous of having cocoa for breakfast, and that's poured into your cup by a West African. And then you have taste for toast, and that's given you in the hands of an English farmer, not to mention the baker. And before you finish eating

breakfast in the morning, you've depended on more than half the world. This is the way how our universe is structured" (King, 2011, 70-71).

After more than 50 years, the **interdependence is bigger**: information technologies, computers and telecommunications are modifying the material basis in every society; economies are interdependent, stressing the dependence networks among countries; a new relation between the economy, the State and the society has burst onto the scene. In this new relation we would highlight the interrelation among companies, the increasing weight of capital in comparison to labour, the individualization of labour relations and the loss of influence of the trade unions, the massive participation of women in the work force, though in subordinate conditions, the selective deregulation and the lowering of the welfare state to confront the increasing global economic competition to attract capital. Internationally, the so-called **Third World** is not monolithic anymore, and some enclaves of the **"global south"** have been integrated in the prosperous **global economy**. At the same time, the regions that are left disconnected see their differences increase with more prosperous places. This dynamic of inequality concerns also the populations and territories belonging to the traditional **"developed north"** which have witnessed the emergence of some enclaves of the so-called **"Fourth World"** within their borders (Castells, 1998). Together with the economic and technological changes, the social changes related with globalization have also been impressive. Probably the three most relevant are the **gender relations**, the **environmental awareness** and the emerging perception of a **vague global citizenship**. This global citizenship tries to forge its way despite the growing delegitimization of political traditions and the competition of the sectorial and local identities that give safety and meaning to millions of human beings whose cultural expressions, institutions, organizations and traditional identities are radically threaten by the increasing interdependence of the globalized world. Like never before, people are feeling in their own existence the prophetic statement made by King: "Whatever affects one directly, affects all indirectly" (King, 2011, p. 70).

The idea of a citizenship that goes beyond the nation-state is not completely new. The novelty lies in the global context in which this concept is suggested. Together with the deep and long-standing social changes which can be noticed (feminism,

ecologism), there is also a context of international treaties and agreements, global social movements, and an impulse to human rights that has relevant consequences for global citizenship. This global citizenship is struggling between a complementary perception of the traditional citizenship based on the nation-state and the alternative view that suggests a wider and more ground-breaking notion defined around a more cosmopolitan project less subject to the political limits of a single nation-state (Nussbaum, 2012). In any case, throughout this line of discussion and regardless the intensity conferred by each extreme, the common denominator of the debate perceives the global citizenship as a sense of belonging to a **larger community** and a common humankind. In practical terms, this idea highlights the political, economic, social and cultural interdependence of people living in this world and the interconnections between the local, the national and the global. **International migrations** can be a good example of this process.

The increasing interdependence between societies has stimulated the interest in the ideas related with the global citizenship and has additionally awaken a renewed attention for an active global citizenship education. As expressed in different international forums, global citizenship education has three key conceptual dimensions, which have obtained broad consensuses (UNESCO, 2015a). These conceptual dimensions are interrelated and concern the three learning contexts on which they are based: cognitive, socioemotional and behavioural (see Table 1).

Table 1: Key conceptual dimensions of the global citizenship education

Cognitive: Acquisition of knowledge, understanding and critical thinking about global issues and the interconnectedness/ interdependency of countries and different populations
Socio-emotional: Sense of belonging to a common humankind, sharing values and responsibilities, empathy, solidarity and respect for differences and diversity
Behavioural: Effective and responsible action in local, national and global contexts for a more peaceful and sustainable world

Source: UNESCO (2015a)

Global citizenship education aims to be a transforming factor, offering knowledge, skills, values and attitudes that learners need to be able to contribute for a more **inclusive**, **fair** and **peaceful world**. Global citizenship education appeals to understand the world we live in with rationality and trusts the possibilities of social action being able to drive transforming politics. Global citizenship education shares the strategic objectives of the **Education for All** (EFA) promoted by UNESCO. In that sense, it promotes a humanistic and holistic view of education as a fundamental human right that is essential for the personal and socio-economic development. This learning is understood as a process which has to be developed during life with the objective of empowering people so they achieve their right to education, satisfy their personal and professional expectations in a decent and healthy way, and contribute to the fulfilment of their objectives regarding the socio-economic development of their societies. "The contents of this learning should promote, among other things, the understanding and respect of human rights, inclusion, equity, social justice and cultural diversity, all of them essential components for peace, responsible citizenship and sustainable development" (UNESCO, 2015b).

UNDERSTANDING CURRENT GLOBALIZATION - CONNECTING GLOBAL AND LOCAL

INTRODUCTION

Globalization due to the high speed of technological development, as well as the new communication system, is generating deep changes and a new world structure that are indeed affecting different groups of people and diverse environments that apparently are really far away, such as the international versus the local one. The unifying worldwide process, that is implicit with **globalization**, may produce reactions against it and a defense for the particular and local spaces. Understanding these processes, how they work and how they affect the work context, labor issues, health services, education, living conditions and

housing as well as social mobility, among many other, are very important to focus yourself in this new world context, what Janet Bennett (2009) calls the new **personal intercultural positioning system**, used as a metaphor of the **global positioning system** (GPS). This new GPS is indeed fundamental to make sense of all the actions, either real ones or symbolic ones, within our societies and in a very special way in higher education. Education in general and even more higher education should help university students to develop the ability to know how to "move around" in local contexts but always with the international perspective in mind. As Suárez-Orozco & Sattin (2007) affirm the future professionals should be global citizens, following the famous Dubos' sentence "think globally, act locally", or in another word: **"glocal".**

THEORETICAL BACKGROUND

Globalization is a process that has its origins during the 1990s. In 1995 Thomas Friedman in his book *The World is Flat* already stated that the new world structure and reality is a "flat one", everybody is connected in a fluid freedom of fast communication, unthinkable only thirty years ago. Much has been written already about globalization, some authors predicted a much fairer world structure in where those living in third world countries will, like driving on a high way, have first world living conditions. Sadly but truly, we just replicated/reproduced the same world structure than before, thus we still have the **globalizers** and the **globalized** in a super-fast changing world situations, in where it is almost impossible to keep up with the pace (Suarez Orozco & Sattin, 2007).

All this is possible, thanks to the **Internet** and to a **fast communication system** that is the key element in this globalization process. Instant and fast communication with the help of technology are key to understand the process of globalization and increasing and overwhelming access to knowledge that we have nowadays (Sierra-Huedo, 2018). Friedman (2000) and Giddens (2009) agree in defining globalization as the fact that we live in just **one/unified world**, meaning that people and states are more **interconnected** than ever, and that we all depend much more on one another than ever before. Therefore, the process of globalization might be defined as a new international, interconnected system in where the economic capital, technology and

information are integrated in such a way that they form one unique global market, only one **global village or community** (Sierra-Huedo, 2015). According to Castells (1998), globalization weakens the functions of nation states, due to the new **global market economy**. How any state can react against its economy, crime, or communication is diminished by globalization and how globalized social protests occur (think as an example the case of Greta Thunberg and her climate action movement), as well as global terrorism or even the global situation of the COVID-19 pandemic.

PRACTICAL EXAMPLE

Think of fake news and how fast they spread is a result of globalization and the use of the Internet. In this interconnected global world with local problems/situations that become global such as climate change and pollution, terrorism, health crisis and migrations, university students need to be prepared to deal with this complexity, use critical thinking and intercultural communication to be able to get a realistic analysis and approach towards current issues and national problems (Sierra-Huedo, 2018). There are think tanks created to fight fake news - check out this website for example https://migracion.maldita.es.

TASK FOR STUDENTS

Make a table in where you compare the use of the Internet world wide in different regions such as Africa, Asia, Europe, Middle-East, North America, South America and Australia. Compare population and access. Source: Internet World Stats https://www.internetworldstats.com

CONCLUSION

The current challenges that the world faces are indeed interconnected. This is the result of globalization. The economic social and cultural sides of globalization can be perceived everywhere. The markets are all interconnected, this is a fact that was very obvious

during the past crisis with the fall of Lehman Brothers and its worldwide consequences. Communication is now **more accessible** than ever we can be informed about what is going on in Ghana or Guatemala, increasing the consciousness of events and news that take place far away. Thus, events that are local at the beginning they get global dimensions.

FEEDBACK QUESTIONS

1. *Are you aware how our world is interconnected?*
2. *Do you know where the products that you consume come from and who made them?*

POPULATION & GLOBALIZATION

INTRODUCTION

This section does not aim to carry out an in-depth study of the history of the population either an exhaustive path of its evolution. Nevertheless, due to **globalization** and **glocalization**, we think that presenting a series of reflections and challenges that people are facing is fundamental. These situations concern everyone: some of them, in which our ability to act is lower, are conditioned by external factors – **legislative measures**, **wars**, **epidemics**, as the one we are experiencing with COVID-19, and, contrarily, others, such as fertility and mortality, depend largely on the decisions and actions, life style or behaviours and, of course, on the goals, priorities and scale of values pursued by each one of us. As stated by Obaid (2009), "population matters because each person counts" (p. 15). In the following pages, we present a series of characteristics, firstly, of population, and secondly, of migrations which mean future challenges to human development and aim to encourage the reader to know, judge and act.

THEORETICAL BACKGROUND

Livi-Bacci (2007) defines population as "a group of persons, stably constituted, bound by reproductive links and identified by territorial, politic, legal, ethnic and religious features" (p. 9). It is estimated that the current world population is 7.7 billion people (United Nations, 2019a).

Nevertheless, this figure hides general trends, many times established by developed countries, since it covers up big present and future differences that pose different challenges to humankind (UNDP, 2019). We will try to address and classify these trends according to the classical ways of conducting population studies identified by Vergara and D'Entremont (1988):

- the analysis of **natural population movements** (how the persons and the different communities are born, grow and die),
- the analysis of **horizontal movements** (how people are distributed and travel around the territory),
- the analysis of **vertical movements** (how populations are structured) (p. 16).

Natural or growing movement

As stated by Vallín (1985), "In a population of living beings, inputs and outputs depend essentially on two different vital processes: **reproduction** and **degeneration**. It is life and death arithmetic" (p. 19). From this point of view, there are several challenges in the last decades that should be highlighted.

The first one is: Although the projection of natural population growth is positive, since it is expected to reach 9.7 billion in 2050 and around 11 billion in 2100 (United Nations, 2019a), the growth rate is very different depending on the countries and the regions. In fact, while in some regions, such as the Sub-Saharan Africa, it will experience strong growth, in others, like Europe or North America, this growth will slow down or decrease.

The second one is: despite the fact that the global fertility rate is 2.4 children (Population Reference Bureau, 2019), the continuous drop of fertility in the last

decades is a constant in many countries, decreasing to 2.1 children. That means that the **generational replacement** is **not guaranteed**.

But there are differences not only in the origin of life, but also when life is languishing. Even if mortality has globally decreased, and although the average life expectancy is at 72.6 years, life is on average 7 years shorter in the least developed countries than in developed countries. This is due, among other factors, to the strong impact on infant and maternal **mortality**, **violence** or **conflicts** (United Nations, 2019a).

Vertical movements: Structure of the population

Age is an element that determines the structure of the population. In that sense, the average age of the world **population** tends to **grow**, although it is worth noting that "Europe and Asia aging rapidly, while Africa is home to the World's largest youth population" (Population Reference Bureau, 2019). In this process, the cohort of the people over age 65 should be mentioned, since it is estimated that one in six people in the world will have this age or will be even older in 2050. That means 16% of the population, a percentage that will be larger in Europe and North America, reaching 25%, one in four persons (UN, 2019b).

Together with the ageing of the population, **gender inequality** is another challenge faced by human development. According to the UNDP (2019a), this inequality is one of the most rooted and impacts half of the population (49,585%).

Horizontal Movements: Migrations

The third way to address the population study would be through the natural movement of the population, that is, how people travel and where they are settled in the territory. On that subject, migrations are anything but new, which is healthy to remember. Migrations are discussed in the next section because of their relevance and presence in the global political and social agendas.

A world on the move: International migration

In this section, we would like to focus on **international migrants**, on the one hand, and on **forcibly displaced**, who do not always cross an international border, on the other hand. According to the International Organization for Migration (IOM) (2019), it is estimated that there are currently around 272 million international migrants, a very low percentage of the global population (3,5%). This human capital flow provides several advantages both to the countries of origin and to the destination countries (IOM, 2020). Nevertheless, migrations also **awaken suspicions** and **fears**, as it is deduced from the more and more restrictive national legislations on that subject.

PRACTICAL EXAMPLE

The main reason for migrating is economic. In fact, economic migrations constitute 60% of the total, according to the IOM (2018). But there are also other reasons derived from the human rights violations, such as conflicts and extreme poverty, or those originated from environmental causes (IOM, 2013). Nevertheless, whatever the causes or reasons, the country of origin, the scale or magnitude "Migration, whether internal or international has always been one of the forces driving the growth of urbanization and bringing opportunities and challenges to cities, migrants and governments" (IOM, 2020b). Besides, this source points out that in 1950, 30% of the global population was living in urban areas, and this percentage is expected to increase from 55% in 2018 to 60% in 2030 (IOM, 2020b).

Furthermore, this continuous and growing traffic of people poses challenges both for the countries of origin (because of the departure of working age people or people who can have children, what may provoke imbalances in the labour market and the structure of the population), and for the destination countries (where relevant debates arise regarding investment on health and education, especially in those countries with low and medium income, in which an important volume of migrants is assembled). With the aim of managing and giving a sustainable answer to the

migratory movements, the Global Compact for Safe, Orderly and Regular Migration and the Global Compact on Refugees were approved in 2018.

Think about the main issues regarding population and migration in your own country or geographical area, what are those that are mostly discussed?

TASK FOR STUDENTS

1. *Define using your own words: Migration, Irregular migration, Labour migration, Migrant, Refugee, Internally displaced, Right of asylum, Family reunification. Once you have your definitions, compare your answers with the ones from the International Organization for Migration (2019).*
2. *Answer the following questions: How many refugees are currently in the world? What are their main countries of origin? And the main destination countries? Indicate the refugees' countries of origin and their destination countries in a map. What conclusion/s do you reach?*
3. *Individual work: What is the Human Development Index? What does it measure? What are the best positioned countries in this ranking? And the worst? What is the position of your country? Are you surprised about this position? Why? Comment the results with your peers.*

Answer to task 1: *Glossary on Migration. Retrieved from* *https://publications.iom.int/system/files/pdf/iml_34_glossary.pdf*

Answer to task 2: *United Nations High Commissioner for Refugees. Global trends. Force displacement in 2018. Retrieved from* *https://www.unhcr.org/statistics/unhcrstats/5d08d7ee7/unhcr-global-trends-2018.html*

Answer to task 3: *UNDP (2019.) Human development Report 2019. Beyond income, beyond averages, beyond today: Inequalities in human development in the 21st century. Retrieved from* *http://hdr.undp.org/sites/default/files/hdr_2019_overview_-_english.pdf*

CONCLUSION

The different projections show a strong population growth in the following decades. Still, we have to be cautious, since these are only trends, that is, they are not definitive as they depend, among other elements, on **personal decisions** (having more or less children, lifestyle), on **politics** (wars) or **health issues** (diet, pandemics, etc.), which could modify them.

Their growth and their uncertainty pose a big challenge to the sustainable development, keeping in mind that inequalities may be present from our birth, and they may be amplified as time goes by, impacting on important issues of our life, and increasing our vulnerability.

Besides, the demographic imbalances concerning fertility or ageing of the global population will aggravate not only the labour force surplus in countries which have a young population structure, but also the lack of labour force in developed countries. It is quite a challenge and an opportunity regarding the sustainable demographic, social and economic growth.

In short, the **drop in fertility** and **birth rates**, **gradual ageing**, and **global population movements** will have relevant consequences on human development regarding different aspects, such as **access to education**, **health services**, **housing and work**. These are the challenges that should alert leaders and their policies. It will be necessary to reformulate the elements that support the welfare state, such as the working age or the taxes, together with politics that promote inclusion and social cohesion.

FEEDBACK QUESTIONS

1. *What factors do you think are the most influencing regarding the population growth?*

Answer: UN (2019). Peace, dignity and equality on a healthy planet. Global issues. Population. Retrieved from https://www.un.org/es/sections/issues-depth/population/index.html

ACTIVE GLOBAL CITIZENSHIP

INTRODUCTION

Based on the ancient term of **cosmopolitanism,** term already used by the Greek philosophers, global citizenship refers to citizens, who live in an **interconnected world**, and as such they have **global rights** and **duties**. Citizens who are interculturally competent and are able to live and work with a great diversity face global challenges that threat their existence and they affect all of us in a much more interconnected thread that some times we can even imagine.

THEORETICAL BACKGROUND

The ancient term of **cosmopolitanism** came from Diogenes. He talks about the oxymoron of the term, which implies *cosmos* which means the world, the universe and *politas* which means the city, in this case only the city of Athens (very local). The term presupposes that an individual has an intention towards transcendence with respect to one's culture and towards other's culture; a responsibility toward people based solely on the principal of their humanity (human rights and sustainability); an open-minded attitude toward other cultures. "The modern concept of cosmopolitanism and how you construct or educate students to become Cosmopolitan it happens through a process, educating for diversity and pluralism" (Held, 2010; Nussbaum, 2005).

The basic concept of global citizenship is an integration of **education for development**, **human rights education**, **environmental education**, **peace education**, **intercultural education** and **gender education**. It is indeed one **holistic education** that will contain and deal with this very narrow relationship among all those educations mentioned above. As it has been exposed above, we live an interconnected world in where there is an every day increasing connection among all human-beings, no matter in which part of the world they might live in, all with the same rights and living in a world that is fighting for its **sustainability** (Boni & Pérez-Foguet, 2006).

According to Sierra-Huedo (2015), global citizenship is an orientation that universalizes the **classic concept of citizenship**, which obviously has certain rights and duties within a **nation-state**. The main question here is what happens when these created „nation-states" borders are not as they used to be? When we live in a state that it is the whole world, and the world that is indeed "flat"? What happens is, that the intellectual context in where a global citizen lives and his/her sense of connection and belonging expands to the **whole humanity**. Thus, global citizenship is not only a mental static state, but a **dynamic world vision** within **a feeling of responsibility** towards topics such as: **social** and **economic justice** at a multilevel: **local**, **national** and **international** (Sierra-Huedo, 2015). **Global citizenship** could be defined as the ability of seeing oneself and the world that surrounds you, to be able to compare and contrast, the ability to see **plurality** and **diversity** as a result, and to have the ability to balance acknowledging our own reality with the other's realities. There is no doubt that in order to be able to compare other people's realities, we need to first know the diversity that is around us and to develop critical thinking (McIntosh, 2005; Sierra-Huedo, 2015). The main common themes that a definition of global citizenship groups are: understanding our closest and local milieu and connecting it with the **global context**. Dr. Banks explains global citizenship as **knowledge**, **attitude**, and **skills** required to function within and beyond any **cultural communities** and **borders** (Globalization 101, 2020). Therefore students need to understand how their own closest reality influences and affects other nations, as well as the impact that international events have on their daily lives. A global citizen is someone who cares and knows on what is going on in the world developing empathy towards the multicultural other (Nussbaum, 2005).

PRACTICAL EXAMPLE

With the help of the following table, students can prepare guidelines how abilities and characteristics can be can be acquired.

Table 2: Global citizen's skills

Abilities & Characteristics
To be able to make personal election and find own way of thinking
To be conscious that we all are cultural beings and therefore others are as well cultural beings
To be conscious of one self , our role in our communities and/or societies and the roles of other's in their societies and communities
To be capable to ractice cultural empathy
To cultivate responsibility in decision making processes
To participate in an active way in political and social community life in where one lives

Source: Sierra-Huedo, 2015

TASK FOR STUDENTS

During one/two weeks you would have to check where all the clothes that you wear are made. Once you have that list, look into the labor conditions in those countries and reflect about how your purchases have a positive or negative impact in those people's lives.

CONCLUSION

We live in a world of overlapping communities deeply embedded with each other. The current challenges that we have right now, require that we educate engaged and compromised citizens, who are socially responsible. This is why, it is crucial that we educate our students to become ethical, active global citizens. Through education our students will be able to start being aware of their reality within their **closer community** (Sierra-Huedo, 2015).

FEEDBACK QUESTIONS

Green & Whitshed (2015) as well as Sierra-Huedo (2013) make a list of learning outcomes and teaching elements that could be introduced in a curriculum or university course that may encourage educating global citizens and they will help internationalized the curriculum. Reflect about how many of these elements are present in your courses:

Table 3: Learning outcomes & teaching elements

Green & Whitshed (2015)	**Sierra-Huedo (2013)**
Comprehending the global nature of economic, political & cultural issues	Infusing courses with international content
Showing interculturally inclusive behaviour	Using comparative approaches in research projects & teaching
Understanding the process of change	Interdisciplinary studies & mixing students with interdisciplinary backgrounds
Engaging critically with global knowledge	Studies focused on civilizational approaches
Realizing that knowledge is constructed differently in diverse cultures	Intercultural studies
Awareness of one's own cultures and perspectives	International & development studies
Being able to identify ethical issues in their local context as well as in international or intercultural contexts	Important role of other languages
Value linguistic and cultural diversity and seeing it as a richness not as a problem	Internationalization of professional schools and pre-professional ones
Applying critical thinking to problems with an international/intercultural dimension	Faculty & staff development in international area
Thinking and reflecting critically about one's own cultural identity and its social construction	Involvement of students and faculty in internships with an international perspective (abroad or local)
Recognising diverse and cultural perspectives on the same issues	International institutional linkages and networking
Working on developing global imagination	Involvement of students

Source: Sierra-Huedo

HUMAN RIGHTS

INTRODUCTION

Every person has some rights that should be recognized by society and by positive law (the applicable law in a particular society). The person came prior to the State. He/she has some needs and natural abilities that must be used to get the full development of his/her potentialities and allow his/her development as a human being with full respect for his/her human dignity.

All human beings, due to these needs and natural abilities, have some rights that authorise them to request others their respect and to demand the State to recognise and guarantee the achievement of the needed values for the progress and the full development of the human being.

According to Pérez Luño (as cited in De Castro, 2003, p. 124), **human rights** can be defined as: "A group of faculties and institutions that, in each particular historical moment, define the requirements for the human **dignity**, **freedom** and **equity**, which should be positively recognised by national and international legal systems".

THEORETICAL BACKGROUND

The imperative wish of freedom opposite to the absolute power of the monarchy and the nobility did not leave a mark on the European society until the 18th century. This wish came true in the alliance between the common people and the bourgeoisie to fulfil their objectives of freedom. This alliance crystallised in the liberal revolutions, whose fundamental ideology was afterwards replicated in the subsequent bills of **rights** and **constitutions**. At this point the human rights were fundamentally the expression of an aspiration to obtain **formal freedom**. Nevertheless, far from promoting the desired **emancipation** of the human being, they kept the pre-existing social and economic differences among people, since the starting situation was not modified by mechanisms, which allowed **equal opportunities**. There was in that moment the first contradiction between the **concept of human rights**, universal by definition, that is, equal to all human beings, and their real and effective attribution, which was limited to **citizenship**, being initially citizenships a reduced number of persons, who were men with the nationality of the State, owners, or people who fulfil the requirements, especially economical (Prieto-Andrés, 2015).

In the **liberal state**, workers were in a situation of vulnerability, providing workforce in subhuman conditions that barely guaranteed their own personal survival, which caused a gradual feeling of discontent regarding the prevailing politics in the first half of the 19th century. The idea of needing social rights was gradually forged and

included in the constitutional texts from the mid-19th century to well into the 20th century.

Another important aspect to keep in mind is that, during the second half of the 19th century and the first half of the 20th century, individuals reached an **identification** with their **nation** like never in history. The tension between the universalism of the rights and the particularism of belonging to a nation-state is destined to be totally solved in favour of the last. Already in the 20th century, the European nation-states perceived their internal diversity more as a problem to face than as an enriching element. This was reflected in the international peace treaties signed after World War I which tried to obtain homogeneous states from the ethnic and cultural point of view.

Nevertheless, the **hypernationalist trend** that prevailed in that period ended with the triumph of the fascisms, whose main representatives, as we know, were Germany, Italy and Japan. With them, individuals lost their relevance and remained totally subordinated to the nation-state.

During World War II there was a relevant ideological reaction which reinforced human dignity and the inviolability of human rights. People were convinced that implementing political regimes for protecting human rights was necessary for living in peace. The tragic experience of **totalitarianism** highlighted the need to give prominence to the absolute and pre-state character of the rights. For that reason, the criteria for giving rights could not be left only to the nation-state. In contrast, the direct relation between rights and the person become the basis and the legitimization criteria of the new constitutional states.

This requirement was initially fulfilled in the **United Nations General Assembly**, which promulgated the **Universal Declaration of Human Rights** (United Nations General Assembly, 1948). The difficulties to approve this kind of document in this historical moment were mainly derived from the ideological and **political conflict** between the **socialist block**, led by the Soviet Union, and the capitalist block of the United States and its western allies. For the Soviet Union, economic, social and cultural rights were those which should be respected, while disparaging civil and political rights. Besides, the state sovereignty was very important for the socialist

block, so human rights should be dealt within the context of the states. Contrarily, the western block especially defended civil and political rights and was in favour of protecting human rights outside the internal jurisdiction of the states. Consequently, the resulting Declaration constituted a balance, a consensus among the western liberal and the Marxist approaches.

Nevertheless, the Declaration needed a more precise international legal regulation, which was expressed in two international treaties, the International Covenant on Economic, Social and Cultural Rights (1966) and the International Covenant on Civil and Political Rights (1966), to which other subsequent tools concerning particular communities (women, children, genocide victims, etc.) were added.

Human rights are usually classified in several generations, considering the historical evolution previously mentioned. Thus, the rights related with the liberal concept of the negative liberty, together with the principle of equality before the law, that is, the individual **civil rights** (such as freedom, right to life, to property and to safety) were included in the **first generation** (Bailón, 2009). The political rights, that is, rights to participate or to take **collective action** (such as the right to vote, freedom of press or freedom of assembly) were included in the **second generation,** which frequently is merged with the first. And the universal suffrage was gradually broadened (firstly, to men, and then, to women) throughout the 20th century.

Since the workforce was more and more focused on industrial activity, causing insalubrity, diseases, deaths and terrible working conditions for many workers, another group of rights surged in the **third generation**. These were the **social**, **economic** and **cultural rights** whose main display was the so-called **Social Welfare State**.

In the last decades, new demands regarding the **right to development**, to **self-determination**, to **peace**, to a **healthy environment**, to **technological freedom**, and to **identity** surged in the social segments of several countries. These rights are called **solidarity rights** or **collective rights**. This **fourth generation** of rights is the result of the new demands expressed by the citizens, on the one hand, and of the new scientific knowledge and its implementation to different spheres of human life, on the other hand.

The United Nations Declaration on Human Rights Education and Training defines "human rights education as comprising all educational, training, information, awareness-raising and learning activities aimed at promoting universal respect for and observance of all human rights and fundamental freedoms and thus contributing to, inter alia, the prevention of human rights violations and abuses by providing persons with knowledge, skills and understanding and developing their attitudes and behaviors, to empower them to contribute to the building and promotion of a universal culture of human rights" (United Nations General Assembly, 2011).

According to the Council of Europe (n. d.), **human rights education** – learning about, through and for human rights – is therefore essential in preventing human rights violations and in making **democracy** a **sustainable way of life**. This is especially relevant to children and young people. Human rights education is in itself a right, enshrined in Article 26 of the Universal Declaration of Human Rights. The Charter on Education for Democratic Citizenship and Human Rights Education adopted by the Committee of Ministers in 2010 calls upon the member states to provide every person within their territory with the opportunity of education for democratic citizenship and human rights education, by all means of education, including non-formal education. It also recognises the irreplaceable role of non-governmental organisations and youth organisations in this process.

PRACTICAL EXAMPLE

Check some of the following webpages to see some examples and educational units created for practicing in class.

Resources for teachers:

Council of Europe (n.d). Compass: Manual for Human Rights Education with Young people. Retrieved from the Council of Europe web site: https://www.coe.int/en/web/compass

EQUITAS (n.d.). Equitas Tools for Education Website. Retrieved from the Equitas web site: https://equitas.org/tools-for-education/find-a-tool/

Kingston, Lindsey N. (Ed.) (2018). Human Rights in Higher Education. London: Palgrave Macmillan. ISBN 978-3-319-91421-3.

Office of the High Commissioner for Human Rights (United Nations Human Rights) (n.d.). Training and Education Materials. Retrieved from the Office of the High Commissioner for Human Rights web site: https://www.ohchr.org/EN/PublicationsResources/Pages/TrainingEducation.aspx

OSCE Office for Democratic Institutions and Human Rights (ODIHR). (2009). Human Rights Education in the School Systems of Europe, Central Asia and North America: A Compendium of Good Practice. Warsaw: OSCE Office for Democratic Institutions and Human Rights. ISBN 978-92-9234-765-9. Retrieved from the Office for Democratic Institutions and Human Rights web site: https://www.ohchr.org/Documents/Publications/CompendiumHRE.pdf

United for Human Rights (s.d.). Retrieved from the United for Human Rights web site: https://www.humanrights.com/

University of Connecticut (n.d.). Teaching Human Rights. University of Connecticut (USA). Retrieved from the University of Connecticut web site: https://teachinghumanrights.uconn.edu/browse-all-syllabi/

University of Minnesota (n.d.) Human Rights Resource Center website. Retrieved from the University of Minnesota web site: http://hrlibrary.umn.edu/edumat/activities.shtm

TASK FOR STUDENTS

Please discuss in pairs if a racism means a violation of human rights? Why?

CONCLUSION

Human Rights Educators USA. (n.d.) consider that human rights education helps develop communication skills and critical thinking, which are essential for **democracy**. It provides multicultural and historical perspectives in favour of **justice** and **dignity**. Additionally, human rights education involves the heart as well as the mind. It challenges students to wonder what the human rights mean and promotes informed, **nonviolent action**. It also

promotes the understanding of the complex global forces that commit abuse, and how these forces can be abolished or avoided.

FEEDBACK QUESTIONS

1. *How could you promote human rights in some subject which you study?*
2. *Please explain what "Human Rights Education" means.*
3. *Please give some examples of countries or political systems, where the economic, social and cultural rights were not respected.*

SUSTAINABLE DEVELOPMENT AND CLIMATE CHANGE

INTRODUCTION

The term **„sustainability"** (as well as other concepts associated with this idea, such as **sustainable development**) was internationally established in the 90s, after the United Nations Conference on Environment and Development that took place in Rio de Janeiro in 1992.

The main idea that lies beneath the notion of "sustainability is that a society should not spend more natural resources than those that are renewed, so the following generations have a similar quantity of resources." Therefore, the ability of the ecosystem to duplicate depends on the limits within which a particular society decides to develop its activities and economy. Some years before the Rio Summit, in 1987, an influencing report called **Our Common Future** (CMMAD, 1989) that was expressing the same ideas, had been published. The also called **Brundtland Report** suggested a definition of sustainability that has become one of the most quoted and discussed. The report links sustainability and development and defines "sustainable development" as the development that "meets the needs of the present without compromising the ability of future generations to meet their own needs." Afterwards, the authors of the report explain that sustainable development, under this definition, contains two fundamental concepts: on the one hand, the concept of

"**needs**", the essential needs of the poor, to which overriding priority should be given and, on the other hand, the idea of **limitations** imposed on the environment's ability to meet present and future needs. This definition of sustainability redirects the mainly environmental perspective, which had been the dominant point of view until then, towards a more complex approach in which the sustainability of a society depends on guaranteeing not only the appropriate condition of the ecosystem, but also on the proper working of its economic and social dimensions. The pillars of the sustainability are these three elements: the **environmental**, **the economic** and **the social** one. And the sustainable development depends on the dynamic balance between them. The economic dimension gives the society the production of wealth and the output of goods and services that guarantee the material welfare, the social dimension safeguards the equity in the distribution of opportunities and resources and promotes the inclusion of all the members of the society: the environmental dimension guarantees that the society's actions, that is, the way in which the socially defined needs are satisfied, is compatible with the natural integrity of its ecosystems (Uldemolins, 2015).

THEORETICAL BACKGROUND

There are two dimensions in the idea of sustainable development that should be distinguished to avoid, as much as possible, the misunderstandings that this term may provoke. On the one hand, the sustainable development implies a way of understanding the world in which the interaction between the economic, social, environmental and political elements are key. In this sense, sustainable development can be compared to a map or a guide that allows us to understand, to a certain extent, the complex reality of interactions with which we get along. But, on the other hand, the notion of sustainable development involves a regulating vision of the world. This way of understanding the sustainable development is dominated by the ethical impulse that defines the desired society. Accordingly, a sustainable society would be the one where its current and future citizens' welfare would be guaranteed. There would not be social groups or marginalised people, it would be **environmentally sustainable** (it would not use

more resources than those that could be renewed) and would have a reasonably good governing. If reaching this sustainability model is desired, the way of understanding sustainable development entails a series of key issues that should be faced: extreme poverty, inequality, social mobility, discrimination (gender, ethnic, religious, etc.), social cohesion, natural environment and governance.

Consequently, sustainable development presents a program of collective transformation that **eradicates extreme poverty**, **reduces inequalities** between the poor and the rich, **ensures social mobility** guaranteeing equal opportunities, **eliminates all forms of discrimination**, **promotes trust, solidarity and inclusion** among people, **guarantees a good management of natural resources** (water, biodiversity, atmosphere) and restores **trust of governments and public institutions** (Sachs, 2015).

Therefore, facing the sustainability challenge means deeply changing the social and economic values on which our current society is unconsciously based. But it should also oblige us to review the ethical principles which rule the behaviour of western civilization that is excessively founded in an anthropocentric perspective. Sustainability requires a change in the way we see our relations with the **nature-system**, the **life-system** and the **earth-system**. Human beings participate in relations **network** that links **all living things** in our planet. If I contaminate or waste energy, there will be an impact on my health and on both my future comfort possibilities and those of my neighbours, even if they live outside my territory. Sustainable development implies protecting the **vitality** and the **integrity of ecosystems** and, at the same time, being responsible (able to answer, to offer solutions) for ethical imperatives regarding the poor, the needy and vulnerable people.

The **Sustainable Development Goals** (SDGs) point to that direction, as hereunder explained. In September 2015, the United Nations General Assembly adopted the 2030 **Agenda for Sustainable Development** (UN, 2015). Within this new world framework, the idea of sustainable development was marked as the focus of the collective action by the international community. The 2030 Agenda contains 17 Sustainable Development Goals (SDGs). This extraordinary program of transformation towards a sustainable path was defined after the United Nations

Conference on Sustainable Development (Rio+20) that took place in Rio de Janeiro, Brazil, in June 2012. It was a three-year process, which involved all the Member States of the United Nations. During this process, thousands of different social organizations and governmental agencies participated in national studies. Additionally, it is important to remark that the SDGs followed the path started by the United Nations with the **Millennium Development Goals** (MDGs), which constituted the development agenda of the international community until 2015. In that sense, the SDGs, although giving continuity to the performance started by the United Nations with the new millennium, presents also important novelties both in their aims and their approach. In particular, the SDGs and their 169 targets significantly broaden the topics addressed. While the MDGs were very focused on **social aspects**, the SDGs broaden their scope to address **economic**, **environmental** and **governing issues**. The main difference presented by the SDG is their **universal aspiration**; they focus on **global challenges** that concern humankind. The SDGs are conceived as global goals in which all the States and societies should be involved, independently of their relative development level, nationally and internationally. The traditional distinction between developed and poor countries loses the relevance it had had for the practical implementation of the MDGs. Now what matters is the contribution made by each country to reach the common goals. The SDGs are **universal**, **transforming** and **inclusive**; they describe the main challenges that the States and their societies should face in the following years until 2030.

The aim of the 17 SDGs (see https://www.un.org/sustainabledevelopment/) is guaranteeing a sustainable, peaceful, prosperous and fair life for everyone, now and in the future. The goals address global challenges which are crucial for humankind's survival; they fix the environmental limits and the critical thresholds for the use of natural resources; and they recognise that poverty eradication should encompass economic development. They also refer to a series of social needs, including **education**, **health**, **social protection** and **work opportunities** and, at the same time, suggest methods to alleviate and adapt to the **climatic change** and protect the environment. The SDGs keep in mind and suggest methods to finish with the so-called systemic barriers to the sustainable development, such as the inequality, the

unsustainable consumer patterns, the weak institutional power and the degradation of the environment.

PRACTICAL EXAMPLE

Sustainable Development & Sustainable Development Goals.

Resources for teachers:

BookWidgets: https://www.bookwidgets.com/blog/2019/12/10-ready-to-use-lesson-plans-on-the-sustainable-development-goals

World largest lesson: https://worldslargestlesson.globalgoals.org/es/who-we-are/

https://worldslargestlesson.globalgoals.org/es/global-goals/no-poverty/

Be the change: https://bethechangetakethechallenge.wordpress.com/

Teach SDG's: http://www.teachsdgs.org/

Education for Sustainable Development Goals: learning objectives:

https://en.unesco.org/themes/education/sdgs/material

Picture 1: Seventeen Sustainable Development Goals
Source: www.researchgate.net

TASK FOR STUDENTS

Think, in which countries the major population growth will mostly happen in the very close future. Explain why. Explain how they propose to achieve their targets.

Choose one SDG (for example, SDG 4: Quality education or SDG 5: Gender equality). Discuss with the learners how the selected SDG is related to other SDGs.

Study SDGs from a local perspective. Review the SDGs and select the one/s that the participants consider impact in a more urgent way on the community or place where they live. Explain why this/these SDGs is/are especially relevant for your community. Identify potential action guidelines to achieve one of the targets associated with that goal. Think about how personal actions (what can I do?) and collective actions (what can be done by our community?) can be related. What should other agents (companies, local government, university, trade unions, etc.) do to achieve the selected goal?

Answer: UN, 2019. 10 Key Findings, Retrieved from https://population.un.org/wpp/Publications/Files/WPP2019_10KeyFindings.pdf

CONCLUSSION

The SDGs offer a series of **guidelines** and a **framework for our behaviours** and actions in order to think and make the world a better place. The 17 SDGs deal with a great variety of topics and many issues that could be addressed **locally**, **nationally** or **globally**. **Ending poverty** in all its forms everywhere (SDG 1), **ending hunger**, achieving food security and improved nutrition and promoting **sustainable agriculture** (SDG 2), **reducing inequality** within and among countries (SDG 10), or taking urgent action to **combat climate change** and its impacts (SDG 13), are all issues that can be addressed locally, nationally and globally. All the SDGs are interrelated and work together: it is very difficult to achieve one of them individually, without the support of the other ones. Apart from being universal and interconnected, the SDGs are inclusive. They come

with the promise of “leaving none behind”, that is, a single goal will not be achieved if all the goals are not fulfilled (OXFAM, 2019).

FEEDBACK QUESTIONS

1. *When and where was the concept of the sustainable development formulated?*
2. *Please name at least five goals of the Sustainable Development.*
3. *What do you personaly do contribute to sustainable development? Please name at least five examles.*

CASE STUDY

Anna was a political science major at a large state university in the Midwest. Upon graduation she went into business, getting a promising job with a large firm. After twelve years she had risen to a middle-management position. One day, her firm assigned her to the newly opened Beijing office. What did she need to know, and how well did her education prepare her for success in her new role? In a middle-management position, Anna is (working with both Chinese and American employees, both male and female. She needs to know how Chinese people think about work (and not to assume there is just one way. When she started working in China she realized that there were things at work that she did not agree with. It was hard for her to make friends and to establish any kind of connection with male coworkers at her firm. In other words, she was not feeling herself and she even thought of quitting her job and returning back home to the USA. She needs to know how cooperative networks are formed, and what misunderstandings might arise in interactions between Chinese and American workers. Knowledge of recent Chinese history is important, since the disruptions of the Cultural Revolution still shape workers' altitudes. Anna also needs to consider her response to the recent policy of urging women to return to the home, and to associate practices of laying off women

first. This means she should know something about Chinese gender relations, both in the Confucian tradition and more recently. She should probably know something about academic women's studies in the United States, which have influenced the women's studies movement in rights and about to, what extent it is either legitimate or wise to criticize another nation's ways of life. In the future, Anna may find herself dealing with problems of anti-African racism, and with recent government attempts to exclude immigrants who test positive for the human immunodeficiency virus. Doing this well will require her to know something about the history of Chinese altitudes about race and sexuality. It will also mean being able to keep her moral bearings even when she knows that the society around her will not accept her view. The real-life Anna had only a small part of this preparation—some courses in world history, but none that dealt with the general issue of cultural variety and how to justify moral judgments in a context of diversity; none that dealt with the variety of understandings of gender roles or family structures; none that dealt with sexual diversity and its relationship to human rights. More important, she had no courses that prepared her for the shock of discovering that other places treated as natural what she found strange, and as strange what she found natural. Her imaginative capacity to enter into the lives of people of other nations had been blunted by lack of practice. The real-life Anna had a rough time getting settled in China, and the firm's dealings with its new context were not always very successful. As a persistent and curious person, however, she stayed on and has made herself a good interpreter of cultural difference. She now plans to spend her life in Beijing, and she feels that she brings a valuable contribution to the firm.

Two years ago, after several years in China, already in her late thirties, Anna decided to adopt a baby. Through her by then extensive knowledge of the Chinese bureaucracy, she bypassed a number of obstacles and quickly found an infant girl in an orphanage in Beijing. She then faced challenges of a very different kind. Even in the most apparently universal activities of daily life, cultural difference colors her day. Her Chinese nurse follows the common Chinese practice of wrapping the baby’s limbs in swaddling bands to immobilize it. As is customary, the nurse interacts little with the child, either facially or vocally, and brings the child immediately anything it

appears to want, without encouraging its own efforts. Anna's instincts are entirely different: she smiles at the baby, encourages her to wave her hands about, talks to her constantly, wants her to act for herself. The nurse thinks Anna is encouraging nervous tension by this hyperactive American behavior; Anna thinks the nurse is stunting the baby's cognitive development. Anna's by now a sensitive cross-cultural interpreter, is able to negotiate between mother and nurse and devise some plan for the baby's development that is agreeable to all. To do this, she has had to think hard about the non-universality and non-naturalness of such small matters as playing with a baby. But she has also had to think of the common needs and aims that link her with the nurse and the nurse with her own mother. Her university education gave her no preparation at all for these challenges. Asked where he carne from, the ancient Greek Cynic philosopher Diogenes replied, "*I am a citizen of the world.*" He meant by this that he refused to: be defined simply by his local origins and group memberships, associations central to the self-image of a conventional Greek male; he insisted on defining himself in terms of more universal aspirations and concerns. The Stoics, who followed his lead developed his image of the kosmopolités, or world citizen, more fully arguing that each of us dwells, in effect, in two com-munities—the local community of our birth, and the community of human argument and aspiration that "*is truly great and truly common.*" It is the latter community that is, most fundamentally, the source of our moral and social obligations. With respect to fundamental moral values such as justice, we should regard all human beings as our fellow citizens and local residents. This attitude deeply influenced the subsequent philosophical and political tradition, especially as mediated through the writings of Cicero, who reworked it so as to allow a special degree of loyalty to one's own local region or group. Stoic ideas influenced the American republic through the writings of Thomas Paine, and also through Adam Smith and Immanuel a major formative influence on both Emerson and Thoreau. This form of cosmopolitanism is not peculiar to Western traditions. It is, for example, the view that animates the work of the influential Indian philosopher, poet, and educational leader Rabindranath Tagore. Tagore's own cosmopolitan views were influenced by older Bengali traditions and then, he self-consciously melded them with Western cosmopolitanism.

It is also the view recommended by Ghanaian philosopher Kwame Anthony Appiah, when he writes, concerning African identity: "*We will only solve our problems if we see them as human problems arising out of a special situation, and we shall not solve them if we see them as African problems generated by our being somehow unlike others.*" But for people, who have grown up in the Western tradition it is useful to understand the roots of this cosmopolitanism in ancient Greek and Roman thought. These ideas are an essential resource for a democratic citizenship. Like Socrates' ideal of critical inquiry, they should be at the core of today's higher education (Nussbaum, 2015).

TASK FOR STUDENTS

1. *Explain the cultural patterns and models of the two parties involved.*
2. *Analyse the societies of the two parties involved from a historical and demographical point of view following the analysis structure that it is shown in the study of a society from its historical characteristics to its demographic reality.*

		USA CULTURE	***CHINESE CULTURE***
CULTURAL FOUNDATIONS	*Politics*		
	Family		
	Economy		
	Education		
DEMOGRAPHIC REALITIES	*Natural Movement*		
	Vertical Movement		
	Horizontal Movement		

A) Explain Anna's vision of human rights taking into account universalism vs particularism

B) Describe what kind of education and/or training Anna should have had to face successfully her working experiences in China.

C) And finally, answer to the following question: What does it mean for you to be a global citizen?

CONCLUSION

The main question at this point will be: How do we approach current world challenges? What is our responsibility towards our planet, our common home? There is no doubt that our responsibilities are not limited to our local and nation-state contexts, not any more, because we are interconnected and everything we do has an impact in the whole world. Acquiring such perspective requires very specific learning and education. Being able to connect global issues with local ones, it is important to become an active global citizen with responsibilities and duties that we may acknowledge through critical thinking and developing **intercultural competences**. In this chapter, we have approached global issues that are key in understanding our complex global context and thus, should be part of our basic knowledge in order to become global citizens. As started this chapter with Dr. King's reflection, we will finish with him as well, Martin Luther King affirmed, *"We must learn to live together as brothers (and sisters, this is mine) or perish together as fools".*

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Using Technology as a Tool for Learning

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MOTTO: „The real power of interactive technologies is that they let us learn in ways that aren't otherwise possible or practical."
David Lassner

INTRODUCTION TO THE TOPIC

The module 'Using technology as a tool for learning' introduce the students in the concept of digital learning. It is oriented particularly to the competence-based learning, going through the main steps of its implementation: fining / development of the competence framework and an individual learning plan, using digital tools for their representation / tracking and implementation.

In this module they are presented different tools, supporting the whole process – very specialized as well as tools for general use, which could be easily adapted for learning. Some of the tools are used usually by trainers to design the process but understanding of their purpose and how they are used in the design of digital learning environment provide learners with background and abilities to use them for more efficient and effective learning. The other tools are suitable for design, tracking and evaluating results of self-learning process.

COMPETENCES BASED LEARNING

LEARNING OBJECTIVES

After completing this lesson, the learners will:

- understand the meaning of the 'competency-based learning',
- value the importance of learning goals,
- identify their own learning needs and capacities on the base of professional competence profiles,
- choose individual learning strategies.

INTRODUCTION

There are different points of view on what **competency-based learning** actually means, and how it should ideally be used or function. It is

traditionally thought of in terms of skills and vocation, but CBL can be entirely "academic" as well.

In this module we will understand competency-based learning as a type of education that creates competencies needed for improved productivity and focuses on **outcomes** as well as the learners' **real-world performance**. We will keep also its main characteristic – focus on mastery. The method ensures visibility and recognition of the result – **knowledge**, **skills**, and **attitudes**; immediately as they have been achieved and while the learner continue learning.

The competency-based learning provides opportunities for flexibility, as learners are able to move at their own pace. The method adds level of personalisation, supporting students with diverse knowledge backgrounds, literacy levels, and other related aptitudes. This also the challenge to the educators and learners, because the success of the methods implementation depends on the correct **identification** and **agreement** upon the most important competencies, how to best assess them, and how to support learners.

In this chapter we will be familiarized with the concept of 'competence' and the importance of the competence frameworks for further learning process.

THEORETICAL BACKGROUND

1. Competences based learning/instruction

For the purpose of this module we will use the definitions of **"knowledge"**, **"skills"**, **"competence"**, and other, as stipulated in **"Definitions"** of the **Council Recommendation** of 22 May 2017 on **the European Qualifications Framework for Lifelong Learning** of the Council of the European Union, 2017.

The Council (Council of the European Union, 2017, p. 20) stipulates that:

- **KNOWLEDGE** means the outcome of the assimilation of information through learning. Knowledge is the body of **facts**, **principles**, **theories** and **practices**

that is related to a field of work or study. In the context of the EQF[1], knowledge is described as **theoretical** and/or **factual**;

- **SKILLS** mean the ability to **apply knowledge** and use know-how to complete tasks and solve problems. In the context of the EQF, skills are described as **cognitive** (involving the use of logical, intuitive and creative thinking) or **practical** (involving manual dexterity and the use of methods, materials, tools and instruments);
- **RESPONSIBILITY AND AUTONOMY** means the ability of the learner to apply knowledge and skills autonomously and with responsibility;
- **COMPETENCE** means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development;
- **LEARNING OUTCOMES** means statements regarding what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and responsibility and autonomy;
- **QUALIFICATION** means a formal outcome of an assessment and validation process which is obtained when a competent authority determines that an individual has **achieved learning outcomes** to given standards.

2. The European Qualifications Framework for lifelong learning (EQF)

The reason for including here a text about the European Qualifications Framework for lifelong learning (EQF) is that the EQF is an overarching educational construction for EU that with its construction (a table with eight levels of achievements and three types of achievements – knowledge, skills and competences), not only makes compatible all levels of education in all the EU educational systems, but also is used as a common cohesion structure and framework when describing in detail the different levels and descriptors of any of the **21st century competences**, developed in the respective EU documents and publications. The Commission, with the support of an **EQF Expert Group**, proposed an **8-level framework** based on learning outcomes

[1] EQF - European Qualification Framework

aiming to facilitate the **transparency** and **portability of qualifications** and to support lifelong learning (European Commission, 2008).

A key point in the EQF is that the eight reference levels of the Framework are described in terms of learning outcomes, thus assuring the opportunity to make possible the comparisons between the educational systems of the EU countries, which otherwise are quite different and diverse (e.g. at least by the duration of study of one and the same educational levels).

Each learning outcome in the EQF (Table 1) is defined "as a statement of what a learner knows, understands and is able to do on completion of a learning process". The EQF therefore emphasises the results of learning rather than focusing on inputs such as length of study. **Learning outcomes** are specified in three categories – as knowledge, skills and competence (ibid., p. 3). The **competence** in the EQF was named broadly as **"Responsibility and autonomy"** but each EU country is able to make this category more specific or manifold, depending on its own educational system's peculiarities and strategies.

Table 1: EQF excerpt - description for the Higher Education levels

	Knowledge	**Skills**	**Responsibility and autonomy**
	In the context of EQF, knowledge is described as theoretical and/or factual.	In the context of EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments).	In the context of the EQF responsibility and autonomy is described as the ability of the learner to apply knowledge and skills autonomously and with responsibility
LEVEL 5[2] **Learning outcomes**	Comprehensive, specialised, factual and theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems	Exercise management and supervision in contexts of work or study activities where there is unpredictable change; review and develop performance of self and others

[2] 1. The descriptor for the short cycle (i.e. short professional Bachelor study cycle) developed by the Joint Quality Initiative as part of the Bologna process, (within or linked to the first cycle), corresponds to the learning outcomes for EQF level 5.

	Knowledge	Skills	Responsibility and autonomy
LEVEL 6[3] **Learning outcomes**	Advanced knowledge of a field of work or study, involving a critical understanding of theories and principles	Advanced skills, demonstrating mastery and innovation, required to solve complex and unpredictable problems in a specialised field of work or study	Manage complex technical or professional activities or projects, taking responsibility for decision-making in unpredictable work or study contexts; take responsibility for managing professional development of individuals and groups
LEVEL 7[4] **Learning outcomes**	Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research Critical awareness of knowledge issues in a field and at the interface between different fields	Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields	Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches; take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams
LEVEL 8[5] **Learning outcomes**	Knowledge at the most advanced frontier of a field of work or study and at the interface between fields	The most advanced and specialised skills and techniques, including synthesis and evaluation, required to solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice	Demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research

Source: European Commission, 2008

For each of the **eight levels** and the **three dimensions** (Knowledge, Skills, and Competence) detail descriptors were given that define the levels in the EQF. The

[3] 2. The descriptor for the first cycle (i.e. Bachelor HE study cycle) corresponds to the learning outcomes for EQF level 6.

[4] 3. The descriptor for the second cycle (i.e. Master HE study cycle) corresponds to the learning outcomes for EQF level 7.

[5] The descriptor for the third cycle (i.e. PhD/Doctoral study cycle) corresponds to the learning outcomes for EQF level 8.

descriptors indicate the learning outcomes relevant to qualifications at each particular level in any system of qualifications.

3. Definition of learning goals

The learning goals describe what a learner will know, possess as skills, and develop as attitudes and/or competences at the end of their learning. Thus, the learning goals might be defined in a form of learning outcomes – "statements regarding what a learner knows, understands and is able to do on completion of a learning process. They are defined in terms of knowledge, skills and responsibility and autonomy."

In this form of learning outcomes, the learning goals exist also in the description of the different competencies, so it will be easier a learner to take out of a competence description respective learning outcomes that s/he want to acquire/master and to place it as their own learning goals.

4. Identification of one's own learning needs and capacities on the base of professional competence profiles

Why do you need to assess periodically your learning needs? Put simply – to be on track with your profession and interests.

There are many ways to assess your learning needs by yourself. Some of the more easy and accessible ways are given below.

4.1 Review of desirable professional competence profile

It is maybe the most straightforward and easiest way – to look carefully at a well-developed professional competence profile that interests you and to read with attention the description of the learning outcomes of the profile's competences. Then, to ask yourself whether you possess some or all of these competences, expressed in learning outcomes, or not.

In a journal article Kieran Walsh (Walsh, K., 2006) gives concise review of several of the most feasible other methods to (self-)assess your learning needs. They are listed and shortly described below.

4.2 360° appraisal

This method is feasible if you work in a team. You may ask your colleagues to give you (or write shortly down) a feedback about your professional (and personal?) strengths and weaknesses – in terms of knowledge, skills, attitudes, and/or abilities. A rule of thumb is that feedback should be **balanced**, **descriptive**, **objective** and **constructive**.

4.3 Critical incident reviews

The primary purpose of these reviews is to find out what went wrong, how and why it went wrong and how to prevent errors from being repeated. But they can also be used as an educational tool. A real incident that occurred to your team is likely to concentrate minds much more effectively than a dry research paper. The review could look at things that went wrong… but could equally look at events that had a positive outcome. The critical incident reviews have to be structured in a way that first you identify the incident(s) you want to look at, then assure time for preparation of thoughts and opinions for the incident, and at third place, organise a briefing about the incident(s) – what happened and why the things went wrong. Finding the learning gaps' reasons is the desired outcome of the team/colleague briefing that can point you out some of your learning needs.

4.4 Self-assessment

To perform a self-assessment, you need to keep a diary of learning needs that occur during your working day. You simply should drop down notes about professional questions and/or situations that demanded answers by you, and you do not know at that moment. And this should be done on a regular daily basis. When you look back at the diary you can identify your learning gaps. The gaps might be single, but they might be also systematic – pointing at whole area of knowledge/skills/competences that require your attention and action.

4.5 Practice Review

This review requires either a scrutiny of formal/official data that already exist, or to administer an official client satisfaction questionnaire. The analysis of the questionnaires will show you the learning gaps you might have.

4.6 Observation

In this method you can ask your colleagues to observe your performance and professional practicing and give you a feedback what you could do better. It could be done also through recording your performance on video and a latter analysis of the video by your colleagues and giving you feedback and advice on your actual learning needs.

There are also many other more systematic and professional methods, performed by learning designers, and if you can undertake such a review it will be of great help for you. However, if you do not have such opportunity, you may use some of the methods listed above. It is always better to use, if you can, more than one method - both subjective and objective, for better and more precise identification of your learning needs.

TASK FOR STUDENTS

Search the www about the term "competence profiles for <profession>", or "competences framework for <profession>", or similar, and find a competence profiles (frameworks) for profession that is similar to your specialty profile. Briefly describe the competences structure.

CONCLUSION

The Council of European Union defines the 'competence' as the proven ability to use **knowledge**, **skills** and **personal, social and/or methodological abilities**, in work or study situations and in professional and personal development. The competence consists of knowledge, skills and responsibilities and autonomy and could be presented at **different level**.

Stating the appropriate learning goals lies on a given **competence framework**, reflecting individual's presentation, needs and gaps.

FEEDBACK QUESTIONS

1. *Explain the meaning of the term 'competence framework'. Illustrate the explanation by a general example (i.e. what is the general competence framework of automobile driver).*
2. *Why is it important to define correctly the learning goals?*

DIGITAL LEARNING OPPORTUNITIES

LEARNING OBJECTIVES

After completing this lesson, the learners will:

- recognize variety of digital possibilities for education and training,
- use digital tools for searching effectively for learning and career opportunities,
- identify own level according to the **Digital Competence Framework for Citizens** in relation to information and data literacy,
- identify own level according to the Digital Competence Framework for Citizens in relation to Communication and collaboration competence area.

INTRODUCTION

Nowadays, there are a huge amount of online learning and training opportunities are offered. The digital marketing is so aggressive, using e-mails, social networks, web, artificial intelligence, and much more technologies and tools, that the learner could feel loosed in the *see* of 'very important' learning needs.

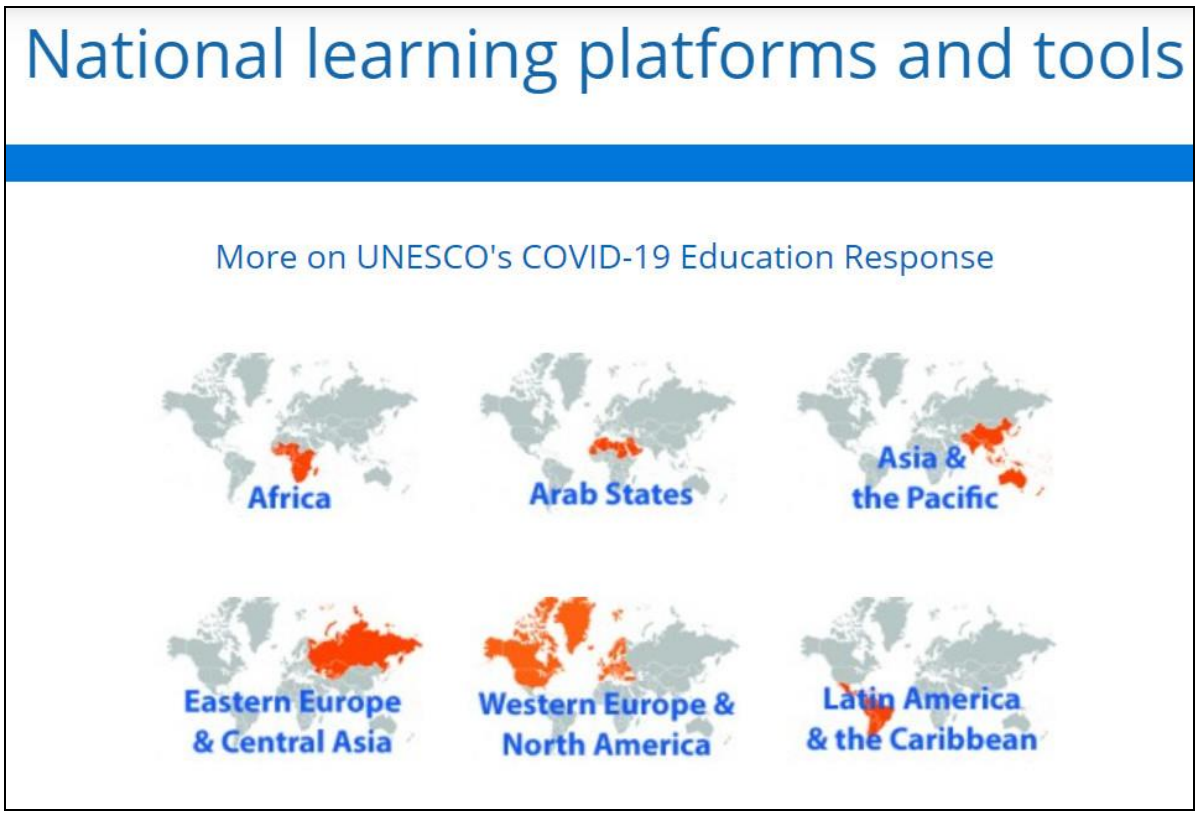
The next chapter focuses on the digital competences to work with information and data as well as to digital competences for collaborative and autonomous learning,

identifying own level and gaps, as a starting point for self-development. The good base in this area will ensure the learner's ability to look for, evaluate critically and choose the appropriate digital learning courses or tools.

THEORETICAL BACKGROUND

Digital possibilities for education, training and career opportunities and guidance or support

There is an overwhelming amount of digital possibilities for education, training, career opportunities and guidance and support available through digital portals for learning opportunities on the Internet (Picture 1). Some of the easily identifiable and recognisable sources are given below.



Picture 1: UNESCO: National Learning Platforms and Tools
Source: https://en.unesco.org/covid19/educationresponse/nationalresponses

PLOTEUS Portal: Learning Opportunities and Qualifications in Europe - Information about Courses, Work-Based Learning and Qualifications
https://ec.europa.eu/ploteus/en

European Portal for Youngsters in Vocational Education Training

http://mavoieproeurope.onisep.fr/en/

http://mavoieproeurope.onisep.fr/en/your-mobility-kit/work-and-jobs-in-europe/

Council of Europe: Training Courses

https://www.coe.int/en/web/youth/training-courses

EURES - The European Job Mobility Portal

https://ec.europa.eu/eures/public/homepage

Youth for Europe - The New European Youth Portal

https://youthforeurope.eu/

Erasmus+ | Opportunities for Individuals

https://ec.europa.eu/programmes/erasmus-plus/opportunities/overview_en

Erasmus+ | Studying Abroad

https://ec.europa.eu/programmes/erasmusplus/opportunities/individuals/students/studying-abroad_en

Erasmus+ | Learning Mobility for Individuals

https://ec.europa.eu/programmes/erasmusplus/opportunities/organisations/learning-mobility/higher-education_en

Erasmus+ | Training Opportunities for Staff

https://ec.europa.eu/programmes/erasmus-plus/opportunities/staff-training_en

EURAXESS: European Researchers Mobility Portal

https://euraxess.ec.europa.eu/

The identification of the best suitable learning, training, and career opportunities for every particular case depends heavily on the searching skills and strategies used.

Digital skills to search for learning and career opportunities

The digital skills to search for learning and career opportunities are given the necessary attention in one of the identified and developed Eight Key European Competences for Lifelong Learning namely, the **Digital Competence** (European Commission, 2019). In the specially developed "*DigComp 2.1: The Digital Competence Framework for Citizens with Eight Proficiency Levels and Examples of Use*" (JRC, 2017), the first Competence Area is **"Information and data literacy"**.

Further, for each of the 3 competences in Competence Dimension 2 (Table 2) 8 **Proficiency levels** are detailed, corresponding to the **eight levels of the European Qualification Framework** (EQF). Levels 5 to 8 correspond to the **four levels of Higher Education** (HE) study (professional bachelor, bachelor, master, and doctoral). Thus, very detail description of the necessary competences for **information and data literacy** are developed as concrete learning outcomes of what is expected a student to be able to perform for each of the **HE cycles of study** (JRC, 2017). These levels of Information and data literacy competences will serve also the capacity to search for learning and career opportunities.

Table 2: Information and data literacy competence area

Competence areas Dimension 1	**Competences Dimension 2**
1. Information and data literacy: **To articulate information needs, to locate and retrieve digital data, information and content.** **To judge the relevance of the source and its content.** **To store, manage, and organise digital data, information and content.**	1.1 Browsing, searching and filtering data, information and digital content To articulate information needs, to search for data, information and content in digital environments, to access them and to navigate between them. To create and update personal search strategies.
	1.2 Evaluating data, information and digital content To analyse, compare and critically evaluate the credibility and reliability of sources of data, information and digital content. To analyse, interpret and critically evaluate the data, information and digital content.
	1.3 Managing data, information and digital content To organise, store and retrieve data, information and content in digital environments. To organise and process them in a structured environment.

Source: European Commission: Joint Research Centre

Learning both collaboratively and autonomously

Similarly, the Second Competence area **"Communication and collaboration"** of the Digital Competence (JRC, 2017) can serve the skills of learning both **collaboratively** and **autonomously**. Table 3 presents the constituting competences of communication and collaboration competence area.

Table 3: Communication and collaboration competence area

Competence areas **Dimension 1**	**Competences** **Dimension 2**
2. Communication and collaboration: **To interact, communicate and collaborate through digital technologies while being aware of cultural and generational diversity. To participate in society through public and private digital services and participatory citizenship. To manage one's digital identity and reputation.**	2.1 Interacting through digital technologies To interact through a variety of digital technologies and to understand appropriate digital communication means for a given context.
	2.2 Sharing through digital technologies To share data, information and digital content with others through appropriate digital technologies. To act as an intermediary, to know about referencing and attribution practices.
	2.3 Engaging in citizenship through digital technologies To participate in society through the use of public and private digital services. To seek opportunities for self-empowerment and for participatory citizenship through appropriate digital technologies.
	2.4 Collaborating through digital technologies To use digital tools and technologies for collaborative processes, and for co-construction and co-creation of resources and knowledge.
	2.5 Netiquette To be aware of behavioural norms and know-how while using digital technologies and interacting in digital environments. To adapt communication strategies to the specific audience and to be aware of cultural and generational diversity in digital environments.
	2.6 Managing digital identity To create and manage one or multiple digital identities, to be able to protect one's own reputation, to deal with the data that one produces through several digital tools, environments and services.

Source: European Commission: Joint Research Centre

Similarly to the Digital competence area "Information and data literacy" (Table 2), for the "Communication and collaboration" area (Table 3), 8 Proficiency levels are detailed in terms of learning outcomes for each of the 6 competences of Competences Dimension 2. Again, levels 5 to 8 correspond to the four levels of HE study (professional bachelor, bachelor, master, and doctoral). They can be seen in JRC, 2017. These levels of Communication and collaboration competences will serve also the capacity for learning both collaboratively and autonomously.

TASK FOR STUDENTS

Locate on the web and download the publication of the Joint Research Centre (JRC) from 2017 "DigComp 2.1: The Digital Competence Framework for Citizens with eight proficiency levels and examples of use". Find in the publication and put in a table the Proficiency levels 5 to 8 (corresponding to the higher education levels in EQF) of the Competences 1.1, 1.2, and 1.3 from Competence area 1: "Information and Data Literacy" (see Table 2 in this chapter).

CONCLUSION

In this chapter you have been familiarized with the **Digital Competence Framework for Citizens** in the areas of **Information and data literacy** and **Communication and collaboration**. The European Qualification Framework provides you with a tool to identify your learning needs using the listed concrete learning outcomes expected at each level. Improving the digital competences in these areas is warranty for quick orientation among variety of learning resources and courses.

FEEDBACK QUESTIONS

1. *Why the information and data literacy are important?*
2. *How could you evaluate the reliability of the listed sources in the internet as a response to your digital search?*
3. *Why it could be necessary to create multiple digital identities?*

LEARNING PLANS

LEARNING OBJECTIVES

After completing this lesson, the learners will:

- know what is learning plan,

- be familiarized with a strategy for learning plan development,
- develop individual learning plan based on a developed competence framework.

INTRODUCTION

A learning plan is an individual action plan developed to help you **establish**, **achieve** and **evaluate** your learning goals. It should be based on your established learning needs, and should make use of the digital learning opportunities searched and identified by you.

THEORETICAL BACKGROUND

The learning plan is the subsequent stage in the chain of identified competence profiles to strive for – the **established learning needs** – the identified learning opportunities – the developed **individual learning plan** to achieve the competence profile.

There are different ways to develop an individual learning plan. One reasonably clear, concise and successive way is proposed in the **Instruction Guide for Manitoba's Licensed Practical Nurses** (College of Licensed Practical Nurses of Manitoba, 2019).

This individual learning plan has five components as follows:

1. Goal: Learning outcome/(part of) Competence
2. Planned Interventions
3. Completed Interventions
4. Impact on Practice
5. Evaluation of Learning

Once you set and write down your **goal** for your Learning Plan, you should think of, search for, and list your **planned interventions** (Learning Paths). They may include different learning events that head towards achieving your goal (e. g. attending conferences, workshops, educational events, completing courses, consultations with

experts; self-study; etc.). Most of the interventions you plan might be attended and conducted digitally, on the base of the identified digital learning opportunities.

You must keep record in your plan of the **completed interventions**, collecting all evidences of the successfully passed through learning events – diplomas, certificates, acquired competences, badges, rating scores. When done digitally, you will collect a range of digital evidences of completion and performance (e.g. certificates, acquired competences, badges, rating scores).

Next step you should do in your **learning plan** is to describe the **impact on practice** of your newly acquired Learning Outcomes (Competences). In order to precisely reflect the resulting Impact on your practice or study you may ask yourself e.g. the following questions (College of Licensed Practical Nurses of Manitoba, 2019):

- What did you learn that you did not know before?
- In what ways has the learned contributed to your competence profile?
- How have your client/study relationships changed and improved as a result?
- It is important that you describe both:
  - what you learned,
  - the impact of what you learned on your study or practice.

In total, in your **impact on practice,** give a notion on how your study or practice changed or improved as a **result of your learning interventions**.

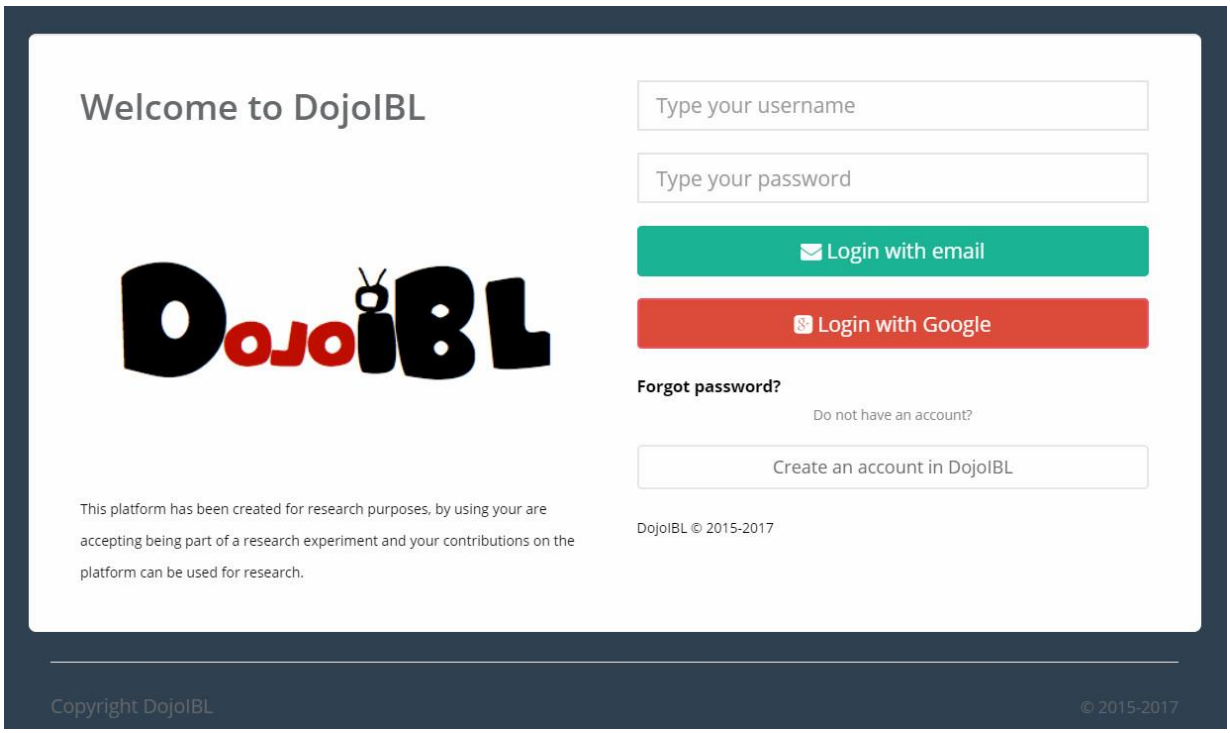
And finally, at the end of your learning plan, you have to perform **evaluation of learning** that you undertake in your plan. You might not perform a rigor evaluation, but rather you can evaluate your overall sense of your learning experience. This may help you identify and plan additional learning activities for a following period. However, in Chapter 5 of this module we will consider some **digital tools for** (self-) **evaluation** and (self-) **assessment of learning**.

PRACTICAL EXAMPLE

A free of charge **digital planning service** is identified that can serve the **learning plan design**, development, execution, and evaluation. The

service is called **DojoIBL** (https://dojo-ibl.appspot.com) developed under a European Erasmus+ project and it can handle various types of educational and learning events and activities.

In Chapter 6 of this module, a workshop for creation of Individual Learning Plan with DojoIBL (Picture 2, Picture 3) will be described for performing with the students.

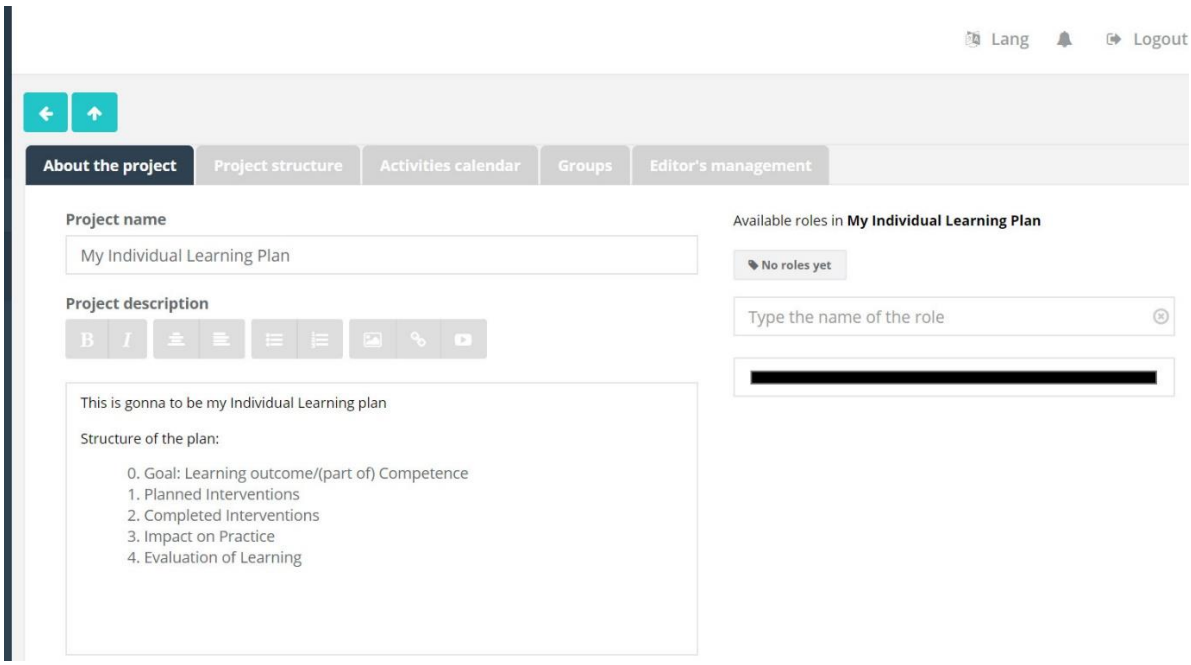


Source: https://dojo-ibl.appspot.com/

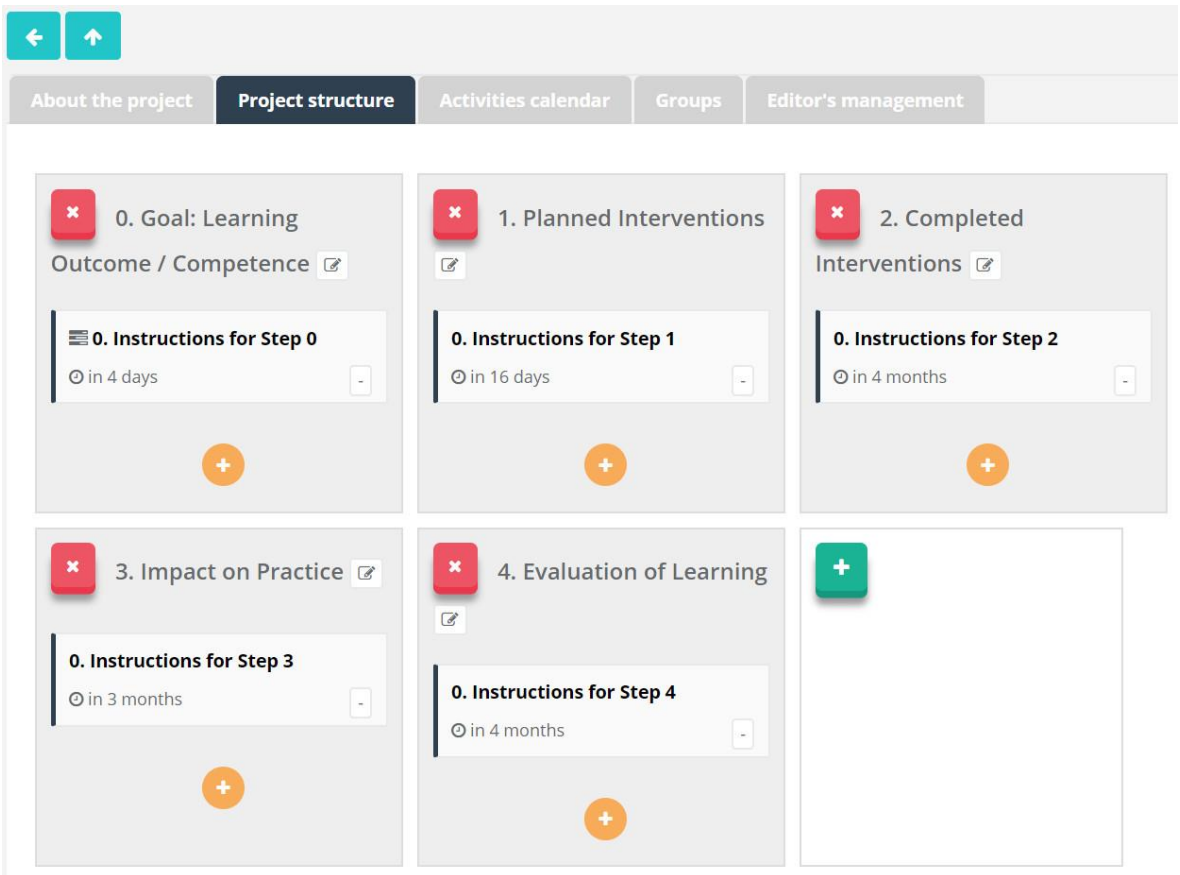
One might create their Individual Learning Plan also with more common digital tools as for example with **Google Calendar**, by creating a separate calendar named Individual Learning Plan and following the recommended steps in this chapter.

However, good planning software with both free and paid options for use, could also be find and used for creating individual learning plans. Two such examples are:

ClickUp: https://clickup.com/ Airtable: https://airtable.com/



Picture 2a and 2b: DojoIBL free planning and performance service
Source: https://dojo-ibl.appspot.com/



Picture 3: DojoIBL created project "Individual Learning Plan"
Source: https://dojo-ibl.appspot.com/

TASK FOR STUDENTS

1. *By following the described 5 steps for creation of an Individual Learning Plan, create your individual learning plan for studying the course "21st Century Skills" you are now enrolled in. Having in mind the course curriculum and modules, try to figure out your learning activities and timeframes during the course. Compose only the part of the plan that contains the first two steps (Goal, and Planned Interventions). The other three components of the course (Completed Interventions, Impact on Practice, and Evaluation of Learning) you should fill in gradually after completion of the different modules/stages of your course.*
2. *Make attempt to put your plan in one of the software DojoIBL, ClickUp, or Airtable that can hold, monitor, and track projects. You can also find another free planning software to use for designing and implementing your plan in it. Be sure to design in the software all five components of the plan. Fill in the first two components of the plan, and gradually fill in the other components as you advance in the course.*

CONCLUSION

The chapter provides you with a strategy for development of effective learning plan in consideration with given competences framework and identified learning needs and / or gaps. It is focused on practice of setting learning goals, steps of intervention, evaluation of the results on practice and recognition of the achievements. Provided digital tools could help the learner to pass through this process in more efficient and reliable way.

FEEDBACK QUESTIONS

1. *What are the main components of the learning plan?*
2. *What kind of evidence could you collect to prove completing the innervations for achieving learning goals?*
3. *How could you evaluate the impact on practice of your learning plan?*

DIGITAL ENVIRONMENTS AND TOOLS FOR LEARNING

LEARNING OBJECTIVES

This lesson aims to introduce learners to the virtual learning environments and digital tools, supporting and facilitating different learning activities. The lesson includes a short presentation of some popular virtual environments and ICT tools for learning, most of which are **open source** or support free subscription plans. The provided examples explore some of their popular features and basic functionalities, which are suitable both for **learners** and **educators**. Covering all elements of the **learning process** (Gagne, 1985), the presented digital environments and tools for learning aims to illustrate how they can facilitate different teaching methods (such as active learning, inquiry-based learning, competence-based learning) and learning styles (VARK) and to discover multiple opportunities to learn in a digital era.

After completing this lesson, the learners will be able:

- to identify various digital environments and tools for learning,
- to identify different digital tools for monitoring, tracking, evaluation, and assessment of learning process and learning achievements.

INTRODUCTION

Digital technologies and Internet practically support every aspect of the learning process, making it more accessible, device neutral, easy to follow and student-oriented. On the one hand, any **Internet search engine** (such as Google, Bing etc.) provides direct access to numerous **learning materials** and knowledge artefacts, covering wide number of forms, such as entries in **encyclopaedias**, **multimedia sources** (pictures, videos, audio), **video streaming** and **video tutorials**, **digital books**, **official reports**, **statistic data**, **research papers**, **personal evidences** (personal blogs, discussion forums), specialised websites and many others. On the other hand, Internet technologies facilitate **communication** and personal contact, stimulating learners to get involved in **discussion forums**, **chat**

rooms and **sections for comments** within specialised learning environments, as well as to find and follow professionals, educators and experts in specific fields in **social network sites**. Finally, new digital technology solutions facilitate teachers to apply **innovative teaching methodologies** in class, including flipped classroom strategy, inquiry-based learning and other **active learning approaches**.

Many educational institutions publish **open educational resources (OER)** within **open repositories**, including course materials, lectures and presentations, syllabuses, lecture notes, reading lists, assignments and educational artefacts such as course works, master or doctoral thesis and many others. During the last years, the **massive online open courses (MOOCs)** emerged as complete educational offerings, adding new options for learning in Internet and expanding the traditional learning landscape with free opportunities for learning for everyone.

Therefore, using technologies as a tool for learning is both expected and needed for 21st century professionals.

THEORETICAL BACKGROUND

New digital tools can successfully support all stages and phases of the learning process in every forms of education – face-to-face, distance, blended. Therefore, on the first place we will explore the Blooms' taxonomy, and more specifically, the **Bloom digital taxonomy**. Focusing on the impact of the new digital technologies on learning, Churches (2008) compile the Bloom Digital taxonomy, classifying how digital tools can facilitate the learning process, leading to high-order thinking and learning.

- **Remembering:** bullet pointing, Highlighting, Bookmarking or favouring, Social bookmarking, Searching or "googling";
- **Understanding:** advanced and Boolean Searching (be able to create, modify and refine searches), Blog Journaling, Categorising & Tagging (digital classification); Commenting and annotating, Subscribing;
- **Applying:** running and operating (hardware and applications to obtain a basic goal or objective); Playing (understanding of process/task, application of

skills), Uploading and Sharing materials (to websites), Hacking (applying a simple set of rules to achieve a goal or objective). Editing (a process or a procedure to edit multimedia files);

- **Analysing:** mashing (mashups are integration of several data sources into a single resource); Linking (building links within and outside of documents and web pages); Reverse-engineering; Cracking (understanding how the system operates, analyse its strengths and weaknesses and then exploit them);
- **Evaluating:** blog/vlog commenting and reflecting (constructive criticism); posting comments (to blogs, discussion boards, threaded discussions); moderating; collaborating and networking (collaboration, leading to collective intelligence; networking is a feature of collaboration, contacting and communicating with relevant person). Testing (Alpha and Beta: testing of applications, processes and procedures); Validating (be able to validate the veracity of the information);
- **Creating:** programming; Filming, animating, video casting, podcasting, mixing and remixing; Directing and producing; Publishing, production of video blogs, blogging and also wikiing - creating, adding to and modify content in wikis. Creating or building Mash ups.

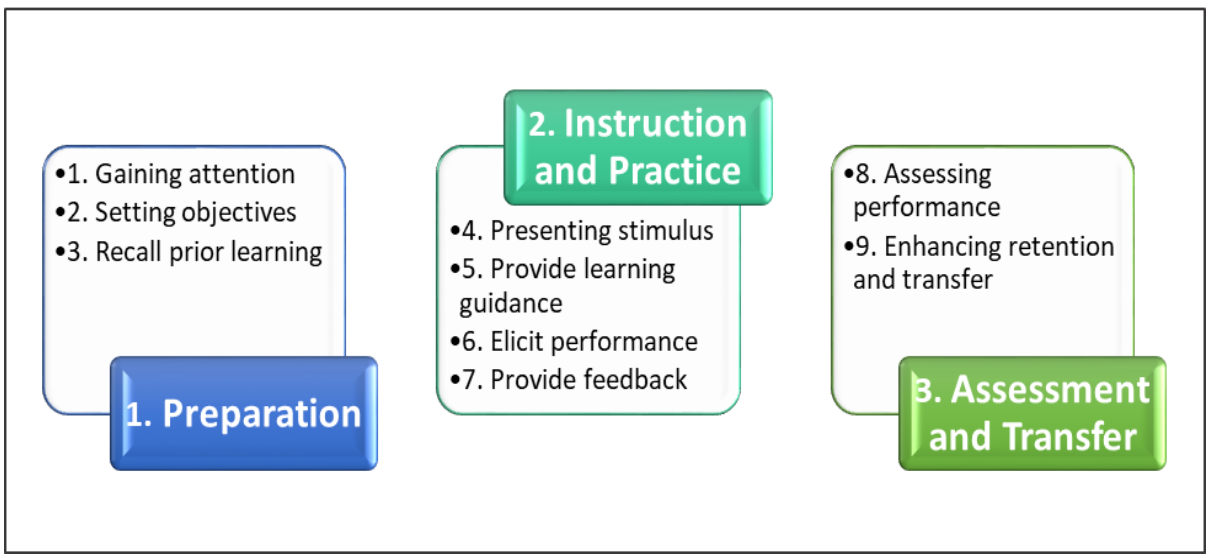
Assuming that **teachers play a critical role in the learning process**, it is interesting to notice the classification framework for Technology enabled practice of Prestridge et de Aldama, (2016). They investigate how ICT are applied in teaching, including the teachers' beliefs, pedagogical practices with ICT, levels of learning and technological competency. This way, the proposed framework (Table 4) defines a method to gain more in-depth understanding, how digital tools support learning process.

Table 4: Classification Framework for Technology-Enabled Teaching Practice

Epistemic beliefs	**Dualistic view**	**Multiplistic**		**Relativistic**	**Relativism**	
Pedagogical beliefs	Developing computer skills; supplementing subject skills	Enrich existing curriculum			Facilitate new ways of learning	
Pedagogical practices with ICT	Teacher centred	Primarily teacher centred	Mix-balanced	Primarily student centred	Student centred	
Levels of learning	Doing	Thinking about connecti-ons	Thinking about concepts	Critiquing and evaluating	Creating knowled ge	Sha-ring knowl edge
Technolo-gical competency	Low	Medium			High	

Source: Prestridge et de Aldama, 2016

Finally, taking in consideration the role of ICT tools in every stage of the learning process, we will further explore the nine events of instructions, constituting the framework for an effective learning process (Gagné, 1985). As illustrated on Picture 4, the **nine events of instructions** can be grouped in **three main phases** (Preparation phase, Instruction and Practice phase and Assessment and Transfer phase).



Picture 4: The Nine events of instructions
Source: Gagne, 1985

Following this model, and taking in consideration the other classification schemes, in the next section we will present the main features and elements of the digital learning environments and ICT tools.

Not last, new technologies enable teachers to adopt innovative and active learning approaches, raising students' motivation, awareness and self-direction. For example, digital technologies can support the flipped classroom strategy, encouraging active learning, collaboration, and discovery. Thus, the proposed list of digital instruments in Annex make a good reference for further experimenting in teaching and learning.

Digital Learning Environments (DLE)

They represents a federated, online environment that includes services and tools to support the needs of teaching and learning in all modes (i.e., face-to-face, blended/hybrid, and fully-online). Some common functions of the Digital Learning Environments include:

- **content management:** creation, storage, access to and use of learning resources;
- **curriculum mapping and planning:** lesson planning, assessment and personalisation of the learning experience;
- **learner engagement and administration:** managed access to learner information and resources and tracking of progress and achievement;
- **communication and collaboration:** emails, notices, discussion forums, chat, wikis, blogs;
- **additional learning facilities:** live video conferencing or audio conferencing, white board facilities.

PRACTICAL EXAMPLE

In the last years, the number of available digital learning tools and applications is increasing considerably. In the following list (Table 5), we will investigate some of the popular tools, facilitating one or more of the learning processes of Gagne (1985).

Table 5: Summary of the Digital learning tools, based on 9 stages of Instructional design

Tools	Primary functions	1	2	3	4	5	6	7	8	9
		Main attention	Inform learners of the objectives	Stimulate recall of prior learning	Present the learning content	Guidance for learning	Practice	Feedback	Assess Performance	Retention & transfer
Prezi	**Presentation**	V		V	V	V				V
Thinglink	**Exploration board**	V		V	V	V				V
Glogster	**Multimedia poster**	V	V	V	V	V	V	V		V
Padlet	**Collaborative pinboard**		V	V	V	V	V	V	V	V
Flipsnack	**Flipbook**	V		V	V					V
Picktochart	**Infographics**	V	V	V	V	V				
Visme	**Design materials**	V		V	V	V				V
Infogram	**Interactive visualizations**	V		V	V	V	V			V
PearDeck	**Interactive class**	V	V	V	V	V	V	V		V
Mentimeter	**Interactive presentation**	V	V	V			V	V		V
Socrative	**Class activities**	V	V	V			V	V	V	V
Kahoot!	**Interactive class work**	V	V				V	V	V	V
Quizlet	**Exercises**	V	V				V	V	V	V
Formative	**Assessment tool**		V				V	V	V	
Explain Everything	**Collaborative white board**	V				V	V	V		V
Animoto	**Video editing**	V	V	V	V					V
Active Presenter	**Make video tutorials**				V	V	V			V
Edpuzzle	**Video editing/ text, quizzes**	V			V	V	V	V		V
TEDed	**Video for teaching**	V		V	V	V	V	V		V
FreeCam	**Tutorials**			V	V	V				V
Audacity	**Audio editing**				V					V
Voicethread	**Audio Storytelling**				V	V	V	V	V	V
Pocket	**Bookmarking**			V	V	V	V			V
Zotero	**Academic sources**			V		V	V			V

Source: Gagne, 1985 / Authors of this module

In the Annex, there are provided different tips and suggestions how to use different digital tools in every step of the cycle.

It is important to note that **social media**, such as Facebook, Twitter, Youtube, Instagram, WhatsApp, and others, are increasingly used by teachers and learners for organising learning activities. Considering that these instruments are popular among students, teachers can decide to exploit them in specific learning scenarios. However, security and privacy issues should be taken into account, moreover, some of these instruments have age limit (Facebook could be used only by students, older than 13 years old). Thus, privacy and security of the students should always be considered when digital tools for learning are used.

TASK FOR STUDENTS

1. *Please select three ICT tools from Annex and identify how you can possibly use them in your learning/teaching activities.*
2. *Please, share with the group, one or two ICT tools that you're used to use in learning (identify how it relates to the Bloom digital taxonomy).*

CONCLUSION

Available ICT instruments as **Digital Learning Environments** and **digital tools** for learning aim to encourage lecturers and learners to design and perform more complex and **active learning experience**, leading to high-order thinking and knowledge retention. In addition, many educational platforms provide **ready-to-use and professionally designed templates**, **tutorials** and **the best practices**, enhancing users to achieve **high-quality results** even without professional experience. Furthermore, recognizing possibilities of the ICT tools for learning can reduce cognitive overload, increase learning satisfaction, and prepare learners for new lifelong learning experience.

FEEDBACK QUESTIONS

1. *How ICT technologies can facilitate the 9 stages of Instructional design?*
2. *What are the main characteristics of Learning Management Systems (LMS)?*
3. *Why should learners be familiar with specific ICT tools for learning?*

DIGITAL TOOLS FOR (SELF-) EVALUATION AND (SELF-) ASSESSMENT OF LEARNING

LEARNING OBJECTIVES

After completing this lesson, the learners will:

- know methods and digital tools for assessment and self-assessment of the results achieved in the learning process,
- choose the most appropriate methods and tools for evaluation of learning results,
- use digital tools for qualitative and quantitative (self-)assessment of learning.

INTRODUCTION

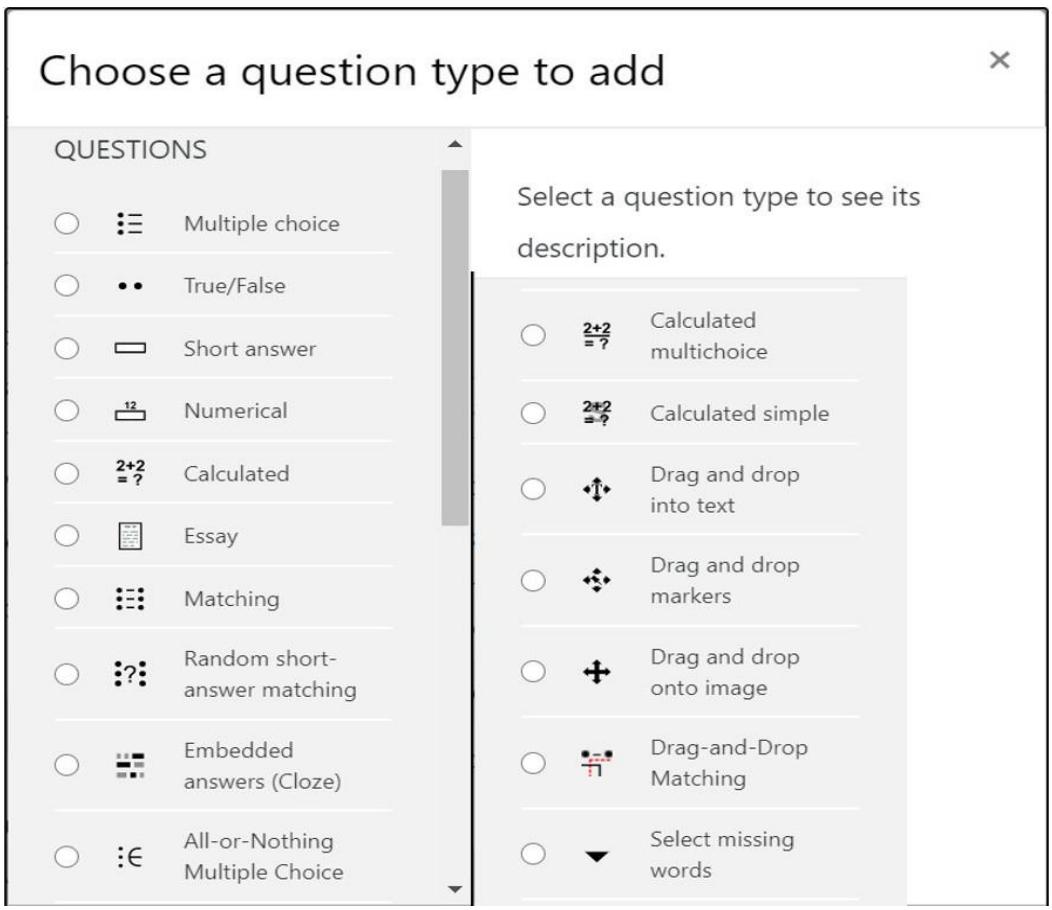
Choosing effective methods and corresponding tools for evaluation of the learning process and assessment of the results is in the core of tracking the implementation of the learning plan. It provides the both parties – the trainer and the learner with flexibility to take decisions during the process, keeping learner on the right way to the achieving learning goals.

In this chapter you will be familiarised with a variety of methods for evaluation of learning process and assessment of the results, when and how they could be performed and what digital tools could support these processes.

THEORETICAL BACKGROUND

1. Digital tools that are aimed at measuring and assessing learners' progress and results

There are many digital tools that are aimed at **measuring** and **assessing learners' progress** and results. For example, different types of **quizzes** are easily and almost entirely assessed automatically. For example, the **Learning Management Systems** (LMS) have a big variety of quiz assessment questions (Picture 5) that can be administered and graded automatically, or graded by a teacher.



Picture 5: Part of the quiz types of questions available in the LMS Moodle
Source: Screenshot from LMS Moodle

While the quizzes are used for assessment with standardised tests, the so-called **Authentic Assessment** uses mostly **Rubrics** (scale of criteria with levels) as a method of assessment. They can be used as a method of self-assessment as well.

A rubric describes:

1. The assessment criteria against which the learner's achievement will be measured.
2. The described achievement levels for each criterion, marked from excellent to poor.

There are two types of rubrics – holistic and analytical.

A holistic rubric lists only the assessment criteria for the learner's work, all criteria with a numeric uniform scale for assessment, ranging from excellent to poor;

An analytical rubric lists not only the assessment criteria, but defines for all criteria a same number of achievement levels (from excellent to poor, and quantified with points) with a short textual description for each level of what is to be achieved, and what – not, in order a learner to be assessed at that level for the given criterion.

Most commonly, the analytical rubrics are organised in **tables**, where each table row represents one **criterion** with its levels of **achievement**. The **criterion** is placed in the left most cell of the row, and the levels of achievement with their descriptions are placed each after other in the same row in ascending or descending order of their **scale points**. An example of a rubric is given in Table 6.

In some rubrics, one can add a **"Weight"** column, when there are criteria that are more important than others in the rubric. Thus, the points for a criterion can be doubled, or tripled, or so, if needed.

With carefully developed rubrics one can assess and self-assess **complex learning tasks**, **multi-level competences**, **projects**, **collaborative work**, **learning portfolios**, his/her **learning initiatives**, and any other kind of non-routine and composite learning undertakings.

Table 6: Example of a Rubric - Assessment of computer presentation (an excerpt)

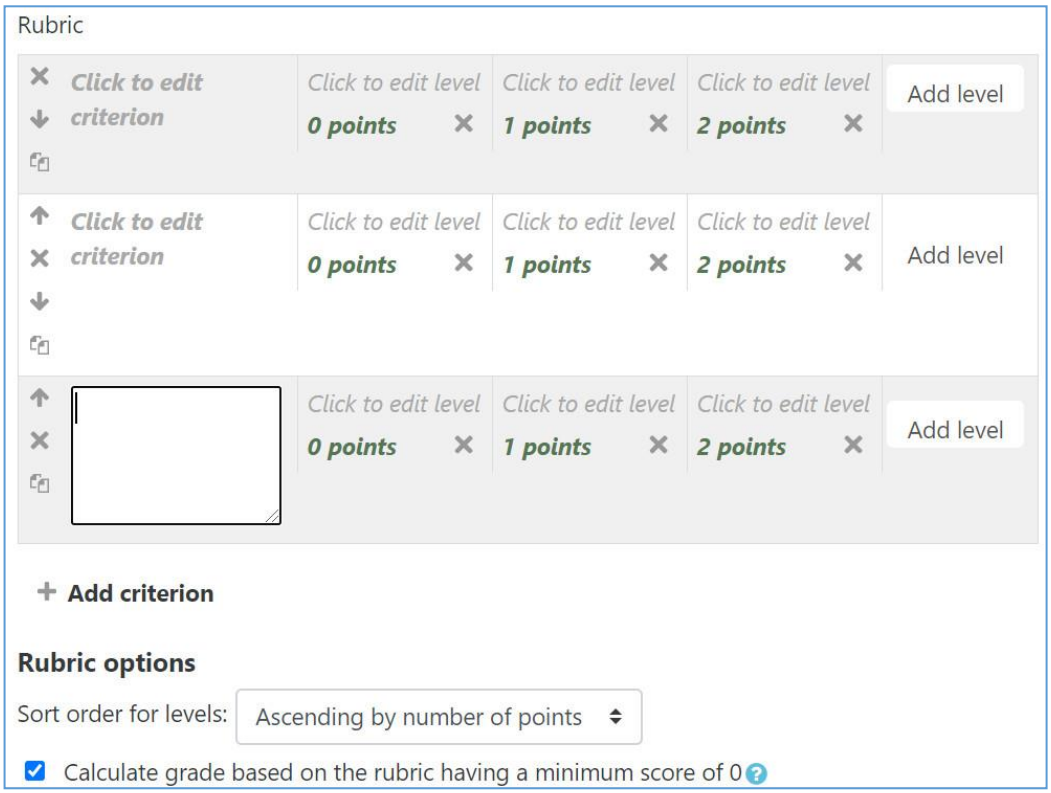
Presentation assessment		**Levels of performance**		
Criteria	**Weight**	**Excellent (3 p.)**	**Good (2 p.)**	**Poor (1 p.)**
Wording in slides	x 2	Wording is concise, meaningful, to the topic, and logical. Adheres to the rule 7±2 rows on a slide	Wording is mostly to the topic, but not concise. Some slides are too excessive in text.	Wording is chaotic in meaning. Often lacks the point. Most of the text is "copy-pasted" directly from sources.
Colour design	x 1	Consistent, no more than 4 colours used, pleasant, not irritating, with good background v/s text contrast	Pleasant colours, good contrast between text and background, but not consistent, too many/less colours.	No consistent colour scheme, colours are arbitrary, partial lack of readability due to similar colours of text and background.
……. ……. …….	…… …… ……	…… …… ……	…… …… ……	…… …… ……

Source: Authors of this module

2. Online free rubric makers[6]

- **iRubric** (custom): https://www.rcampus.com/indexrubric.cfm?
- **RubiStar** (customizable templates): http://rubistar.4teachers.org/index.php
- **Teachnology** (premade and customized): https://www.teach-nology.com/web_tools/rubrics/general/
- **PBL Checklist** (project based learning): http://pblchecklist.4teachers.org/checklist.shtml
- **RubricMaker** (customizable templates): https://rubric-maker.com/

[6] https://www.pbisrewards.com/blog/free-online-rubric-maker/



Picture 6: Designing Rubric with scale of criteria with levels in the LMS Moodle
Source: Screenshot from LMS Moodle

As a rubrics creation instrument could also be used any **table-composing software** (e.g. spreadsheet or word processor). But in order to assess (semi-)automatically with rubrics it is necessary to use dedicated software. For example, in some of the well-developed Learning Management Systems (LMS) rubric assessment methods are integrated for the learners' assignments, so as, not only creation of rubric features are integrated, but also the consequent assessment with the created rubric is (semi-) automated, where the assessor needs only to click on the respective level for each criterion in order to obtain calculated assessment results. On Picture below a screenshot is presented of the LMS Moodle rubric creation functionality, where one can create a rubric for the assessment of a given learners' assignment, and each learner can be semi-automatically assessed with this rubric.

3. Monitoring and tracking of learning process

Monitoring and tracking of learning process could be organised and performed with different types of software - dedicated, or mostly related to planning and performance of projects/tasks.

3.1 Dedicated software for performance, monitoring, and tracking of learning process

Software for Learning Portfolios (ePortfolios) are one of the dedicated types of software that can be specifically used for **monitoring** and **tracking** of the learning process. This software allows collection of a learner's works (of different digitalised types) throughout a lasting periods of learning endeavours and performance – e.g. learning/training course periods, self-organised studies, etc. The **collected works** for a given period of study time show the learner's progress during the course time and allows one to ascertain and track the study progress and mastering of the subject on the base of the **collected evidences** of learner's assignments. The portfolios can be organised in different ways, with different levels of complexity and included **assessment instruments** (e.g. developed rubrics for portfolio assessment). The organisation, content/collection requirements, and assessment criteria for a given portfolio can be developed and requested either by teachers/trainers in a course, or can be developed, self-imposed and followed by a learner themselves.

3.2 Mahara ePortfolio System

It is a good example of an open-source and free ePortfolio system that is used both by learning/training organisations and individual users. The majority of the well-developed LMS platforms also integrate ePortfolio functionalities. There are a number of other ePortfolio software instruments (standalone or web-based) as well, part of them paid, and other part – with free and paid options, the free options being often with somewhat restricted functionalities. (https://mahara.org/).

Another good example of performance, monitoring and tracking software for learning processes is the free software **StudySmarter**. (www.studysmarter.de/en/). It contains nice opportunities not only for monitoring and tracking of learning by

student (day by day, and hour by hour), but also for uploading and creating of learning artefacts and materials, aimed at specific study material.

Other types of learning-directed software that integrates planning and performance functionalities can be used as well, although not especially developed for monitoring and tracking of learning process, or developed for specific types of learning processes. Such an example is already cited EC-project's online platform DojoIBL (https://dojo-ibl.appspot.com/), developed specifically for the needs of the Inquiry-Based Learning (IBL) processes. It allows free creation of different work phases with unlimited number of tasks in each phase. Each task can contain several types of activities. In this way a consequent system of phases can be organised for the purposes of performance, monitoring, and tracking of learning process.

3.3 Planning software that can be used for monitoring and tracking of the learning process

In fact, monitoring and tracking of a learning process can be organised by using any of the (project) planning software, since the monitoring and progress of work is an inherent part of the functionalities of any planning software. Most of this software however have the following drawbacks when used for monitoring and tracking of learning, namely:

- It is **paid software** in the majority of the cases;
- It is **too complex** (or more complex than needed) when used only for monitoring and tracking of learning processes.

PRACTICAL EXAMPLE

An example of such popular paid software is **Microsoft Project**.

However, good planning software with both free and paid options for use, could also be find and used. Two such examples are:

- **ClickUp:** https://clickup.com/
- **Airtable:** https://airtable.com/

These software are web-based, both relatively easy to use, user friendly, and not with overwhelming functionalities. In addition, their free use versions are meant for personal use and have some restrictions in part of their project-aimed functionalities. One can use (and is advised to use!) any of the listed above software also in complex learning conditions, which require complex organisation of learning, e.g. for problem-solving, coping with complexity, challenges, and changes in learning.

TASK FOR STUDENTS

Create rubric for assessment of individual learning plans. Develop the criteria for assessment. The rubric should have four levels of achievement for each criterion (Excellent, Good, Satisfactory, Poor). Fill in the descriptions for each level of each criterion. Assign points to each level of achievement. Make an overall grading scale from Excellent to Poor with a range of points for each grade. You can make the rubric by using MS Office products or you can use particular software for making rubrics from the list with Online free rubric makers above in the chapter.

CONCLUSION

Completing this chapter, you are able to choose appropriate tools for tracking your learning achievements. If you participate as a learner in a guided digital course, you are able to use I efficient way the assessment tools, provided by trainers, to track own progress and to drive your learning. You are able to interpret and react to the results and feedback of the authentic assessment, presented by rubric. Not at last place, you are equipped with digital tools for collecting a learning portfolio and providing evidence for recognition of the learning results.

FEEDBACK QUESTIONS

1. *Number at least three types of questions for assessment of learning results, which could be easily used in digital environment.*
2. *What are the main components of a rubric?*
3. *What is the purpose of the learning portfolio?*

DIGITAL COMPETENCE FRAMEWORKS AND LEARNING PLANS IN ACTION

LEARNING OBJECTIVES

After completing this lesson, the learners will be able to use a particular digital learning environment / platform to implement in practice a competence framework and chosen learning plan.

INTRODUCTION

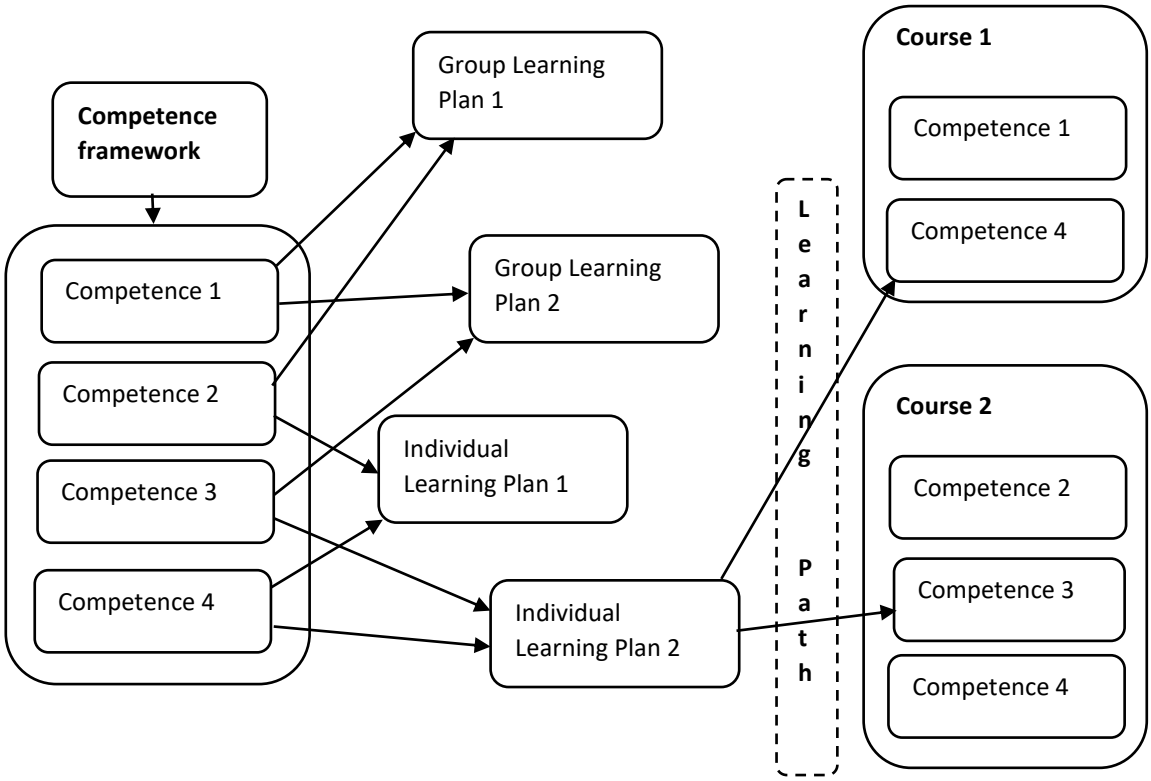
At the end of the module, you will be provided with the 'big picture' of the digitally organized learning process. The topic will help you to 'solve the puzzle' connecting different parts of the learning process, supported by appropriate digital tools, with a focus of achievement learning goals. The experience of guided formal or informal learning in digital environment will provide you with ideas for self-organizing non-formal learning process as well as for effective and efficient participation in digital learning process as a learner.

THEORETICAL BACKGROUND

The digital development of competences is usually done when a given set of related domain competences are grouped within a framework, named **competence framework**. Their digital realization within the Learning Management Systems is usually done at the highest – system level by users with managerial or administrative roles. This is so, since the competence frameworks and individual competences are high top level learning outcomes that are defined for a whole domain, and cannot be changed at the levels of curriculum or instruction. Similar structures have also the systems of learning standards, which are usually defined at the high top level of the educational system.

In the **formal educational settings** (schools, higher education institutions) then, the learning plans for individual users or group of users are defined with the purpose to achieve given **set of competencies** (or standards, if the education is standard-based, and not competency-based). The group learning plans, for given students' cohorts

are then also defined at a top system level, since they are uniform for a given group (grade) of students. The individual learning plans in an LMS, however, can be defined by an individual student through a selection of particular competences (or standards) that have to be pursued and achieved by the student for a given period of time. Particular competence (or standard) can be linked to different study courses, and can be eventually achieved by studying different courses, if it is linked and covered by one or another of these courses. In this way, a student, following their individual learning plan, can select one or another course, covering the same competence, and thus, can follow different **learning paths** on his/her choice, when achieving particular competence. This is demonstrated in the Picture below.



Picture 7: Competence framework, competences, Learning Plans, Courses, Learning Paths
Source: Authors of this module

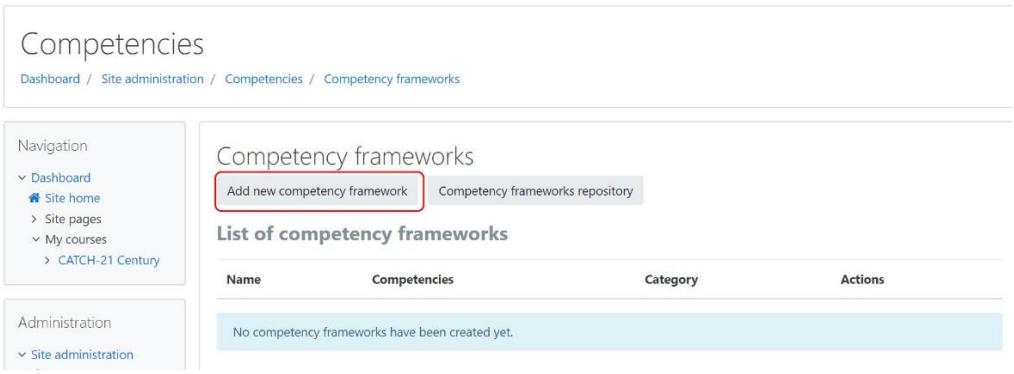
The implementation within a LMS of a developed framework with competences is

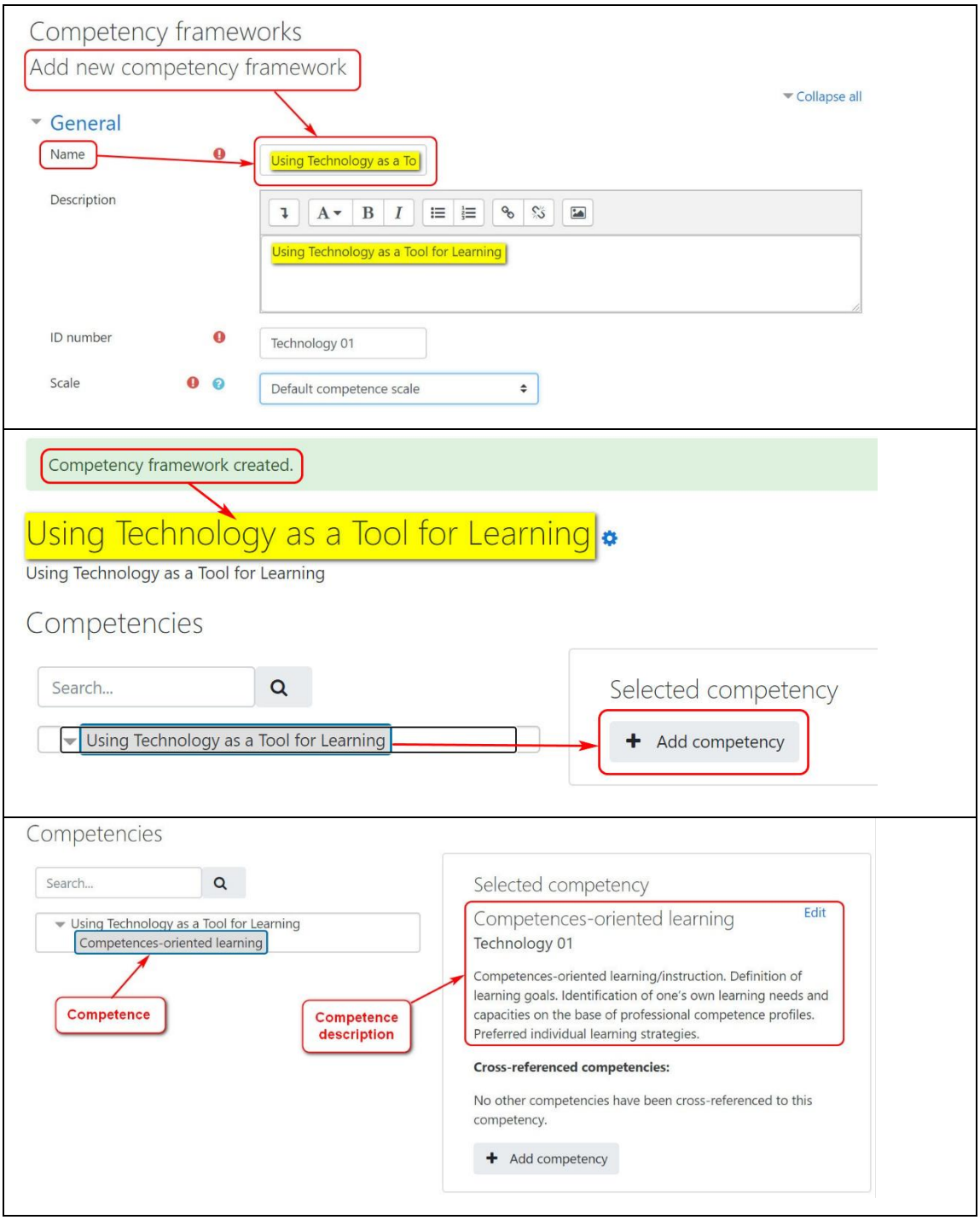
1. A Manager at System level in Moodle creates an empty competence framework, gives it a name, and populates it with the framework competences by adding one by one all competencies in the framework;

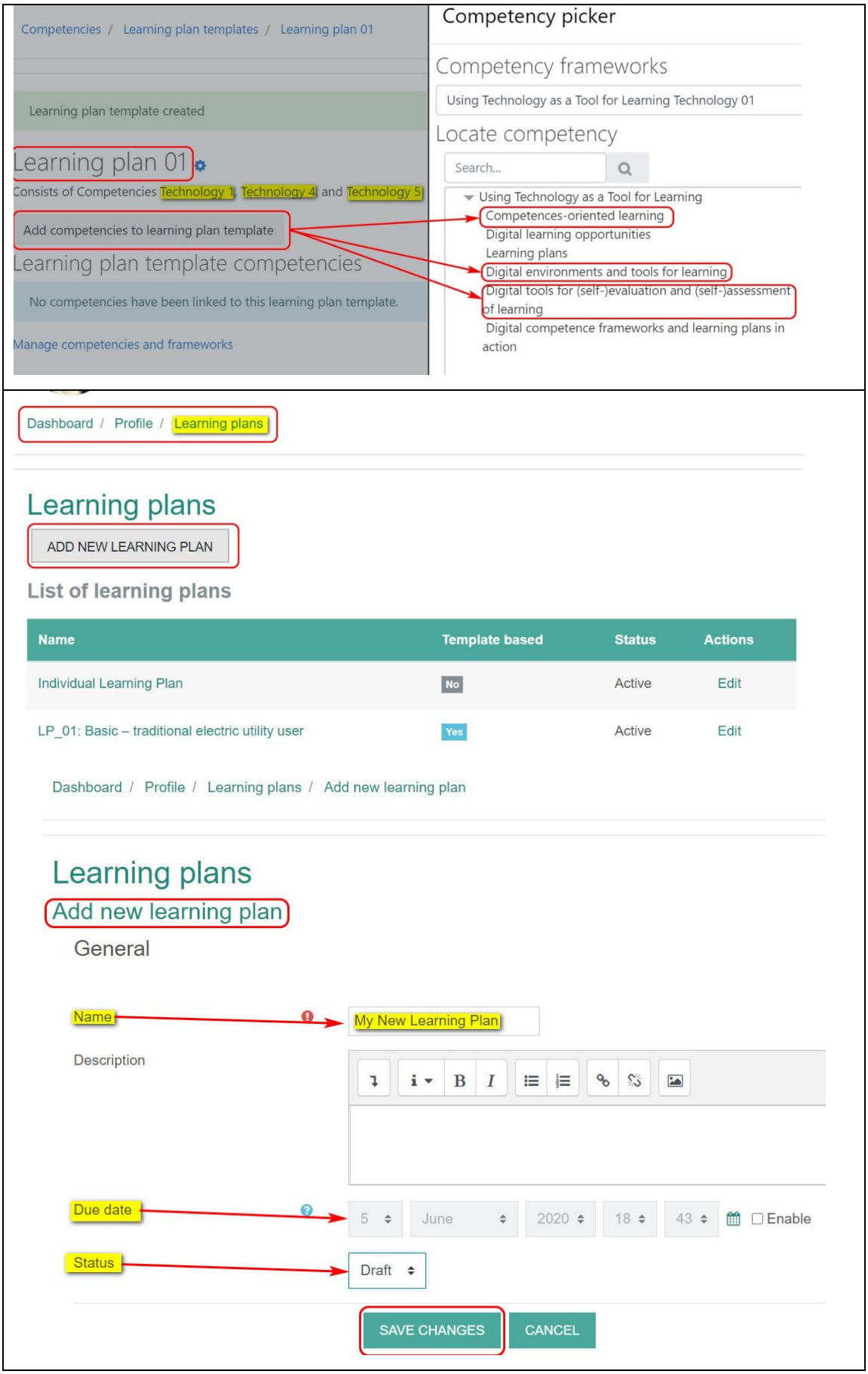
2. When done, s/he can add a Learning Plan Template with a given name, which is a group learning plan, and populates it with a (sub)set of competences from the already created in Step 1 Competence Framework. Then, this Learning plan template can be assigned by the manager to any individual student, or student cohort;
3. Individual Learning Plans in Moodle, can be created by any student from their personal profile in Moodle, under the "Miscellaneous" section of their profile, from the option "Learning Plans". The student has to give name of their individual learning plan, should chose and add the desired competences from the competence framework list, can, if decide, to add due date (completion date) for the plan, and finally, can set the status of their learning plan **as Draft**, or **Active**;
4. Finally, the student can choose an individual learning path for achieving the selected competences in their learning plan by selecting for enrolment study courses in Moodle in which the desired competences are offered for achievement.

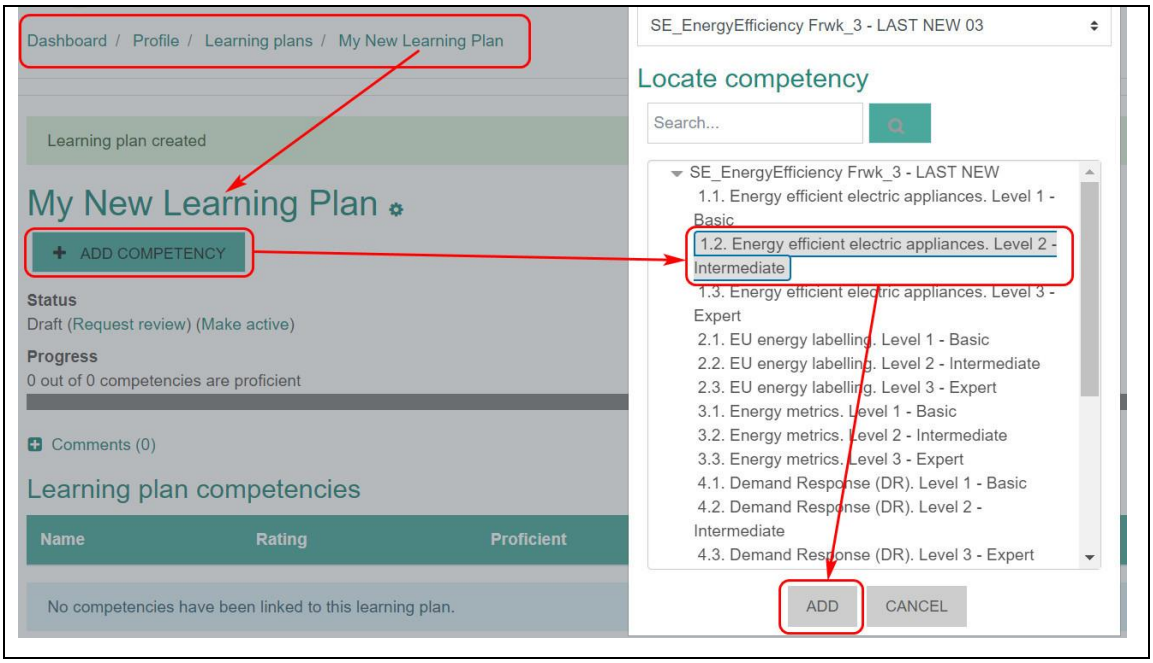
PRACTICAL EXAMPLE

The following shceenshots will guide you, how to create and add a new learning plan in LMS Moodle.




Competency frameworks
Add new competency framework
Collapse all
General
Name
Using Technology as a To
Description
Using Technology as a Tool for Learning
ID number
Technology 01
Scale
Default competence scale
Competency framework created.
Using Technology as a Tool for Learning
Using Technology as a Tool for Learning
Competencies
Search...
Using Technology as a Tool for Learning
Selected competency
Add competency
Competencies
Search...
Using Technology as a Tool for Learning
Competences-oriented learning
Competence
Competence description
Selected competency
Competences-oriented learning
Edit
Technology 01
Competences-oriented learning/instruction. Definition of learning goals. Identification of one's own learning needs and capacities on the base of professional competence profiles. Preferred individual learning strategies.
Cross-referenced competencies:
No other competencies have been cross-referenced to this competency.
Add competency


Competencies / Learning plan templates / Learning plan 01
Learning plan template created
Learning plan 01
Consists of Competencies Technology 1, Technology 4, and Technology 5
Add competencies to learning plan template
Learning plan template competencies
No competencies have been linked to this learning plan template.
Manage competencies and frameworks
Competency picker
Competency frameworks
Using Technology as a Tool for Learning Technology 01
Locate competency
Search...
Using Technology as a Tool for Learning
Competences-oriented learning
Digital learning opportunities
Learning plans
Digital environments and tools for learning
Digital tools for (self-)evaluation and (self-)assessment of learning
Digital competence frameworks and learning plans in action
Dashboard / Profile / Learning plans
Learning plans
ADD NEW LEARNING PLAN
List of learning plans
Name
Template based
Status
Actions
Individual Learning Plan
No
Active
Edit
LP_01: Basic – traditional electric utility user
Yes
Active
Edit
Dashboard / Profile / Learning plans / Add new learning plan
Learning plans
Add new learning plan
General
Name
My New Learning Plan
Description
Due date
5
June
2020
18
43
Enable
Status
Draft
SAVE CHANGES
CANCEL



Picture 8: Creating Individual Learning Plan in Moodle
Source: Screenshot from LMS Moodle

TASK FOR STUDENTS

In Moodle, create an Individual Learning Plan for study of one of the course modules of the "21st Century Skills" course. Add to the plan the competences that are pertinent to this module. During the course, monitor your advancement with the plan and the achievement of the competences from your Dashboard in Moodle.

CONCLUSION

This practically-oriented chapter provides you with a tool for description and implementation of your own learning plan, based on the particular **competence framework**. The practical experience ensures a deeper understanding of the relationships between **competence framework**, **learning plan** and **learning path**. It allows you to develop your own learning path, corresponding to your particular gaps and needs, related to the desirable level on a particular competence framework.

FEEDBACK QUESTIONS

1. *What is the relationships between competence framework, learning plan and learning path in terms of digital learning environment?*
2. *Is it possible one and the same digital learning course to cover different learning plans?*
3. *What does the learning path describe?*

CONCLUSION TO THE WHOLE CHAPTER

Completing the module 'Using technology as a tool for learning' the students are familiarized with the concept of digital learning. They are able to use a competence framework for development own learning plan and to track own progress by the use of digital technologies.

The presented digital tools are appropriate for completing particular parts of the learning process as well as for design and implementation of the full digital learning course. The successful completing of the chapter provide students with possibilities to act as engaged learner, spending own time and efforts in the most efficient way. It provides them also with competences to design and organize a small digital environment for self-education, informal collaborative learning in team or even to provide professional qualification for their teams in a future professional environment.

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https://ai.hrsg.ca/ - Free Tool: See the Competencies for Any Job Description - Competence Creation Tool - See AI-Powered Competency Selection in Action Human Resource Systems Group

https://unesdoc.unesco.org/ark:/48223/pf0000213475 - UNESCO ICT Competency Framework for Teachers

ANNEX - List of digital tools for learning

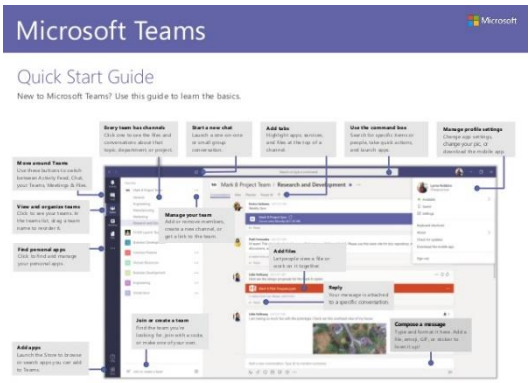
Digital Learning Environments

Moodle

Moodle is a free and open-source learning management system (LMS), distributed under the GNU General Public License. Moodle is one of the most used LMS in the world, in schools, universities, workplaces and other sectors. Moodle supports all functions of a VLE, and has many functionalities, enabling content delivery and communication, learning management process and assessment procedures.

Edx

edX is a massive open online course (MOOC) provider. It hosts online university-level courses in a wide range of disciplines to a worldwide student body, including some courses at no charge. edX is a non-profit organization and runs on the free Open edX open-source software platform. More than 140 schools, non-profit organizations, and corporations offer courses on the edX website. edX has around 18 million students taking more than 2,200 courses online.



MS teams

MS Teams is a DLE, enabling video conferencing, virtual face-to-face discussions and various learning activities.

It supports collaboration with Office 365 instruments, communication tools, assignments, gradebooks and many others.

Google Classroom

Google Classroom is a DLE developed by Google for education providers. It aims to simplify video conferencing, as well as for creating, distributing, and grading assignments. Connected to other Google applications, the primary purpose of Google Classroom is to streamline the process of sharing files and organizing learning processes for teachers and students.

Digital tools for presenting learning content: presentations, digital posters, pinboards, infographics

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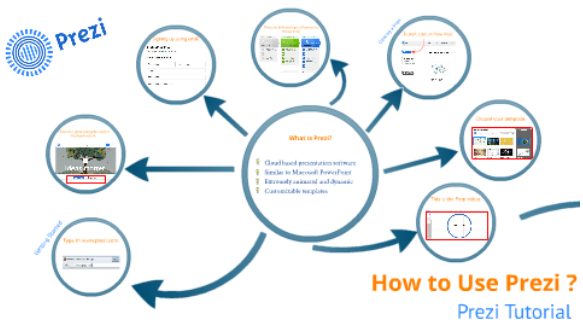
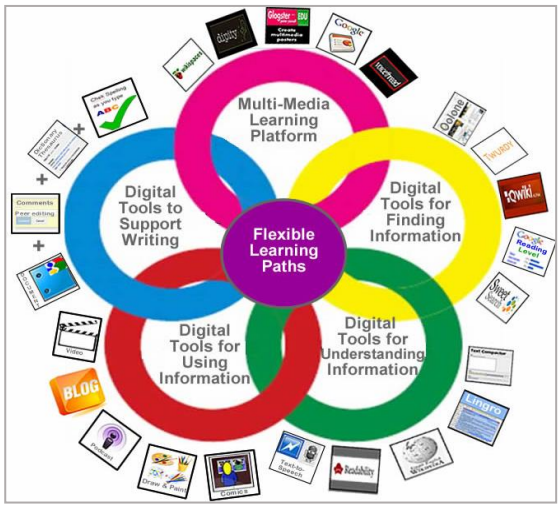


Prezi

Prezi is a digital software for creating interactive presentations, illustrating complex ideas and relationships, incorporating multimedia, text, images and video. Using functions as zoom-in zoom-out, Prezi makes more effective, more persuasive, and more engaging

presentations compared to PowerPoint. It can be used as presentation, visualisation and storytelling tool, keeping the attention of learners.

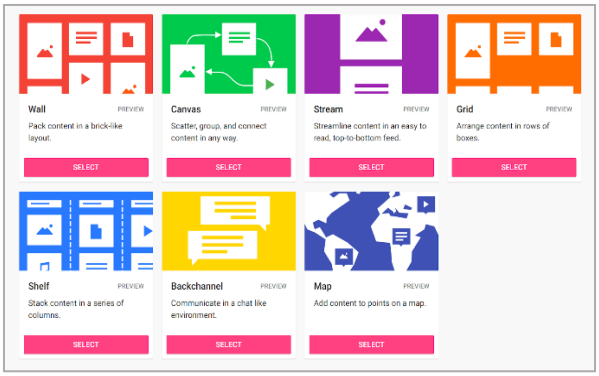


Thinglink

Thinglink allows educators to create interactive images with music, sounds, texts, and photographs. Thinglink offers the possibility for teachers to create learning methodologies that awaken the curiosity of students through interactive content that can expand their knowledge. The educational content can be shared on other websites or on social networks.

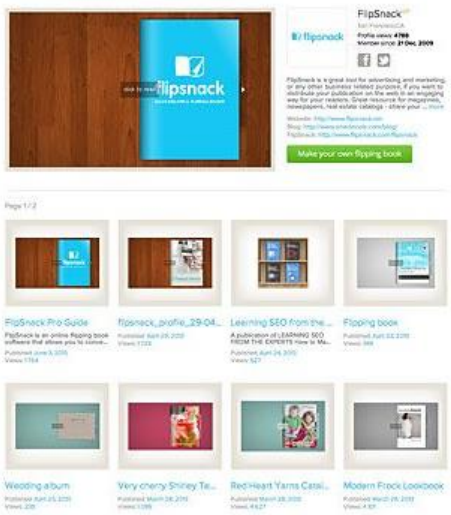
Glogster

Glogster helps learners to make virtual posters, using visual content. This app allows educators and learners to create multimedia posters by combining text information, photos, and videos. The creations are called glogs and stored in a special library called Glogpedia. Containing over 40 thousand different glogs on various subjects and topics, this tool enables effective teaching and learning.



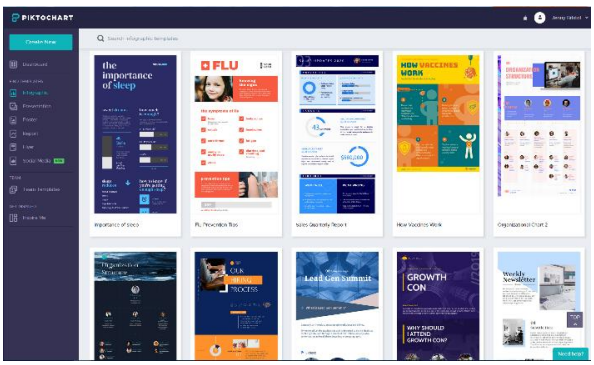
Padlet

Padlet is a digital pinboard for images, videos, text files, links, and more. Padlet motivate students to work together and brainstorm. It can be used to share digital content and to improve the engagement of the students. Some of the Padlet functions: brainstorm for students, discuss topics and share Internet findings and visual aids. It can be used as a tool for organizing student's portfolio, get feedback and assessment.



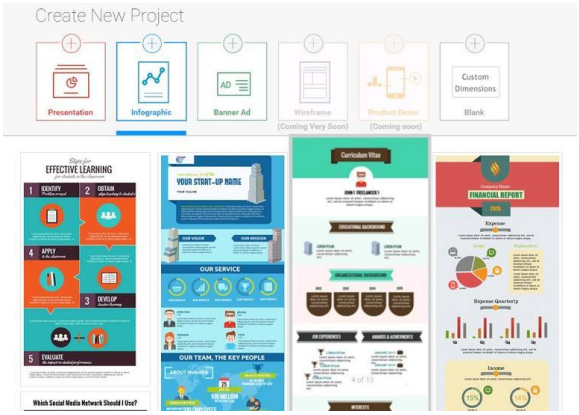
Flipsnack

Flipsnack is an online tool that helps to boost the engagement level of the learners. This is an app for creating digital flipbooks, brochures, presentations and learning materials. This digital tool can be used by teachers for educational purposes and by students for presenting projects in class in a really interesting way. The tool works with .PDFs and .JPGs. To create a flipbook, educators have to upload images, write information and present it to the world.



Piktochart

Piktochart is visualisation app and digital tool which can be used by both educators and students for various educational purposes. This tool allows users to create infographics, presentations, posters, and more visual materials. It is perfect for classroom activity, as well as for home activity.

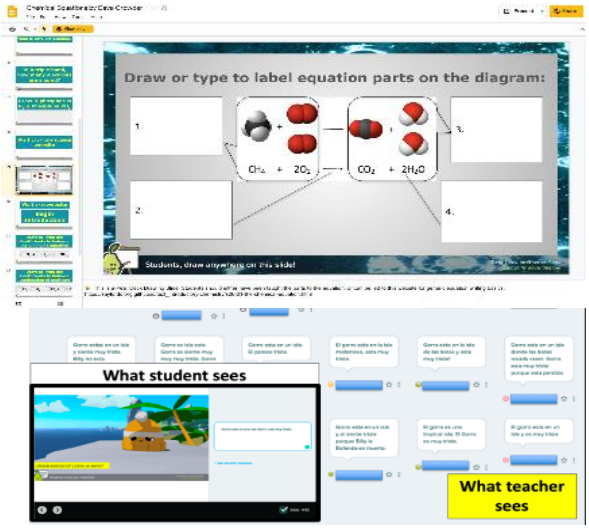


Visme

Visme is another visualisation tool for classroom which provide educators and students with tools to create infographics, presentations, reports and more visual content materials. Visme provides all kinds of templates and graphic resources to help visualize any kind of data or assignment. You can insert videos, make animations, insert links, etc.

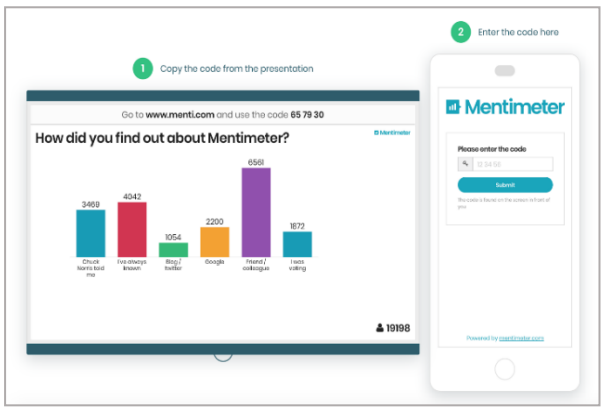
Infogram

Infogram is an easy to use visualization and infographics platform. It has options for creating and sharing infographics, online reports, digital charts, interactive maps, dashboards, and social media visuals. Infogram has an intuitive drag-and-drop editor that converts users' data into infographics that can be published, embedded, or shared.



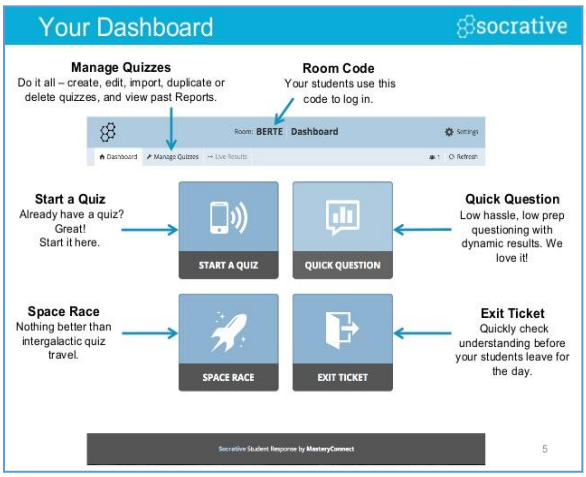
PearDeck

PearDeck is an interactive presentation tool. It enables educators to engage the class, as students can respond to built-in questions using a wide range of tools. With solutions rooted in active learning and formative assessment, it works with learners of every age and ability. It works seamlessly with powerful classroom tools from Google and Microsoft and enable lecturers to design brilliant lessons with interactive questions, polls, quizzes, formative assessments.



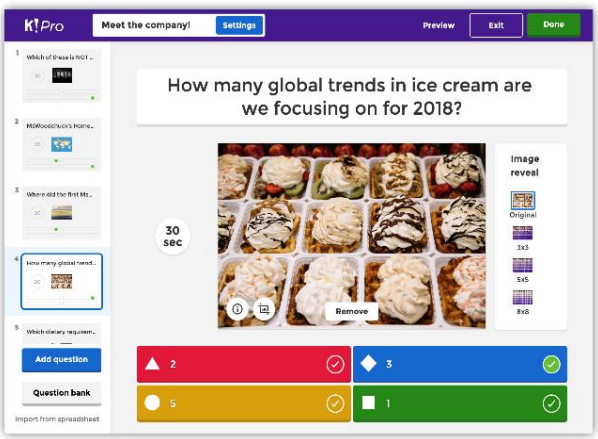
Mentimeter

Mentimeter allows lecturers to build interactive presentations with the easy-to-use online editor. Presenters can add questions, polls, quizzes, slides, images, gifs and more to make more engaging presentations. The audience can vote and provide feedback, answering the questions with their mobiles, as well to get real-time input from remote teams and online students with live polls, quizzes, word clouds, Q&As.



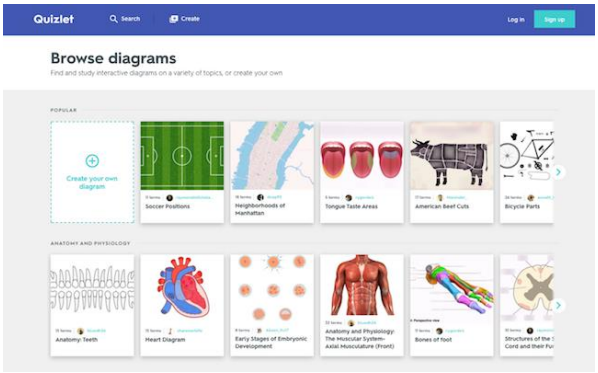
Socrative

Socrative is a digital tool for making classroom activities more engaging. It helps to assess and get immediate insight on students' knowledge. Lecturers can launch various types of assessments and follow the results in real time. Socrative is a system that allows teachers to create exercises or educational games which students can solve using mobile devices. Activities that engage students: quizzes, reporting, chat and discussion rooms, "Space Race" - competition among students and feedback.



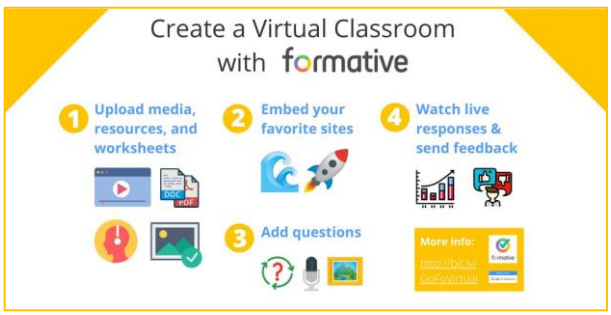
Kahoot!

Kahoot! is an educational platform that is based on games and questions. Through this tool, teachers can create questionnaires, discussions, or surveys that complement academic lessons. The material is projected in the classroom and it supports videos, images, and diagrams to questions. "Kahoot!" promotes game-based learning, increase student engagement and create a dynamic, social, and fun educational environment.



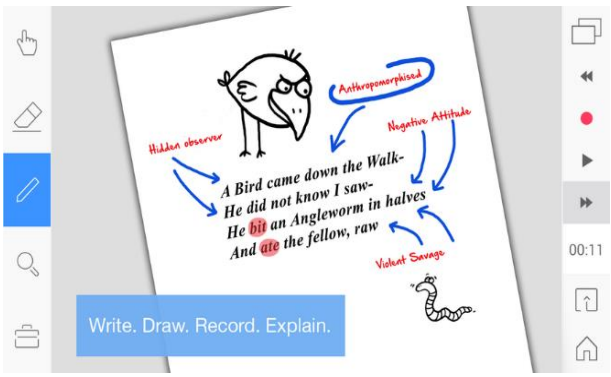
Quizlet

By using flashcards, games and more fun activities, **Quizlet** allows students to learn a subject and assess themselves. Everyone can create their own study set or choose an already existing study set. Quizlet even lets you study on the go, so students can learn and test their knowledge from literally everywhere.



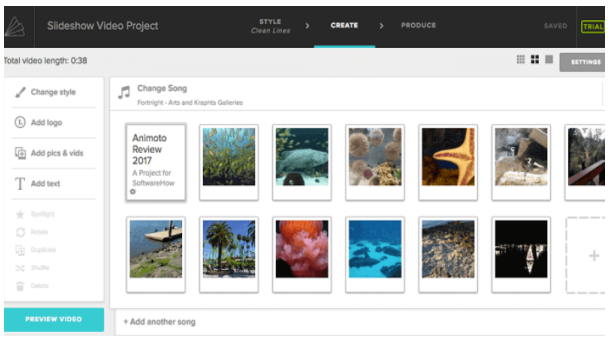
Formative

Formative is a formative assessment software, allowing lecturers to create an assignment and get live feedback from the students. It presents the results with real-time feedback.



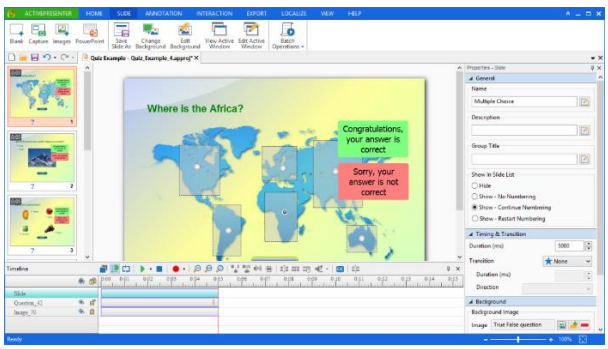
Explain Everything

Explain Everything is an application for interaction in a virtual environment. This digital tool allows students and teachers to collaborate on an interactive white-board thus encouraging group activities. With the drag-and-drop options, Explain Everything is easy and intuitive to work with.



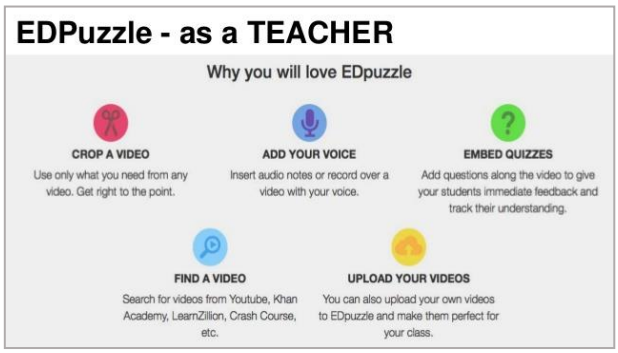
Animoto

Animoto is a digital tool that allows educators and students to create high-quality videos in a short time and from any mobile device, helping to improve academic lessons. The Animoto interface is friendly and practical, allowing teachers to create audio-visual content that adapts to educational needs.



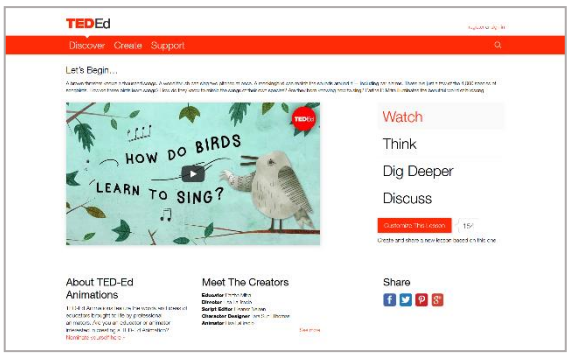
Active Presenter

ActivePresenter is a screen casting and eLearning software which can be used to create software demonstrations, tutorials, simulations, and quizzes. It allows exporting to a series of images, HTML slideshows, documents (PDF, MS Word, Excel, PowerPoint), videos (AVI, MP4, WMV, WebM), and interactive simulations (HTML5).



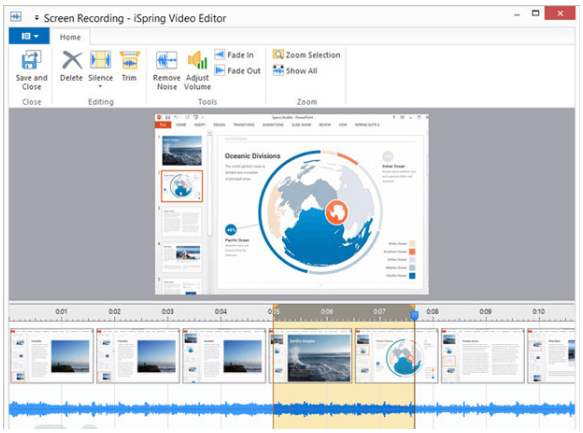
Edpuzzle

Edpuzzle is a big booster for flipped learning teachers. Lecturers can customize regular videos with engaging interactive learning tools. They can add quizzes and feedback, as well track students' actions and progress with this tool.



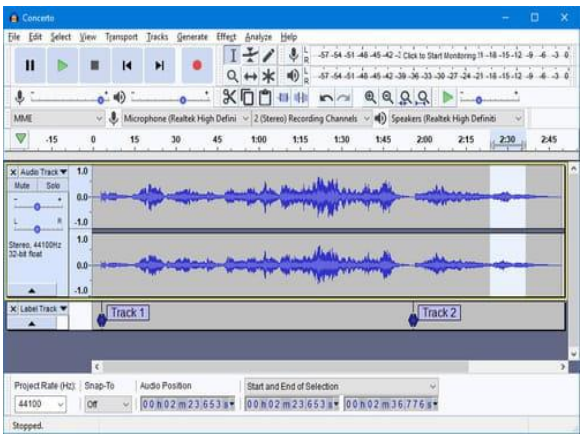
TEDEd

The **TED**'s tradition of excellence continues with supporting educators to use videos as teaching resource. Lecturers can watch videos, explore lessons, and view learning series compilations of all kinds. Lecturers can create additional activities by adding quizzes (think), additional questions (Dig deeper) and encourage further discussions.



Free Cam

Free Cam is a simple screen recorder for Windows. It provides a full set of features for creating professional video lessons such as selecting a recording area, recording a voice over and system sounds, and highlighting the mouse cursor. Lecturers can save screencasts on their desktop or share videos on YouTube.



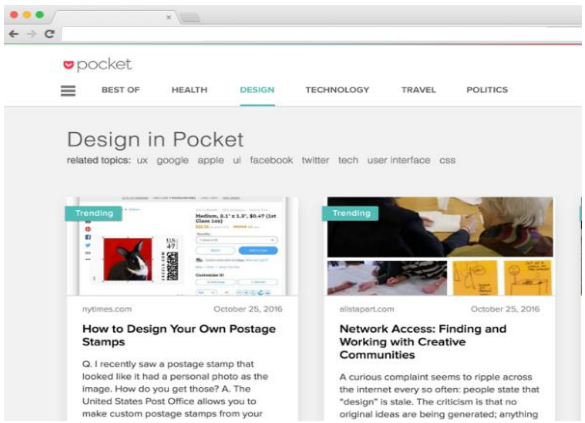
Audacity

Audacity is free open source and cross-platform software for recording and editing audio. With this tool, lecturers can record live audio, cut, copy, or mix sounds together, change the speed or pitch of a recording, and much more. Audacity offers a free, professional-quality service with a full suite of editing capabilities: editing background noise, copying and pasting audio, separating and combining audio tracks, etc.

VoiceThread

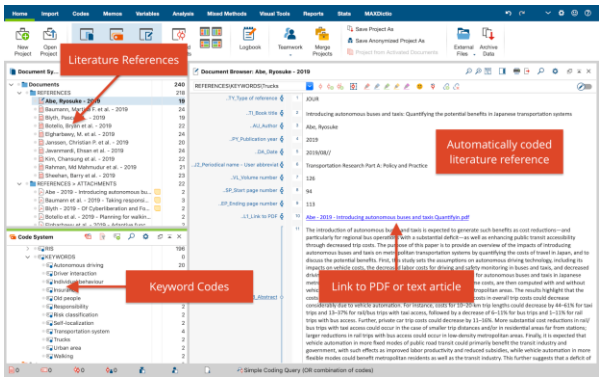
VoiceThread is basically an app for presentations and storytelling which actually records the student talking. This way, the students can practice their speaking skills while building confidence and allows teachers to assess their work.

Tools for organizing, bookmarking and collecting learning materials



Pocket

Pocket is a bookmarking tool for lecturers and teachers on the go. It can be used to save articles, videos, images, and lots more for later viewing.



Zotero

Zotero supports saving academic research artefacts with a single click, with access to a library of citation support materials. Zotero reminds that citing sources is more complicated, and collecting those works cited pages are an important part of the academic and social learning process.

21st Century Skills Social Constructivist Didactic Guide

Erdinç Duru – Asuman Duatepe Paksu – Murat Balkis – Sibel Duru

MOTTO: „By giving our students practice in talking with others, we give them frames for thinking on their own."
Lev. S. Vygotsky

21ST CENTURY SKILLS SOCIAL CONSTRUCTIVIST DIDACTIC GUIDE

Rapid changes in the world affect not only social and economic structures but also the educational process. Although the role of education has not changed since the industrial revolution, subjects, skills, and competencies are changing according to the market needs. As the main role of education is to train a skilled workforce for industry, the educational objectives also change to cope with the industry's demand. Therefore, 21st Century Skills are becoming more important for the competitive and constantly evolving world of work. The teaching of 21st Century Skills are the main aim of the Erasmus+ project, CATCH 21st Century Skills, and this didactic guide is one of the intellectual outputs of this project. The main objective of this guide is to give practical hints to academic staff on how learning processes should be organized, how the learning environment should be planned, how motivation factors of the target group should be regarded and what kind of adult training and facilitation techniques should be used according to the principle of Vygotsky's constructivist theory.

TEACHING AND LEARNING APPROACH OF 21ST CENTURY SKILLS

In the rapidly developing information and technological age of the 21st century, the development of 21st Century Skills is critical for the use in both social and economic life. 21st-century skills are high-level skills, and it is challenging to develop these skills with traditional educational models because the development of these skills is process-based rather than product-based. Therefore, in order to support the development of these skills, it is essential to expand, not only our understanding of constructivist education, but more specifically, social constructivist education.

Social constructivism is a theory of knowledge and learning, not practice. Therefore, an understanding of the meaning and basic assumptions of (social) constructivism can be seen as an important step in creating a (social) constructivist learning/teaching environment. However, in the constructivist approach, there are different views, i.e. radical, cognitive, and social constructivism, on how the

information is formed. All constructivist theories see learning as the process of creating meaning through internalized experience. In other words, it is claimed that knowledge is socially structured (Demirel, 2005; Duru, 2005; Driscoll, 2000; Fosnot and Perry, 2005; Ormond, 1999; Pepin, 1998; Richardson, 1997; von Glasersfeld, 1995; Vygotsky, 1978). In short, constructivists believe that we make sense of the world through our experience. Experiences provide us with conceptual, theoretical, and relational abstractions (Duru, 2005).

According to the traditional understanding of education, "The reality is independent of human ideas; the underlying reality is organizational principles that can be discovered; the truth is achieved through systematic and specific observation of reality; the aim of the research is to control and predict human behavior" (Peca, 2000, p.9). This philosophical understanding breaks the link between facts and meaning, theory and observation, and the observer and the observed (Fleury, 1998). On the other hand, the (social) constructivist understanding can be characterized through two different philosophical views. First, people historically and culturally construct information themselves in connection with their environment (Duru, 2005; Fleury, 1998; Ormond, 1999; Pepin, 1998; Vygotsky, 1978). Second, "the function of cognition is to organize one's experiential world, not to discover an ontological reality" (Fleury, 1998, p. 158). According to Pepin (1998), "there is no constructing a phenomenon unless it has already figured in the field of experience" (p. 177). Therefore, the main focus of social constructivism is the social process of constructing meaning from one's individual experiences with their environment (Richardson, 1997; von Glasersfeld, 2005; Vygotsky, 1978).

LEARNING AND TEACHING

According to social constructivism learning, in addition to knowledge and reality, is also a social, meaning-making, and internalization process. In other words, social constructivists believe that learning is the process of giving meaning and internalization, and claim that knowledge is socially constructed by students to acquire self-regulation and self-reflection (Driscoll, 2000; Fosnot and Perry, 2005; Ormond, 1999; Richardson, 1997; von Glasersfeld, 1995; Vygotsky, 1978). In this

model, authentic experience is the primary learning process. According to constructivist understanding, it is argued that we conceptualize the world through experiences that provide empirical and reflective abstractions, including concepts, relationships, and models that are actively developed in the process of assimilation, accommodation, and balance. (Brooks and Brooks, 1999; Demirel, 2005; Driscoll, 2000; Oxford, 1997). In addition, new experiences must be built on pre-existing experiences for learning to occur (Garrison, 1998; Pepin, 1998).

Vygotsky (1978) also argues that a socially productive environment is needed for learning and that the cognitive functions of the individual develop more when working with more experienced individuals. According to social constructivists, information is formed through a joint decision by a social group. When structuring meaning through a social context, individuals share meaning they create and affect the thoughts of other individuals. They, themselves, are then influenced by these individuals (Fer & Cırık, 2007). Verenikina (2010) notes, "Vygotsky stated that the human mind constructed through a subject's interaction with the world and is an attribute of the relationship between subject and object" (p.2). Emphasizing the socio-cultural dimension of constructivism, Vygotsky states that the direction of cognitive development is from the environment to individual. Internalization and assimilation are essential for acquiring knowledge in one's social environment. Another critical element in this process is language. Language plays a crucial role in building social environments (Hickey and McCaslin, 2001). According to Demirel (2005), the individual transfers information to other individuals around them through language. Demirel (2005) states that there are three primary functions of language: external speech, egocentric speech, and inner speech. While cultural information is formed through external/social speech, the process of meaning is conceptualized by establishing relationships between information through inner speech (Demirel, 2005).

Hickey and McCaslin (2001) argued that, in the social constructivist approach, individuals and society are considered inseparable from each other. For this reason, the social forces of a given society gain importance in the constructing process. Therefore, the social effects of a society gain significance in the process of the

construction. Basically, this approach argues that culture and learning experiences cannot be separated. Each culture has a specific style of thinking and skill. The social constructivist approach suggests that educators have to consider cultural structure because differences in a cultural structure lead to variations in the development and learning processes of children (Hickey and McCaslin, 2001).

According to social constructivism, knowledge is initially constructed in a social context, and then individuals internalize and use this knowledge (Bruning, 1999; Cole, 1991; Eggan and Kauchak, 2004; cited in Amineh and Asl, 2015). As quoted in Cooper, Basson, and Schaap (2006), Derry (1999) claimed that social constructivists give great importance, not only to culture, but also to context in the understanding of what is happening in a society and the creation of information based on this understanding. The worldview not only recognizes the exceptionality and complication of the student but also emboldens, assesses, and rewards them as an integral and significant part of the learning (Gredler 1997; Wertsch 1997; cited in Cooper, Basson and Schaap, 2006).

Social constructivist learning environments should be different from traditional learning environments. In the traditional learning environment, the content of the lesson is divided into small topics so that the student can get information more quickly, memorize, and repeat when necessary. However, since the experiences of people cannot be separated from their social context, a social constructivist learning environment integrates the course content and student experiences into the social environment.

As traditional educational settings expect standard, skill centred learning products from all students, social constructivist teachers are open to different thoughts, knowledge, and experiences from students. This is because these experiences and differences are considered vital to understanding a student's mental development and how they make sense of the world they live in (Desautels, Garrison and Fleury, 1998; Dewey, 1916; Vygotsky, 1978). In addition, social constructivists believe that human experiences cannot be separated from their own context. As a result, social constructivist teaching is highly integrated in terms of content while focusing on social integration through collaboration. While traditional education is basically

defined as a technical task, social constructivist education is an intellectual and ethical effort focusing on a student's' strengths and potentials, aiming to help students understand their world by developing alternative ways of seeing cultural, social, economic aspects and critical thinking (Desautels, Garrison and Fleury, 1998).

THE ROLE OF INSTRUCTOR AND STUDENTS

From a social constructivist perspective, the central role of the educator is to facilitate student learning. The instructor as a facilitator is concerned not only with what students learn but also with *how* students learn. The educator's aim is to help students manage and empower themselves (Oxford, 1997). In other words, one of the primary responsibilities of the instructor is to investigate what is happening in a student's mind (von Glasersfeld, 1995, 1998). Instructors should help students reflect, evaluate, and test their results (Fleury, 1998). Instructors using this approach are not only facilitators but also learners who are willing to learn from students.

In a social constructivist environment, students become aware of their strength and their ability to construct reality, make decisions, and reflect on their experience. They become aware of the investigations that support the self-regulation process and individual autonomy (von Glasersfeld, 1998). According to Freire (1921), constructivist teaching develops people's critical insight into the world in which they find themselves. They perceive the world not as a static, but transforming reality.

Social constructivist environment, focuses on the needs, prior knowledge, and interests of the students instead of using specific targets (Pepin, 1998; Ravitz, Becker & Wong, 2000; Vygotsky, 1978). Social constructivists are not only aware of the differences between students and the need to use different teaching strategies, but also why specific teaching strategies must be used before, during, and after the learning process (Brooks and Brooks, 1999; Loughran and Russel, 1997). In other words, instructors with social constructivist beliefs focus on different learning needs and the interests of students, and help students develop sophisticated mind habits (Bauersfeld, 1998; Dewey, 1916; Noble and Smith, 1994; Ravitz, Becker and Wong, 2000; Vygotsky, 1978).

In the social constructivist learning environment, students actively participate in the learning process as an essential part of the context (Desautels, Garrison & Fleury, 1998; Oxford, 1997). The instructor believes that students bring experience to university, thus motivating students to learn something outside of the standard curriculum (Pepin, 1998). Therefore, social constructivist instructors believe that the information given to students should be processed mentally, and students should be active in this process (Brooks & Brooks, 1999).

In sum, the underlying assumptions of the social constructivist approach, which puts the individual as the natural recipient, interpreter, and constructor of knowledge, are as follows:

1. The learner should be active.
2. Each individual should be responsible for his/her own learning.
3. A knowledge is gained from an experience. Learning is a personal interpretation of an individual's experience.
4. The learning is a dynamic process that is based on experience.
5. The learning environment should be organized realistically and should not be structured as a separate activity.
6. The learning emerges from interactions, sharing perspectives, and changes in internal interpretations.
7. A knowledge and meaning are produced in the culture, through language and interaction.
8. The learning can be evaluated in connection with performance.
9. The learning process experienced by a student is more important than the behavioral outcomes.
10. The role of the teacher changes to become a guide, a helper, or a guide facilitating students' learning.
11. The teacher prepares the learning environment and facilitates the detection process of knowledge.
12. The students' prior knowledge affects the learning.
13. The social interaction plays a critical role in the learning.

14. Intrinsic motivation is essential in learning.
15. The learning occurs in a social context.
16. The language, the culture, and the context are indispensable in the process of making meaning. The meaning is created through language in the culture and the context.
17. Primary data sources are often used in learning.
18. The learning environment is based on real-life problems, big questions, or themes.

SOME EXAMPLES FOR INSTRUCTIONAL MODEL

The instructors should use a variety of methods in the classroom and include more contemporary teaching strategies. Methods suitable for social constructivism can be as follows:

1. Problem-based learning
2. Project-based learning
3. Cooperative learning
4. Case study
5. Disputation

The learning environment is guided by the teacher that plays the role of a **facilitator**.

- **WHAT**: An instructor should develop a **learning environment** that relates to and reflects his/her students' social, cultural, and linguistic experience. The instructor acts as a guide, a mediator, a consultant for students, and helps to relate culture-based information to students' classroom learning experiences effectively.
- **WHY:** Meaning is created only when it is based on the **active participation** of students and their **previous experience**. The instructor should take into a consideration students' prior learning in order to develop their cultural backgrounds, knowledge, and skills. In this way, transferring what is learned at school into real-life situations is facilitated.

- **HOW:** The instructor creates a learning environment or context to link students' previous experiences and issues to be gained through topics, themes, or questions.

Problem Based Learning

Problem-based learning is an example of a social constructivism approach. This learning approach uses **real-life problems** to stimulate student learning rather than direct teaching techniques. It initially appeared as a reaction to traditional teaching since it was not successful in raising **medical school students** for clinical situations (Hung, Jonassen, & Liu, 2008).

The problem-based learning was initially considered by Barrows and Tamblyn for the medical school program at the McMaster University in Canada (Barrows, 1996). They believed that **learning in small teams** by working on clinical cases could provide a more relevant and motivating experience for the students. Unlike traditional education at medical school, this method encouraged learning by letting medical students appreciate the application of what they were learning by engaging them in real-life applications. In other words, problem-based learning embeds learning experiences in real-world medical problems, rather than studying subject knowledge first and practice context-free questions. Problem Based Learning has been used widely in the European countries, the USA, Australia, and Asia after this first attempt (Bligh, 1995).

Although it was first used as a very effective way at medical schools, eventually it has been using in many disciplines such as health sciences, engineering, business, dentistry, social work, management, architecture and also in K-12 education.

Generally, in the problem-based learning environment, the content was covered by problem-solving. Problem-based learning evokes other desired skills and competencies as well. For instance, besides sound content knowledge acquisition and problem-solving skills, **collaboration** and **communication,** and **critical thinking skills** are also emphasized (Duch, Groh and Allen, 2001). With this point of view, problem-based learning is considered to be a social constructivist method.

Researchers relate problem-based learning and social constructivism with connection points (Hung, 2011; Yew and Schmidt, 2011). In problem-based learning environments, students are encouraged to work as a group. In this working group environment, they face a **real problem**. Their previous knowledge is stimulated through discussion within the team, so that collaboration and communication are promoted. Related to their problem, students create a model that describes the problem. Then they work individually to find a possible solution to the problem. Again, they come together as a group and discuss different solutions in their group. Finally, they construct reasonable suggestions for the solution process of the problem altogether. Consequently, they construct a **shared and collective meaning** together.

In this learning approach, the instructor facilitates the students in problem-based learning journey. The main role of the teacher is to help the students throughout scaffolding, which personalized to each student and group. Therefore, rather than feeding with the knowledge, the role of the instructor is being a guide and a **facilitator**. This emphasizes the importance of indispensable mechanisms of problem-based learning: **feedback and reflection**.

Duch, Groh and Allen (2001) summarized the common properties of a decent problem case while it changes among fields according to the attributes of the discipline. These can be listed as follows:

- If the problem case is designed for a **multileveled study**, the opening stage should be flexible and motivating for the students.
- The problem should be **strongly connected with content objectives** and also in accordance with **prerequisite knowledge**.
- The problem should involve making **logical conclusions** and decisions and justifying them.
- The problem cases should be designed to encourage students to search for a **sound comprehension of concepts**.
- The problem should entail **various levels of complexity** to guarantee that the students with individual differences could cooperate to solve it.

Problem-based learning can be adapted to many learning fields with a slight adaption and inspiration. Moreover, it can be applied to many learning environments such as labs, classrooms, hospitals, and design classes. Duch et al., (2001) propose a variety of guidelines for practical usage of problem-based learning:

- Begin with a core principle, rule, formula, idea, concept, etc. Then imagine a particular end-of-chapter task such as a problem or assignment. The end-of-chapter task refers to a task usually given to students at the end of the specific unit, chapter, term etc. to evaluate what they learn. Make a **list of expectations** that students should get during this learning process.
- Create an original context related to the subject. Several **sources** can be used for the context, such as textbooks, reports, magazines, booklets, books, newspapers, social media, radio podcasts, television, etc. These sources can be used as actual cases, or little editing can be utilized so that a real-life case related to the end-of-chapter problem was constructed.
- Get acquainted with the problem so that you are able to recognize that working on this problem will bring the aimed ideas, principles, etc.
- Prepare instruction guidelines describing the plans in which instructional techniques of the process are determined.
- Determine the crucial sources and facilities for students. Although students should find and effectively use learning resources by themselves, the instructor can specify few decent resources to give students examples.

An adequately designed problem-based learning environment provides the following benefits:

- Problem-based learning is a profitable way to improve content knowledge by utilizing the direct **application of the course content to real-life situations**. During this process, researching and information literacy can be enhanced.
- As it is a student-centered approach, active learning, and thereby meaningful comprehension can occur. This also supports the **retention of learning**.

- Problem-based learning **encourages working in a team** so that it supports students to develop **collaboration and communication skills**.
- Students need to work individually to find a possible solution to the problem after they are introduced to the challenge and later discuss the issue within their groups. In essence, this individual part of the problem-based learning approach fosters **self-directed learning** and independent learning skills.
- Problem-based learning motivates students to create a model for the desired expectations, so students are asked to make **deduction**, which supports **critical thinking** and **problem-solving skills** (Barret, 2010; Nilson, 2010; Wood, 2003).

Project-Based Learning

Similar to problem-based learning, project-based learning is another example of social constructivism approach. The primary aim of this method is to engage students in **genuine experience**. Students track knowledge related to their interest and curiosity. Project-based learning is a student-driven approach that encourages students to solve the problems they may encounter in their lives in a classroom environment by connecting with different project. This point reveals the difference between this approach and problem-based learning. In this approach, learners find out problems during their work on a project, problem-based learning design learning activities by providing particular issues. As it improves students' problem-solving skills, it helps to achieve objectives at the level of application, analysis, and synthesis. The general characteristics of project-based learnings are as follows:

- In project-based learning, and **interdisciplinary** problem or scenario is studied.
- It is a method carried out intending to provide skills suitable for **real life.**
- Although the presentation of a product is desired, the important thing is the **process** of the project.
- The teacher is in the role of a **guide.**

- There is a **pragmatic**, progressive understanding (Krajcik and Blumenfeld, 2006; Markham, 2011).

Project-based learning relates to John Dewey's **learning by doing** approach. In comparison with an instructor-centered instruction, the project-based learning is **student-driven**. This method takes students into the center and engage them with **authentic projects**. The instructor takes a role of a **facilitator,** he/she designs a worthwhile task, plans a decent project based on ideas meaningful to the students, and helps to enhance students' knowledge, and supports their social skills developments.

Project-based learning is also connected with a **"situated learning"** perspective, which is founded by Lave and Wenger (1991), who considered learning to be influenced by **natural world**. Similar to Lave and Wenger's ideas, learning is an integral part of **authentic experience**, and it is not isolated from a social practice.

Table 1: Main action steps in project-based learning

STEP	ACTION
1	Setting goals
2	Identifying the problem to be addressed or identifying the work to be done
3	Determination of hypothesis and presentation type of the final report
4	Determining the evaluation criteria and proficiency levels
5	Creating teams
6	Determining sub-questions
7	Planning the data and information collection process
8	Creating the time table and work schedule
9	Collecting information
10	Organizing and reporting data
12	Presentation of the project

Source: Moursund, 1999

During project-based learning students train self-regulation, critical thinking and ICT skills and a variety of concrete skills such as managing a meeting, preparing a budget, goal setting, decision making, problem-solving, time management, positive attitudes towards the subject and positive belief related to the subject. Other advantages of project-based learning can be summarized as follows:

- It enables participation in group-based and collaborative learning activities.
- It improves students' learning skills.
- It provides life-long learning.
- It suggests several ways for students' participation.
- It allows the use of different dimensions of intelligence (interpersonal, kinesthetic, spatial, logical-mathematical, verbal, etc.).
- It strengthens problem-solving skills and problem-based learning skills.
- It creates an opportunity to apply new knowledge and skills gained through the project on different topics (Erdem, 2002; Hamurcu, 2000, Krajcik and Blumenfeld, 2006; Markham, 2011).

Cooperative Learning

Cooperative learning is another social constructivist approach that organizes students from different academic and skill levels, gender, race, etc., with a common purpose and makes them work in small groups during the learning process. The main characteristics is working in groups to **achieve goals** together with the group members. In reality, the learners work in small groups, helping each other to learn and trying to **maximize their learning** (Açıkgöz, 1992; Johnson and Johnson, 1989). With this social constructivist perspective, the principle is **the group succeeds if everyone succeeds**. Therefore, the group members cannot race with each other, they need to learn cooperatively and help each and benefit from each other's' ideas, assistance, resources, abilities. The typical characteristic are sharing and working supportively together. The core goal is to maximize learning of the whole group and its group members.

In a cooperative learning, the atmosphere is not as competitive as in traditional teaching. Furthermore one of the essential effects of cooperative learning is not only academic achievement like in traditional education. Many other achievements besides academic ones are quickly succeeded through cooperative learning, for example positive attitude to learning, reading habits, working with others, self-esteem, leadership, sharing, collaborating (Açıkgöz, 2003). Cooperative learning is also connected with the improvement of the **student satisfaction level**, which emphasizes the importance of collaborative learning.

For a successful cooperative learning experience, important components of cooperative learning were determined, for example positive interdependence, individual and group accountability, face-to-face promoted interaction and other interpersonal skills (Johnson, Johnson and Holubec, 1994).

Regardless of the group size, there are five important components for being successful in cooperative learning activities.

1. Positive interdependence: This is the core component of cooperative learning. Positive interdependence can happen when group members realize that they are interconnected with each other. With this perception, they can commit their work to help each other. The very well-known motto of **"swim or sink together"** refers to this element. When group members believe that if one fails, all fail, and on the contrary, they can succeed when everyone succeeds, they can contribute altogether and devote their work and energy to their group.

2. Individual and group accountability: This competence indicates that each student and group should be responsible for attaining the **group's objectives**. The group should know about its aims clearly and monitor its improvement in achieving them. Each group member must be responsible for common learning and show the expertise of the subject. Separate accountability of each individual can be supported if the grades are set to the group itself after each group member's performance is measured.

3. Face-to-face promoted interaction: Cooperative learning can take place when group members promote each other's success with **effective communication**. They should clarify what they are learning and help each other during learning activities. Interaction can be promoted not only to share physical capitals but also encouragement, assistance, and support. The praise of other group members' work is very important.

4. Interpersonal and small group skills: In addition to academic skills, **social skills** are also crucial in cooperative learning. Various personal and interpersonal skills, including reasonable decision making, effective communication, effective leadership, friendship-building, positive criticism, are utilized in a cooperative learning environment. These skills help group members to act as an effective and productive group.

5. Group processing: In the cooperative learning environment, a group processing occurs when group members reflect on the **evaluation of their achievement**. They need to describe their achievement level as well as working process. Groups are required to evaluate what activities are cooperative and useful and what are not. This evaluation helps to plan the next working steps.

The benefits of cooperative learning, according to literature, can be summarized as (Johnson and Johnson, 1989; Slavin, 1996).

- It creates a chance to participate different and diverse groups of members (gender, nationality, level of education and so on).
- It enhances empathy and perceptions of others.
- It supports self-concept and self-esteem.
- It builds positive interactions among learners.
- it maximizes the possibility of finding of creative explanations and innovative ideas.

- It encourages friendship, positive attitude, motivation, beliefs towards a subject.
- It increases the attendance rate.

Case Study as a Teaching Method

A case study as a teaching method uses real-life scenarios, including a problem(s) or target issue. In literature, the case study is called differently, such as case-based teaching, case-based learning, case-based approach, or case-based instruction. Case-based instruction is not a new method, it has been used at the Harvard Law School since 1870. However, after 50 years it was applied to the business schools and later it has become widespread in other professional fields (Grevetta, Beerb, Odendaal-Kroonb and Mersethc, 2017).

In case-based instruction, students have a chance to construct their knowledge by describing, analyzing, and solving complex real-life problems collaboratively. The role of instructor is a **facilitator** of the process of the students' **knowledge construction**. The well-designed case-based instruction provides students with opportunities to see theory-practice relationship, it increases students' practical knowledge through reflection, it develops their higher-order thinking skills such as **critical thinking**, **problem-solving**, **decision making** and **collaboration skills** (Bi, Zhao, Yang, and Wang, 2019; Grevetta, Beerb, Odendaal-Kroonb and Mersethc, 2017; Herreid, 2007).

Some rules for a good case study are:

- The teacher has to tell an **exciting story** at the beginning, middle or at the end that relates to the students' experiences.
- The case study has to be **real**. It must be related to real-life events, real-life problems, and actual work conditions, and real people.
- The teacher has to focus on exciting and educationally valuable issues. He/she has to explain the instructions very precisely when selecting the cases.
- It should develop students' **empathy skills** through their imagination themselves to be in the position of some person in the case study. Having

empathy helps to build better human relationships, to become a better team player, to look at case from a different perspective.

- The case study has to include **quotations** from the story characters (persons). The quotes make the story more realistic and make it easier for students to empathize.
- It has to bring a **challenge** to students. Thus, students need to think and analyze the event more deeply.
- The teacher has to force students to **decide**. Case should provide students with a dilemma in the relevant field, enabling them to confront situations that they have never encountered before.
- The case study should have an element of **generality** rather than individual or local curiosity, so that students can transfer what they gained from the discussion of cases to different problems.
- The case study has to be long enough to explain the problem situation and short enough not to distract students.
- The case study has to be **sophisticated** and **interdisciplinary** as much as possible.
- The case study has to be **goal-oriented** (Herreid, 2007; Tian, 2018).

Teachers who want to use case-based instruction in their courses can find well cases from novels, films, television programs, scientific articles, and newspapers or magazines. For example, Jurassic Park can be used as a case for discussing scientific ethics and DNA technology (Herreid, 2007).

Teachers are recommended to use case studies which are related to their course objectives. The main steps for writing of the effective case study are:

- decide a topic,
- decide all possible principles,
- decide possible characters,
- write a draft,

- decide which terms and concepts are introduced in the case,
- decide major and minor topics that will arise in a discussion of the case,
- write discussion questions for each section (Herreid, 2007).

There are excellent examples of the case studies on these websites:
http://sciencecases.lib.buffalo.edu/cs/collection/
https://www.aacu.org/stirs/casestudies
https://naturalhistory.si.edu/research/anthropology

Successfulness of the case-based instruction depends on **thoroughness** of its preparation. For example, teacher should prepare for particular lesson by examining questions and reviewing the case. Discussions should always start with open-ended questions. The debate will be more effective if everyone understands the case clearly. It means that the teacher should be aware of students' understanding of the case problem. All discussions should be summarized and listed on the blackboard. For productive debate, students should know each other in order to create a secure discussion environment (Herreid, 2007).

Cognitive Apprenticeship

The **cognitive apprenticeship instructional model** got an inspiration from traditional apprenticeship. Apprenticeship is an old method, it mostly helps to learn some activity or process at work quickly. In the workplace, new apprentice observes the master for a while, the master shows doing processes for different tasks. Then the apprentice gets support from a master for creating outputs. The master slowly removes his/her support so that the apprentice can do the tasks of the job independently. Then the master oversees the apprentice (Collins, Brown, and Holum, 1991; Collins, 2006).

Significant differences of the cognitive apprenticeship from traditional one is that:

- The tasks in the cognitive apprenticeship are **more complex** than in the traditional one. Students do not only learn the automatic steps within some

process in order to accomplish the task, but they also need to use **cognitive and metacognitive strategies** as an expert does. So, one of the teacher's responsibilities is to make students' thinking more visible and offer them unstructured problem situations.

- In the traditional model, the task determines the job, but in the cognitive apprenticeship, students' learning is determined by **learning objectives**.
- The apprentice only observes the jobs in the traditional model. However, students need to **discuss**, **articulate** and **reflect** the process and tasks. To make a discussion, teachers should be prepared for real-life examples and problems.
- In the traditional model, all things are related to job tasks, but the cognitive apprenticeship motivates students to transfer tasks into their different learning situations (Collins, Brown, and Holum, 1991).

Table 2 shows the cognitive apprenticeship model developed by Collins, Brown and Holum (1991). A productive cognitive learning environment should consist of four dimensions that are **content**, **method**, **sequencing**, and **sociology**. The **"Content"** refers to the knowledge bases to be an **expert**. **Domain knowledge** (concepts, facts, and procedure), **heuristic strategies**, **control strategies**, and **learning strategies** came from **metacognitive awareness** of the experiences.

Table 2: Principles for Designing Cognitive Apprenticeship Environments

CONTENT	**Types of knowledge required for expertise**
Domain knowledge	Subject matter specific concepts, facts, and procedures
Heuristic strategies	Generally applicable techniques for accomplishing tasks
Control strategies	General approaches for directing one's solution process
Learning strategies	Knowledge on how to learn new concepts, facts, and procedures
METHOD	**Ways to promote the development of expertise**
Modeling	Teacher performs a task so students can observe
Coaching	Teacher observes and facilitates while students perform a task
Scaffolding	Teacher provides supports to help the students to perform a task
Articulation	Teacher encourages students to verbalize their knowledge and thinking

Reflection	Teacher enables students to compare their performance with others
Exploration	Teacher invites students to pose and solve their own problems
SEQUENCING	**Keys to ordering learning activities**
Global before local skills	To focus on conceptualizing the whole task before executing the parts
Increasing complexity	To focus on meaningful tasks gradually increasing in difficulty
Increasing diversity	To practice in a variety of situations to emphasize broad application
SOCIOLOGY	**Social characteristics of learning environments**
Situated learning	Students learn in the context of working on realistic tasks
Community of practice	Students discuss different ways to accomplish meaningful tasks
Intrinsic motivation	Students set personal goals to seek skills and solutions
Cooperation	Students work together to accomplish their goals

Source: Collins, Brown, and Holum (1991, p. 14-15)

The **"Method"** describes sub-methods that should be used - **modeling**, **coaching**, and **scaffolding** are related to teachers (instructors) who help students to gain the necessary skills by **observation**, **supporting**, and **guiding**. **Articulation** and **reflection** methods are used by students, which will increase their awareness of their thinking. The latter approach – **exploration** will help students to gain **autonomy** (Collins, 2006).

Third dimension **"Sequencing"** refers to master a subject by **increasing the complexity** of the task. **"Global before local skills"** sequence relates to general rule that the whole is different from its parts. If we want to master anything, at first, we need to see the whole object - it makes it easy to understand how the objects is created and how the concrete part affects both the whole objects and the other parts. To be an expert, a more significant number of skills can be accomplished. So, for a productive cognitive apprenticeship learning environment, instructors need to observe students and increase the complexity of the problems or tasks. Moreover, in this model, increasing diversity is very important to transfer knowledge and skills to any other different situation.

Four and last dimension is to the **"Sociology of learning environment"**. In a productive cognitive apprenticeship environment, students' knowledge and skills depend on the context of a specific task that students can relate what and why they are learning to **real-life problems**. As a result, students can understand the community of the practice. In addition, for productive learning environments, teachers (instructors) should encourage students to work cooperatively and help students set their learning goals.

Anchored Instruction

Anchored instruction as technology-based learning was developed by the Cognition and Technology Group at Vanderbilt (CTGV) under the leadership of the educational scientists J. D. Bransford.

Nowadays, one of the essential problems experienced at all the education levels (including the university), is that unfortunately, students do not often understand why they have learned any information at school and therefore they have difficulties in using it in real life. To eliminate this problem, anchored instruction has designed **technology-based teaching** based on **situated learning** and **cognitive flexibility learning models**.

Briefly, **cognitive flexibility** is the ability to adapt the behavior of the person to the new environment while performing complex tasks or solving problems based on previous experience and cognitive strategies. Situated learning or cognition implies that any knowledge is constructed by the **shared experience** in social and cultural condition so that learning is **context-based** (Kumar, 1995). Both teaching approaches emphasize the importance of **creating authentic learning environment** by the **nature of social constructivism**.

However, it is not always possible to create a real, an authentic and a complex learning environment in classrooms. To use the possibilities of anchored instruction methods, students can be brought to complex issues that can be encountered in real life by watching video sequences containing mostly complex and structured problems. As Love (2004, p. 803) expressed, there are **seven fundamental principles** of development and implementation of the anchor instruction:

1. **Choosing an appropriate anchor:** Before selecting a suitable anchor, educational goals have to be reviewed, and the anchor should be chosen in accordance with the curriculum.
2. **Developing shared expertise around the anchor:** The discussion of the anchor presented in the group should increase the students' awareness of the complexity of the information from different perspectives, and the videos should make it easier for the students to understand the problems better and organize the information.
3. **Expanding the anchor:** It is essential to compare events or problems with different videos to contribute to learning objectives. It makes it easier for students to transfer their skills and knowledge acquired from these activities into other fields.
4. **Using knowledge as a tool:** Knowledge has a meaning in a related context. Subject area concepts, knowledge, and facts learned within a context are easily transferred into other settings through anchored instruction. According to CTGV (1993), different types of transfer are possible; transfer to new analogous problems, transfer to partially analogous problems, transfer to "what if" perturbations of the original problems, transfer outside the classroom context, transfer as efficient learning (p. 60-61).
5. **Teaching with anchor:** Teachers should enable students to link the objectives of the course with video-related information.
6. **Merging the anchor:** The video anchor should link to literacy-related activities like reading and writing so that students can participate more actively in the learning environment.
7. **Allowing student exploration:** Sharing videos by students with each other should make it easier for them to think as an expert.

Examples on anchored instructions can be found on the links below:

https://www.youtube.com/watch?v=zO5q2FdV-wk

https://www.youtube.com/watch?v=3tXLArBc6ao

https://cft.vanderbilt.edu/guides-sub-pages/effective-educational-videos/

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