

DIGITALL

A NEW APPROACH TO DIGITAL EDUCATION AND INCLUSION



Erasmus+

021-PT01 KA220 SCH 000032818
01 February 2022 to 31 March 2024



UNIVERSIDADE
CATOLICA
PORTUGUESA



PADERBORN
UNIVERSITY



universität
wien



proacting



Module 3

How technology can make a difference?

Aims to explore:

- Educational technologies and digital skills for teachers
- How to promote social inclusion using educational technologies



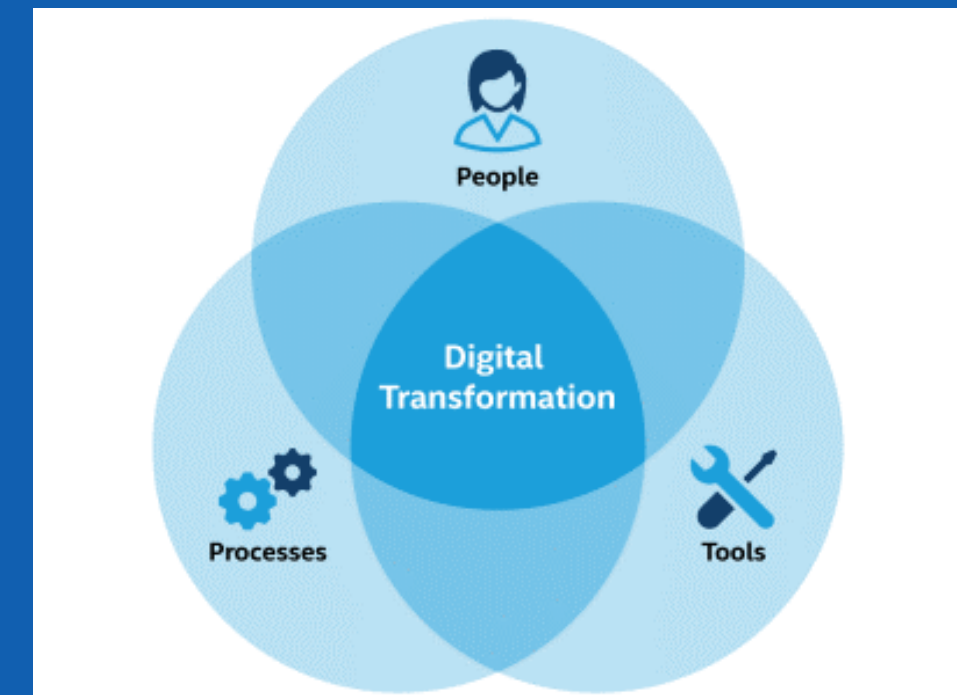
Aims

Educational technologies and digital skills for teachers.

Educational technologies and digital skills for teachers

Digital transformation in education:

- Planning the teaching-learning **processes**
- Choosing adequate technological tools
- **Training people with adequate student centered methodologies – Active learning**



Educational technologies and digital skills for teachers

And it's a challenge, once we have (usually)...

- 19th century classrooms
- 20th century professors
- 21st century students



Educational technologies and digital skills for teachers

If we are facing the globalization of knowledge sources, why is the teacher's role still that of information provider?

In the age of multimedia, which activates all the senses, and approaches the visual acuity of today's young people, we persist in the text!

- If multimedia can bring the complex world to the school and
- if the mobile can bring the school to the world
- **what advantage do we take from this medium and this device, massively used and that integrates impressive and growing functionalities, being always available and anywhere?**

Educational technologies and digital skills for teachers

An LCMS/LMS (Learning Content Management System) as a Digital Learning Technology, not being a transforming element of teaching, can contribute, with appropriate adoption policies, to the construction of adaptive, flexible, inclusive and personalized environments that involve the learners and provide better and faster results. **The pedagogical strategies of its use will have to change for that!**

Current didactics are challenged to provide:

- **Informal Learning** (curatorship of modern e-content that motivates and facilitates self-discovery);
- **Social Learning** (sharing and collaborative networking activities, User Generated Content);
- **Experiential Learning** (empirical engagement activities).

Educational technologies and digital skills for teachers

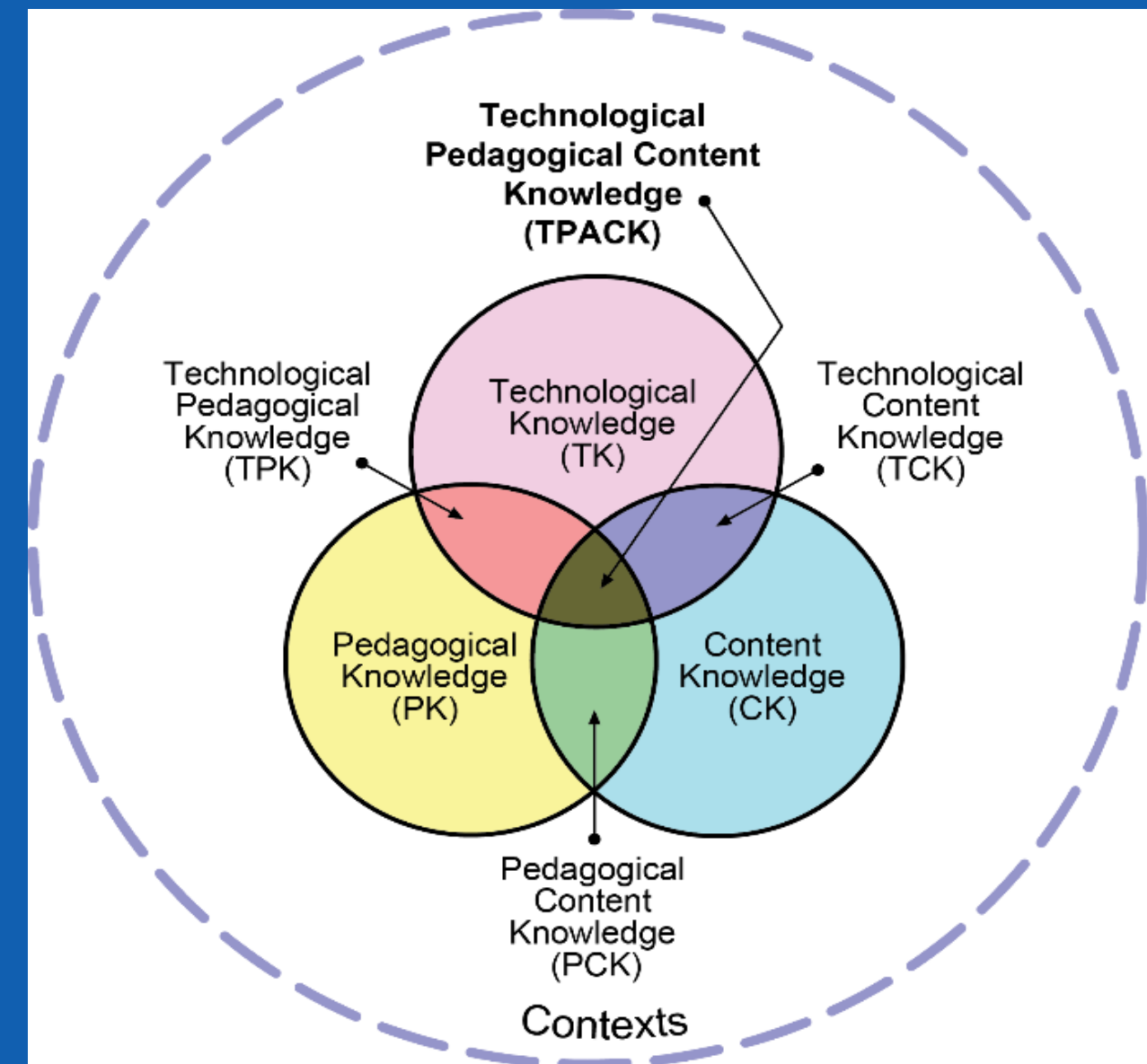
“Digital is not the answer. Transformation is!”

George Westerman

Educational technologies and digital skills for teachers

There are several models that call for a holistic view of this issue, of which we would highlight the **TPACK (Technological Pedagogical Content Knowledge)**

It results from the intersection of three dimensions with an impact on the reality of the adoption of Technology in Training: **Content (CK)**, **Pedagogy (PK)**, and **Technology (TK)**



Educational technologies and digital skills for teachers

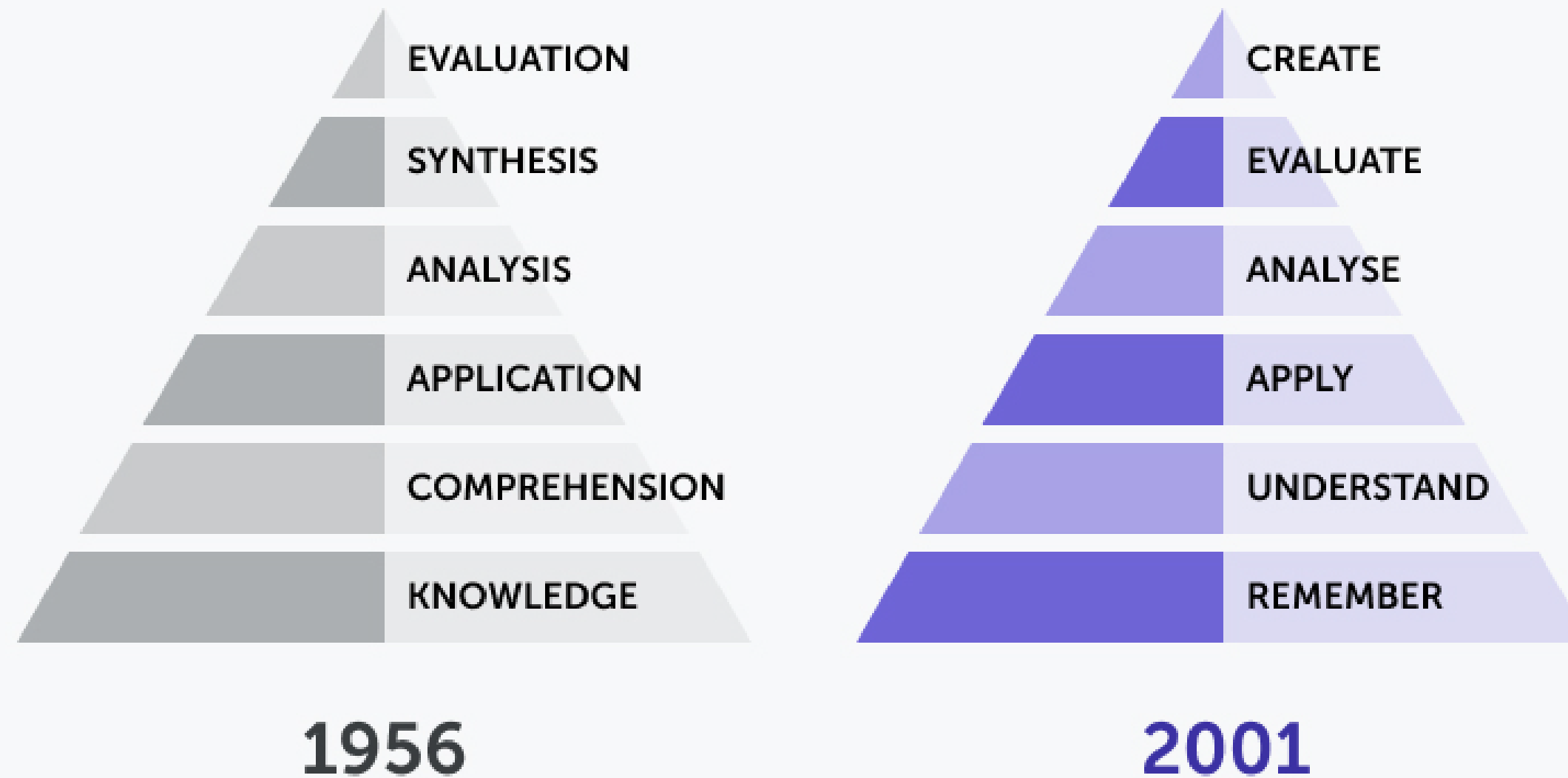
Planning the teaching-learning process

1. Definition of goals
2. Selection and organization of content
3. Teaching-learning strategies
4. Evaluation method

Educational technologies and digital skills for teachers

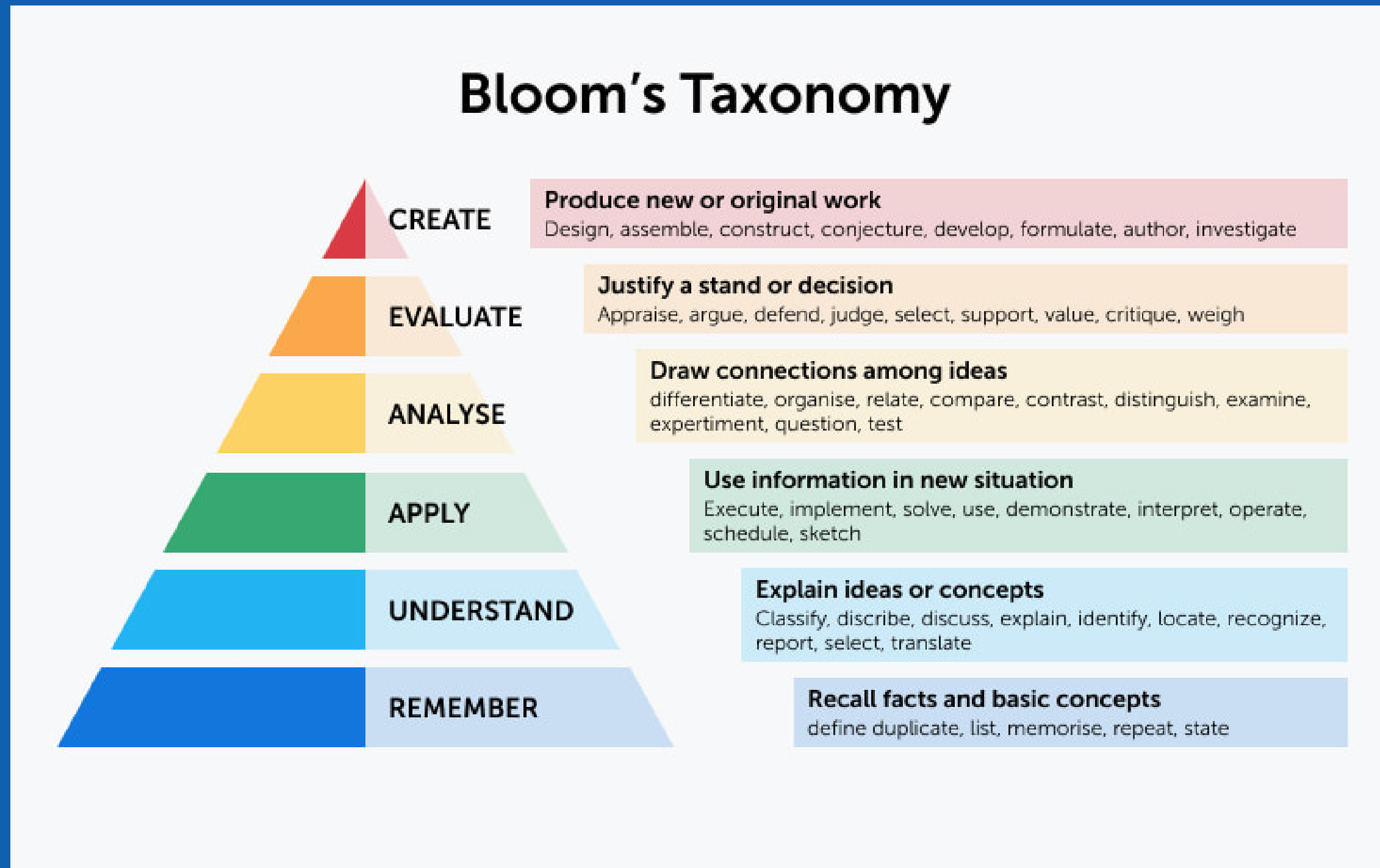
- **Planning the teaching-learning process**
- By domains of behavior (cognitive, affective, psychomotor)
- The most widespread taxonomies, such as those by Bloom (1972), Krathwohl et al. (1971) and Harrow (1972), organize educational objectives by levels of complexity of “operations” to be carried out by the learning subject, within distinct domains of behaviors
- Taxonomies offer a structural map of the different levels and dimensions of the formative process. Through them, the teacher has a systematized display of goals and alternatives available when designing a didactic process.
- A tool that teachers could use to develop a structure and an understanding of how students think
- The lower level skills are on the bottom, and increase as it moves up to the top tier, which is the highest order of thinking skills

Educational technologies and digital skills for teachers



- Bloom's Taxonomy

Educational technologies and digital skills for teachers



- Bloom's Taxonomy revise (Anderson and Krathwohl, 2001)

Educational technologies and digital skills for teachers

lower order thinking skills			higher order thinking skills		
remember	understand	apply	analyze	evaluate	create
recognizing - identifying recalling - retrieving	interpreting - clarifying - paraphrasing - representing - translating exemplifying - illustrating - instantiating classifying - categorizing - subsuming summarizing - abstracting - generalizing inferring - concluding - extrapolating - interpolating - predicting comparing - contrasting - mapping - matching explaining - constructing models	executing - carrying out implementing - using	differentiating - discriminating - distinguishing - focusing - selecting organizing - finding coherence - integrating - outlining - parsing - structuring attributing - deconstructing	checking - coordinating - detecting - monitoring - testing critiquing - judging	generating - hypothesizing planning - designing producing - constructing

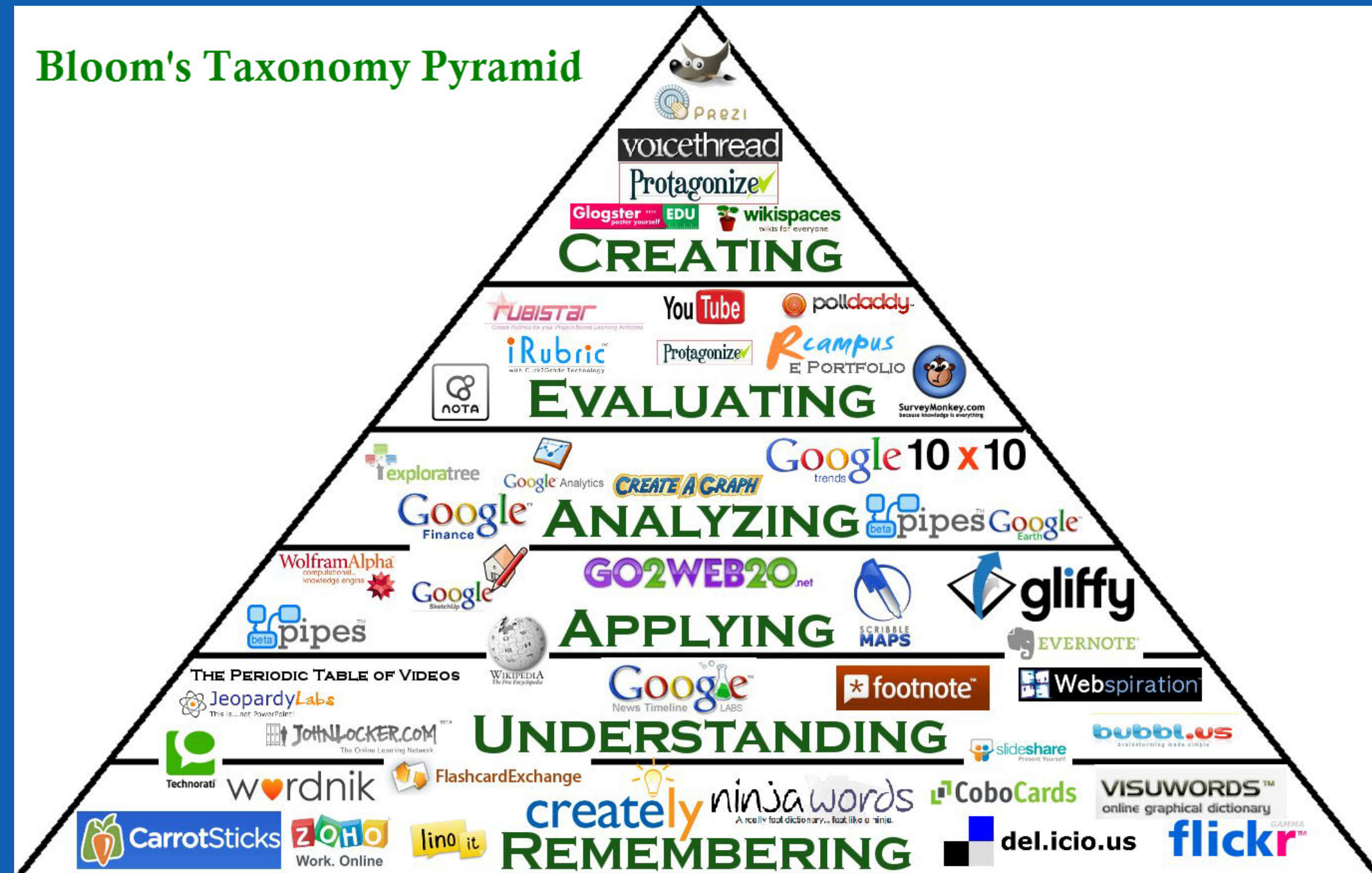
- The cognitive processes (adapted from Anderson and Krathwohl, 2001, p.67-68)

Educational technologies and digital skills for teachers

Level	Description	E.g., Digital Activity	Digital Tools
Remember	Recall information from memory	Identify a legitimate search engine and understand how it works	• Searches in search engines like Google, Firefox, or Safari • Bookmarking • Making lists in a word processor such as Word or Google Docs • Using flashcards in web tools such as Hot Potatoes or Moodle • Using social media like Facebook or Twitter
Understand	Describe the meaning behind a graphic or passage	Categorize and tag pictures or posts	• Mind-mapping in bubbl.us • Journaling in a blog using Blogger or WordPress • Tagging pictures or posts in social media
Apply	Execute or implement information in simulations, presentations, collaboration, or using models	Edit a wiki page	• Making slide show presentations with Google Slides, PowerPoint, or Prezi • Making movies or animations with iMovie or Camtasia • Collaborating with web conferencing tools, such as Skype or Adobe Connect, wikipedia • Science and math simulations with PhET
Analyse	Differentiate between parts, organize them, and explain relationships	Use an online survey tool to set up and run a survey	• Making and taking polls in Google Forms or Survey Monkey • Organizing and interpreting data in Excel or Google Sheets • Using Databases such as Google Earth • Graphing Data with Excel, Google Sheets, or Online Charts
Evaluate	Check, critique, test, or make judgments about a topic at this level	Moderate and respond to comments made on a forum, blog or other	• Collaborating with peers in a debate on discussion boards or social media • Making tests, quizzes, or polls for their peers in Socrative • Create voice recordings in Vocaroo • Write answers to open-ended questions or journal-write in SeeSaw and have peer reviews
Create	Do all of the previous forms of thinking and have reached the pinnacle of Bloom's Digital Taxonomy	Launch and produce a podcast on a topic of the curriculum	• Create cartoons explaining topics in PowToon • Write a story in StoryboardThat • Create media productions with Rifftrax and Animoto • Create images in Google Drawing

Educational technologies and digital skills for teachers

In a nutshell... or image...



Educational technologies and digital skills for teachers

Diana Laurillard, Professor of Learning with Digital Technologies at University College London Knowledge Lab:

- Conceptualizes the teaching and learning process as a dynamic dialogue between teacher and learner
- Created a learning design approach called the ABC Learning Design framework (<https://abc-ld.org/>), an effective approach for developing constructivist learning pathways, strongly characterized by active learning on the part of the student.
- Effective learning occurs through iterative interactions in which both parties actively engage to co-construct an understanding of a particular aspect of the world (Laurillard, 2012).
- Laurillard (2012) categorizes learning activities into six distinct types, each representing a different way in which learners engage with knowledge and develop understanding and how technologies might support different learning activities.

Educational technologies and digital skills for teachers

Learning type	Conventional learning activity	Digital learning activities
Acquisition	• Reading books or papers • Listening teachers' presentations or lectures • Watching demonstrations	• Reading multimedia, websites, digital documents/ resources • Listening to podcasts, webcasts • Watching animations or videos
Inquiry	• Using text-based study guides • Analysing the information in a range of materials and resources • Using conventional methods to collect and analyse data • Comparing texts, searching and evaluating information and ideas	• Using online advice and guidance • Analyzing the ideas and information in digital resources • Using digital tools to collect and analyse data • Comparing digital texts, using digital tools for searching and evaluating information and ideas
Practice	• Doing exercises • Implementing practice-based projects, labs, field trips, and face-to-face role-play activities	• Using models, simulations, microworlds, virtual labs and field trip, online role-play activities
Production	• Producing articulations using statements, essays, reports, accounts, designs, performances, artefacts, animations, models, • Videos.	• Producing and storing digital documents, representations of designs, performances, artefacts, animations, models, resources, slideshows, photos, videos, blogs, e-portfolios.
Discussion	• Tutorials, seminars, email discussions, discussion groups, online discussion forums, class discussions, blog comments.	• Online tutorials, seminars, email discussion, discussion groups, discussion forums, web-conferencing tools, synchronous and asynchronous.
Collaboration	• Small group project, discussing others' outputs, building joint output.	• Small group project, using online forums, wikis, chat rooms, etc. for discussing others' outputs, building a joint digital output.

Aims

How to promote social inclusion using educational technologies.

How to promote social inclusion using educational technologies

- According to systematic review developed under the project (Costa et al., 2023),
 - i) there is a **clear lack of digital-based interventions** for promoting social inclusion
 - ii) and in, **particular, amongst primary school students;**
 - iii) of the existing interventions, the **majority focused on specific pathologies** and occur at individual level;
 - iv) nonetheless, the **interventions selected for this study appears to be beneficial** for the children targeted in each program.

How to promote social inclusion using educational technologies

To implement it, some success factors have been identified (Hassani et al., 2020):

- Implementation at an early stage in students' social development;
- Regular integration into lessons;
- Maintaining long-lasting and continuous approaches;
- Involvement of the entire class (not only focus children);
- Engage students cognitively, affectively, and behaviourally.

How to promote social inclusion using educational technologies

The use of cooperative methods, challenging problems or using project-based learning with heterogeneous groups are also more suitable to involve all students and allowing teachers to be more attentive to children with particular difficulties.

Despite no method is universal and universally applicable, the knowledge of the class and all students and a nuanced understanding from teachers are key factors to successful interventions (Stalmach et al., 2023).

Educators can stay informed about current and widely used applications by consulting regularly updated resources such as Top Tools for Learning (<https://www.toptools4learning.com/>).



Reflection

Draw an activity and, using Top Tools for Learning, select one app and justify it's use.

Share it with colleagues in the forum.



DIGITALL

A NEW APPROACH TO DIGITAL EDUCATION AND INCLUSION



Erasmus+

021-PT01 KA220 SCH 000032818
01 February 2022 to 31 March 2024



UNIVERSIDADE
CATOLICA
PORTUGUESA



PADERBORN
UNIVERSITY



universität
wien



proacting