WITEA-ID

Weeks of International Teaching – Inclusive and Digital

Digital Skills and Digital Transformation in Education

Workshop - “Innovative Interactive Digital Teaching”

16-19.09.2022 | Luxembourg

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

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

Table of Contents

Digital Education

Digital Transformation trends in education

Digital Skills

Think/Pair/Share

Table of Contents

Digital Education

Digital Transformation trends in education

Digital Skills

Think/Pair/Share

What is digital education?

Digital education refers to the use of digital technologies and tools in teaching and learning. It is synonymous with phrases such as:

- Technology-enhanced learning
- E-learning
- Digitally enhanced learning
- Online learning

HolonIQ research shows that the education sector is still under-digitized, with less than 4% of total expenses paid to digital.

WITEA-ID

What is digital education?

Technology-enhanced learning

The term Technology Enhanced Learning (TEL) is used to describe the application of technology to teaching and learning.

e.g. education apps, software for teachers

E-learning

A learning system based on formalised teaching but with the help of electronic resources is known as E-learning.

e.g. online courses and platforms

What is digital education?

Digitally enhanced learning

Digitally-enhanced learning refers to the use of a variety of digital technologies to enrich learning environments and experiences beyond what was possible through non-digital means.

e.g. microlearning, gamification

Online learning

Online learning is a method of education whereby students learn in a fully virtual environment. It refers to an internet-based learning environment.

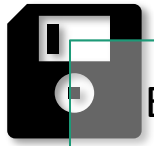
e.g. interactive e-learning

WITEA-ID

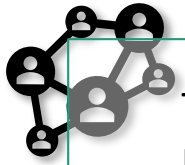
Why is digital education important?

Digital technologies are fundamentally changing how people and businesses work together

Across the globe, the pace of digital transformation is accelerating



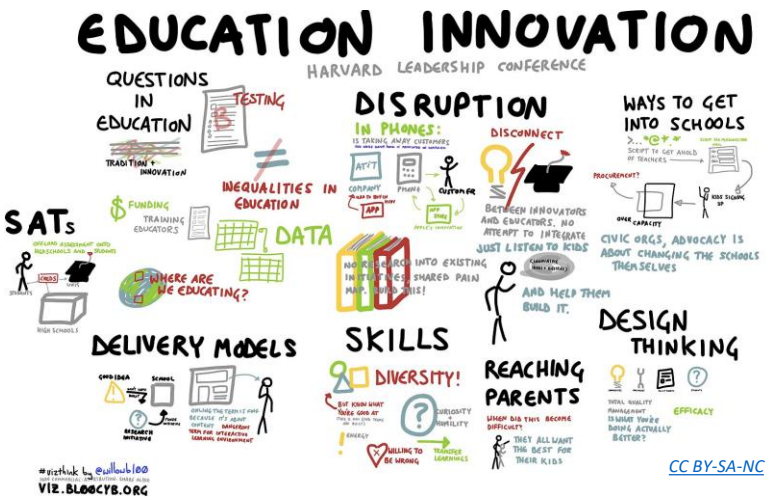
Emerging technologies, growing amounts of data and smarter ways of getting insights are changing the way people, businesses and governments interact



The pace of change continues to blur the boundaries of the physical and digital worlds

> **"It is not the strongest of the species that survive, nor the most intelligent, but the one more responsive to change."**
>
> *- Charles Darwin*

Why is digital education important?



CC BY-SA-NC

To be successful in the workplace of the future, people will need to have **the right digital education.**

Whether in school, at university or on the job – the digital transformation that is under way is making **IT skills** more important every day

Digital Transformation is underway

CC BY

WITEA-ID

Advantages of Digital Education

01 Critical Thinking

Learning tools and technology enable students to develop effective self-directed learning skills. They are able to identify what they need to learn, find and use online resources, apply the information on the problem at hand, and even evaluate resultant feedback.

02 Collaboration

Educational tools teach students how to collaborate and work successfully in groups. This is typically done through gamification. Gamification is a great feature of interactive learning because it teaches students playing in a group to depend on and trust each other in order to win a game or achieve their goals. They also promote cooperation and teamwork which are very important skills, in every aspect of life.

03 Self-motivation

Students using digital learning tools and technology become more engaged in the process and more interested in growing their knowledge base, they may not even realize that they're actively learning since they're learning through engaging methods such as peer education, teamwork, problem-solving, reverse teaching, concept maps, gamification, staging, role playing, and storytelling.

WITEA-ID

Advantages of Digital Education

04 Information Sharing

Digital learning is not only allowing students to access more and more information but also ensuring that the information in question is customizable and suited to their personal needs. The explosion of free and open content and tools has created an environment of sharing economy.

05 Engagement

In a digital environment, teachers have more options to engage their students than in a traditional classroom with a whiteboard. Just think of images, audio, and video content. Moreover, many EdTech incorporate game-based learning techniques that make learning fun and engaging.

06 Personalized Learning

Each child in your classroom is different, and it can be challenging to adjust your learning plan to fit every student. Fortunately, technology in education can help you modify your lessons.
In a traditional classroom, students have to keep up with the pace of the lecture. However, digital education gives students more possibilities to learn at their own pace.

NOVEL Group

Digital Education Action Plan

What is the D.E.A.P.?

The Digital Education Action Plan (2021-2027) is **a renewed European Union (EU) policy initiative that sets out a common vision** of **high-quality, inclusive and accessible digital education in Europe**, and aims to **support the adaptation of the education and training systems** of Member States to the digital age.

Digital Education Action Plan

The Digital Education Plan sets out two strategic priorities and fourteen actions to support them:

1 **Priority 1: Fostering the development of a high-performing digital education ecosystem**

2 **Priority 2: Enhancing digital skills and competences for the digital transformation**

WITEA-ID

Priority 1 - Actions

1 Structured Dialogue with Member States on the enabling factors for successful digital education and skills

2 Council Recommendation on blended learning approaches for high-quality and inclusive primary and secondary education

3 European Digital Education Content Framework

4 Connectivity and digital equipment for education and training

5 Digital transformation plans for education and training institutions

6 Ethical guidelines on the use of AI and data in teaching and learning for educators

WITEA-ID

Priority 2 - Actions

7 Common guidelines for teachers and educators to foster digital literacy and tackle disinformation through education and training

8 Updating the European Digital Competence Framework to include AI and data-related skills

9 European Digital Skills Certificate (EDSC)

10 Proposal for a Council recommendation on improving the provision of digital skills in education and training

11 Cross-national collection of data and an EU-level target on student digital skills

12 Digital Opportunity Traineeships

13 Women's participation in STEM

14 European Digital Education Hub

Table of Contents

Digital Education

Digital Transformation trends in education

Digital Skills

Think/Pair/Share

What does digital transformation mean for education?

Digital transformation in education means ***digitalizing the processes and products to improve the teaching and learning experience for everyone involved***. It focuses on:

Accessibility

Digital technologies enable learners (e.g. students, employees) to access learning resources more easily and less expensively than traditional education. People across the world, from all ages, with different socioeconomic statuses have access to classes and resources through the internet. Technologies such as text-to-speech remove the barriers for students with disabilities.

Increased engagement

Interactive learning: Micro lessons, videos, interactive tests, games etc. are all different learning formats which are transforming education. For example, interactive language teaching apps like Duolingo claim to reach more US learners interested in foreign languages than the school system.
Customized learning: Computer technology and AI enable educational methods such as adaptive learning where each learner is allowed to learn in a way appropriate to them.

Key technologies and trends

Improved accessibility and access

One of the most inspiring digital transformation trends visible in education is **the improved accessibility to school, lessons and even degree programs for students of all ages**. Students who may have impairments that hinder their ability to access certain types of information will find that technology can go a long way in removing these barriers. **Those with visual or audio challenges, as well as reading disabilities, can all benefit from these different types of technology that allow them to learn and earn degrees.**

Accessibility and access also continue to improve from a geographic perspective thanks to technology. **Online learning opportunities, which allow students to access schools and degree programs that might not be local to them, help students secure the best possible education for their given situation.** Students no longer have to be limited by their immediate geographical area.

This trend will continue to grow as people see the value of improving flexibility for some courses, or even programs, in higher education.

Key technologies and trends

Cloud-based learning opportunities

The cloud offers students and teachers the chance to **connect from virtually anywhere.** They can use these types of applications while sitting in a lecture hall in person, from home, or even half-way around the world.

These platforms offer a host of opportunities. They enable **the streaming of lectures, thus making online classes possible and interactive.** Students can also **use many applications** to submit their assignments, track their syllabi, and even connect and engage with others in their class. The platforms can be used to break out into smaller groups so that students can collaborate together on projects and assignments.

Cloud-based applications that have been designed specifically for students can even allow students to take exams.

Thanks to these types of programs, students from a wide range of backgrounds have more access to classes and educational opportunities.

Key technologies and trends

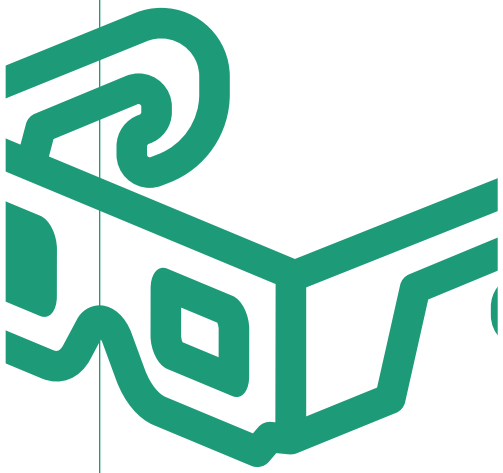
Smart classes

Digital technologies have also improved face-to-face learning. **Smart Class is a digitally equipped classroom with a range of teaching and learning tools.** This incorporates audio and visual learning material through which the teacher can make the classroom teaching fun and engaging.

Smart classes equipped with **smart boards, computers, internet connections, projectors**, etc. unlock the ways of delivering learning resources to students that were impossible with a blackboard and chalks.

If we will be able to drive regular use of technology in government schools, smart classes would become the future of education style.

Key technologies and trends



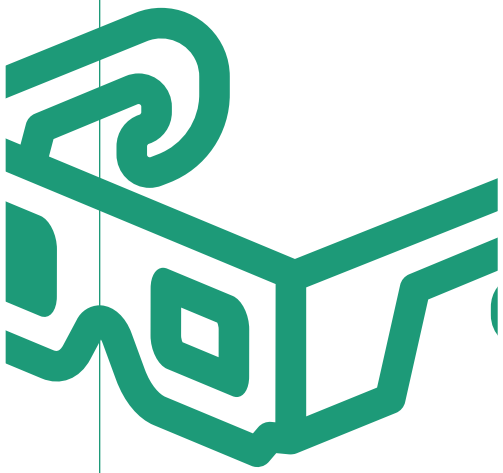
Augmented reality/Virtual reality

Augmented reality and virtual reality (AR/VR) technologies can create **interactive and virtual environments for students and help them better engage with the subject**. These technologies can enable virtual field trips to historical locations or facilitate learning-by-doing for applied sciences and medicine. The distance learning experience can also be improved with AR/VR technologies.

In the world of education, virtual reality can provide students with the chance to **'experience' the material they learn before they actually move into real-world applications.** For example, in the hospitality industry, students can see firsthand the different potential work environments, feel as though they are in a situation where they need to serve customers, and receive training that gives them hands-on experience without even leaving their classroom.

Students who feel more qualified and comfortable will find it easier to transition into their roles and perform.

Key technologies and trends



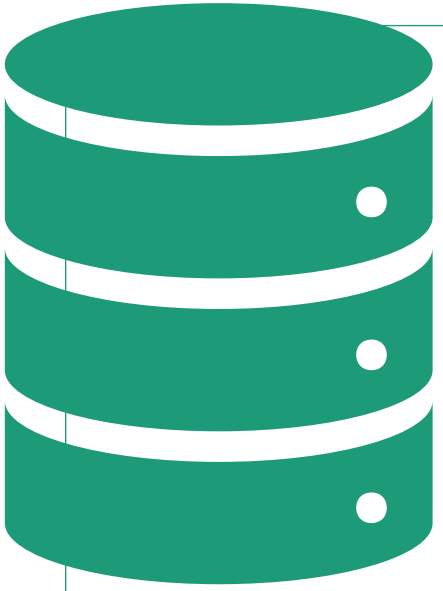
Internet of Things (IoT)

In the age of ‘smart’ devices, the Internet of Things, or IoT, can be found with increasing prevalence throughout people’s lives. In education, this trend has begun to help **connect learning institutions and students in an entirely new way.**

The increasing use of smartphones and other edge devices **improves the connectivity between students and their educational institutions** by enabling **real-time communication and data transfer.** IoT devices can also be used to track young children’s absence or presence in class and alert teachers and parents for their security.

IoT can also help **schools remain connected with students**. Time-stamps help track assignments so that students can better monitor their degree progress and verify their work has been received. Student tracking also helps teachers and professors take attendance and know when someone is missing.

Key technologies and trends



Analytics

Schools have long collected a wealth of information about their students, including their demographics, grades and classes. Big data refers to the growing technological capabilities to track large amounts of data and interpret it with the assistance of algorithms to find patterns and helpful information.

Big data provides them with the opportunity to take this information much further and use it to better understand student trends and successes.

Digital technologies enable schools to collect and analyze a wealth of data about their students to monitor and enhance their performance. Using traditional and advanced analytics, they can **determine where students struggle and succeed, develop new methods, and test whether these methods yield expected results.**

Table of Contents

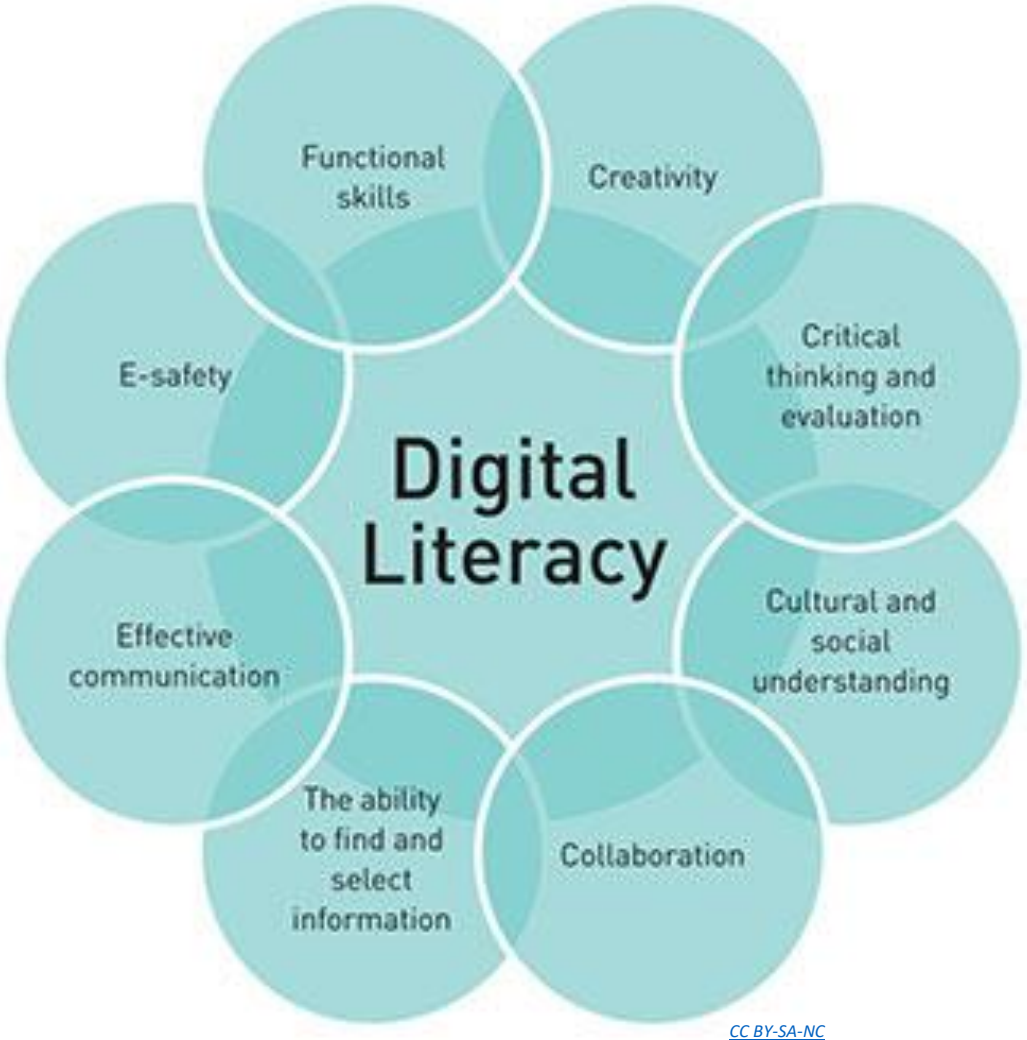
Digital Education

Digital Transformation trends in education

Digital Skills

Think/Pair/Share

What is Digital Literacy?



CC BY-SA-NC

Digital literacy means having the skills you need to **live, learn, and work** in a society where communication and access to information is increasingly through digital technologies like internet platforms, social media, and mobile devices.

What is Digital Literacy?

DIGITAL LITERACY

The concept of digital literacy encompasses a range of skills and knowledge necessary to **evaluate, use, and create digital information in various forms**. Digital literacies include **data literacy**, **information literacy**, **visual literacy**, **media literacy**, and **metaliteracy**, as well as related **capacities for assessing social and ethical issues** in our digital world.

WITEA-ID

Basic digital literacy skills

01 Information Literacy

Today's students rely on the Internet as a primary source of information for both school and personal use.
That's why it's important that you teach students how to evaluate information to ensure it's accurate.

02 Ethical Use of Digital Resources

While your students may know they need to cite information from books, they could forget that they need to cite information online as well.
Talk to your students about intellectual property, copyrighted material, and the proper way to reference the information.
It's especially important to note that copying text from a website is plagiarism just like stealing text from a book.

03 Protecting Yourself Online

With so much information available online, your students need to understand the basics of Internet safety.
Creating strong passwords, using privacy settings, and knowing what not to share on social media will start them on the right foot.
You can also delve into more technical parts of privacy, like virtual personal networks (VPNs), data encryption, and hacking.

Basic digital literacy skills

04 Cyberbullying

Cyberbullying — the use of technology as a means to harass others — has become a daily occurrence across the United States.
According to the Cyberbullying Research Center, an average of 27.9% of students experienced cyberbullying over the past 10 years. Those numbers have jumped to an average of 34% since 2014.

05 Understanding Digital Footprints

A digital footprint is all of the information a person passively leaves and actively shares about themselves online, especially on social media sites. Text, images, multimedia, cookies, browsing histories, IP addresses, passwords, and even Internet service providers all make up a person's digital footprint.

06 Handling Digital Communication

Today, most students use technology to communicate in one way or another. That's why it's so important to talk to them about how to communicate safely and appropriately.
That includes both personal and professional communications.
Almost every career requires digital communications at some point, so students should have a good grasp on responsible communications.

What are Digital Skills?

What are Digital Skills?

Unesco's definition of digital skills is:

"a range of abilities to use digital devices, communication applications, and networks to access and manage information. They enable people to create and share digital content, communicate and collaborate, and solve problems for effective and creative self-fulfillment in life, learning, work, and social activities"

Digital skills are the skills we need to study and work in our fast-evolving digital world.

CC BY-SA

Top employable skills for students

Social Media

The ability to understand and use social media effectively is a core and valued skill that every professional should have. Social media marketing goes beyond posting a tweet or Facebook update; it is about understanding the dynamic relationship between brands, influencers, and consumers.

Businesses need to reach out to customers in ways that will drive traffic to their website—or product—for potential conversion. It now also plays a key role in providing good customer service as many consumers take to social media to ask questions or make comments.

According to a recent study, there are 4.2 billion active social media users worldwide. Of these, 4.15 billion are active users on mobile devices

Top employable skills for students

Search Engine Marketing (SEM)

Beyond social media, Search Engine Marketing (SEM) is one of the most influential disciplines that marketers have come to rely on.

Students with SEM experience can increase the visibility of a company's website on a search engine (e.g., Google or Bing) primarily via paid advertising. By doing so, the business will attract valuable web traffic from the search engine results page.

By using SEM, students will be able to capture precious organic search traffic results. That's why marketers, content managers, and webmasters spend a great deal of time optimizing websites, particularly for mobile and ad campaigns to ensure the highest conversion rates possible.

To put things in perspective, 81% of internet users search online for a product or service to buy, with Google accounting for 70% of that traffic

Top employable skills for students

Data Analytics

Data can provide your students with a wealth of information that - if used correctly - can result in effective marketing campaigns that drive conversions, sales, and revenue.
Data analytics essentially allow students to make educated and data-driven decisions to drive better business insights. The key is knowing what data to collect and measure to improve the next campaign.
Analytics go hand-in-hand with SEM so these skills work together to ensure a business understands what consumers want, and how to attract and retain their attention.

“If you can't measure it, you can't manage it”

Top employable skills for students

Digital Marketing

To promote their products and services tech companies will look to digital marketing. Understanding of how to get the most value for money out of the broadest range of networks will be key here. In-demand skills for Digital Marketers include:

- **Digital marketing tools**
- **Analytics tools**
- **Social media marketing**
- **Content marketing**
- **SEO**
- **UX (User Experience Design)**

Content comes in many forms – blog posts, videos, podcasts, infographics, even social media status updates and is crucial in driving brand awareness and can establish brands or influencers as thought leaders.

Top employable skills for students

Being Safe & Legal Online

There are laws that say what we can and can't do online. These keep people, their work and their data safe. Posting something online creates a permanent record which others might be able to see now and in the future.

Essential digital safety skills include installing an anti-virus programme on your machine and keeping it updated, using strong passwords that you don't share with anyone, and knowing how to identify suspicious or "scam" content in emails or pop-ups.

Staying legal online also includes not using other people's words, pictures or content. This is copyright infringement – a simpler word for this is stealing. You should get permission before using, create your own original work, or use free stock sites such as Pixabay.

WITEA-ID

Top employable skills for students

Digital Design and Data Visualization

Websites, Apps and Digital Services have one thing in common; a user interface. Any designer with experience creating effective, dynamic user experiences will be in high demand with most tech companies.

Designers can also visualize complex data to help management make vital business decisions. This skill is call data visualization. Data visualization is useful for senior leaders to gain valuable insights from data. Tools such as Tableau and Power BI are used by designers to analyse and visualize data.

WITEA-ID

Top employable skills for students

Microsoft Office

Microsoft Office is the most widely-used tool for documenting, organizing information, delivering presentations and processing data. For this reason, Microsoft Office efficiency is usually a required skill for most positions, regardless of your industry.
Important types of Microsoft Office skills that are more and more required in business:

- **Creating spreadsheet**
- **Creating tables**
- **Creating pivot tables**
- **Running and creating macros**
- **Data analysis**
- **Data visualization**
- **Validating data**
- **Creating documents**
- **Managing tables of content**
- **Preparing documents for print**
- **Proofreading and editing copy**
- **Creating slideshows**
- **Embedding video and images**

Top employable skills for students

Transacting

The skills required to register and apply for services, buy and sell goods and services, and administer and manage transactions online.

If you use shopping sites like Amazon, sell unwanted items on eBay, or use an app to look at your bank account, you are transacting online. It's vital that you learn how to do this safely. This includes using strong passwords, never sharing this information with anyone, and only using genuine and secure programmes.

Table of Contents

Digital Education

Digital Transformation trends in education

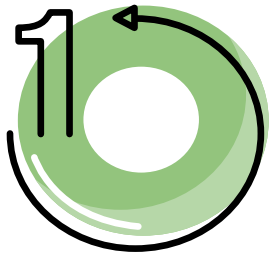
Digital Skills

Think/Pair/Share

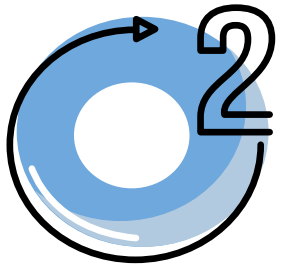
Think/Pair/Share

What is TPS?

Think-Pair-Share (TPS) is a cooperative learning activity that can work in varied size classrooms and in any subject

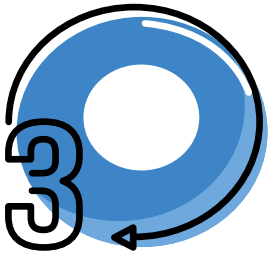


Pose an **open-ended question** for students to answer (aligned with instructional goal) and ask them to think to themselves for about a minute and **write down their thoughts**.



Ask them to **turn to the person next to them** (groups of 2 or 3 only) and **share their thought** process/answer with each other.

Prompt students to **report out on "behalf" of their group**. Summary could include differences in thought process and whether or not the group was in agreement.



WITEA-ID

Think/Pair/Share

In which digital literacy skill do you think students lack the most?

1. **Information Literacy**
2. **Ethical Use of Digital Resources**
3. **Protecting Yourself Online**
4. **Cyberbullying**
5. **Understanding Digital Footprints**
6. **Handling Digital Communication**

1. Take notes
2. Discuss with the person on your right
3. Share your thoughts on a post it note
4. Stick the post-it note on the whiteboard

NOVEL Group

WITEA-ID

Think/Pair/Share

In which digital skill do you think students lack the most?

1. **Social Media**
2. **Search Engine Marketing (SEM)**
3. **Data Analytics**
4. **Digital Marketing**
5. **Being Safe & Legal Online**
6. **Digital Design and Data Visualization**
7. **Microsoft Office**
8. **Transacting**

1. Take notes
2. Discuss with the person on your right
3. Share your thoughts on a post it note
4. Stick the post-it note on the whiteboard

NOVEL Group

WITEA-ID

Weeks of International Teaching – Inclusive and Digital

www.witea-id.eu

@WITEA.ID

Thank you for your attention!

Workshop - “Innovative Interactive Digital Teaching”

16-19.09.2022 | Luxembourg

Mendel University in Brno

Hellenic Mediterranean University

NOVEL Group

Πανεπιστήμιο Κρήτης
University of Crete

Inter University Centre Dubrovnik
IUC
An independent international centre for advanced studies

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

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