

Guidelines for Delivering Remote Teaching in Vocational Education and Training

Project partnership



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Introduction

The COVID-19 pandemic has put the spotlight on the role of technology in education across the world. Due to the already introduced technology – video conferencing tools or online learning software, it was certainly easier to minimise the disruption of education. However, a major technological push into education puzzled not only teachers but also education providers about which technology to choose and how to use it for effectiveness in the teaching/learning process.

To inspire and encourage VET providers, teachers and trainers to be creators of digital education, the *e-VET* project partners shared insights and practical experience in the *Guidelines for Delivering Remote Teaching in Vocational Education and Training* (later the *Guidelines*).

In developing the *Guidelines for Delivering Remote Teaching in Vocational Education and Training*, a key focus has been to:

- ✓ help VET providers, teachers and trainers to develop their digital competence;
- ✓ raise VET providers, teachers and trainers' awareness of essential principles of remote teaching;
- ✓ overview possible technologies, tools and resources to suit the online environment;
- ✓ encourage VET providers, teachers and trainers to create digital learning materials.

The *Guidelines* cover general principles of delivering remote teaching along with a short description of different types and options of digital resources and conclude with examples of good practices from *e-VET* project partners. Therefore, the *Guidelines* should be useful for VET providers, teachers and trainers who need some advice on remote and/or online teaching.

The online version, as the supplement to the *Guidelines* developed in parallel with this document, can be found on Google Sites

<https://sites.google.com/mczirmunai.lt/erasmus-project-e-vet/home>.

Essential Principles of Remote Teaching

Remote teaching/learning refers to all teaching/learning activities that occur remotely outside of a traditional classroom environment. The teacher and/or the source of information and the learner are separated by time and/or distance i.e. instruction and content are delivered over the Internet, and online resources and platforms are commonly used to transfer the information. Students mostly access educational resources online, receive their lessons online, take their tests online, and submit their assignments online.

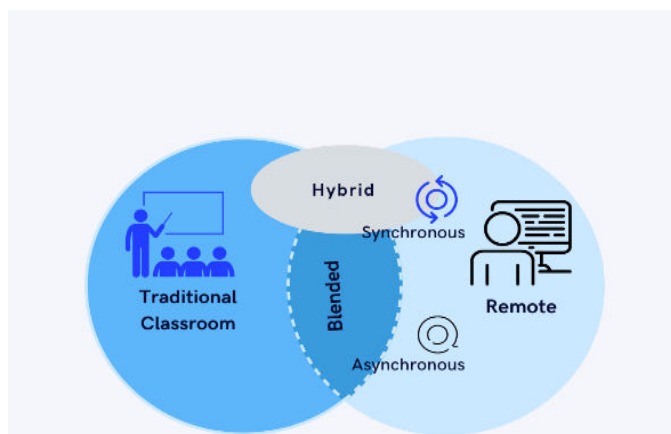


Figure 1. Common ways of teaching/learning.
Designed by Aušra Netikšienė, PMČZ.

The most common ways of teaching/learning online are:

- ✓ Synchronous teaching/learning activities happen in real time with a teacher.
- ✓ Asynchronous teaching/learning activities are performed through prepared resources, without real-time teacher interaction.
- ✓ A mixture of both.
- ✓ Blended teaching/learning combines classroom teaching with online learning activities. Learners follow classroom activities and complete some tasks in different virtual learning environments e.g. Moodle, Google Classroom, etc.

- ✓ Hybrid teaching/learning is a method of education where some students participate in person and others online. Using technology like video conferencing, teachers can educate both in-person and distant students in the same session.



The description of the class for hybrid teaching in SALPAUS

by lecturer Päivi Lakso

A hybrid class (later class) is a fully equipped class for hybrid teaching – a teacher teaches simultaneously online and at the class. The class gives the opportunity to give distance and IT based teaching and enables students to study simultaneously at home and in our hybrid class with the teacher present, MS O365 Teams (later Teams).

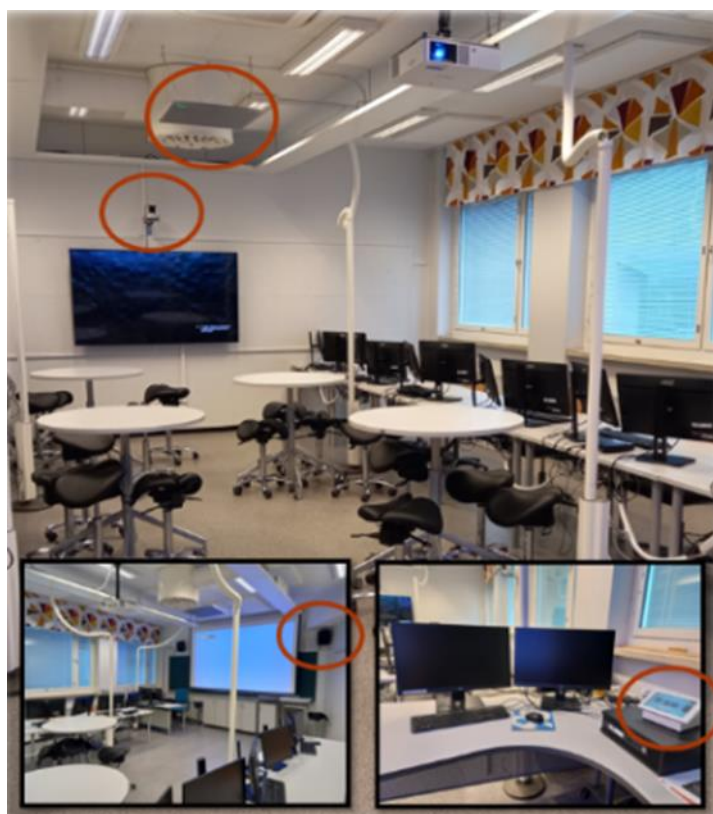


Figure 2. Hybrid teaching class in SALPAUS.
Pictures taken by Päivi Lakso.

The class has fixed speakers, cameras and mics which are connected to the control panel. The class also has a big TV screen and projector to show content and participants' video/picture.

There are also movable laptop units (10 pieces of laptops) if fixed (12 pieces) computers are not enough. For students using laptops, there are empty tables and extra chairs available.

There are also headsets and cameras available for computers.

One thing to notice is that the mics are very sensitive and pick up everything from typing to teacher walking with high heels.

Group learning is very easy to execute whether some students are at home and some in the class. Students in the class also open Teams and the teacher can group students by using Team's breakout rooms.

Teaching in this class is very easy and doesn't need any special technical skills from the teacher which lowers the barriers to giving hybrid lessons.

Hybrid class increases flexibility for studies when students can choose their own way of study by choosing where they study. Hybrid learning creates students a new learning path.

Learning Management

A Learning Management System (LMS) or Virtual Learning Environment (VLE) is used to support teachers in delivering materials to the learner, administering and keeping track, and supporting other tasks such as assessment and communications.

Learning Management System (LMS) is a broad term that is used for a wide range of systems that organise and provide access to online learning services for students, teachers, and administrators. These services usually include access control, provision of learning content, communication resources, and organisations of user groups.

A virtual learning environment (VLE) is a set of teaching and learning resources, activities, and interactions and assessments to enhance a student's learning experience usually designed by educational institutions complying with teaching structure.

The most common Learning Management Systems and used by the project partner institutions are:

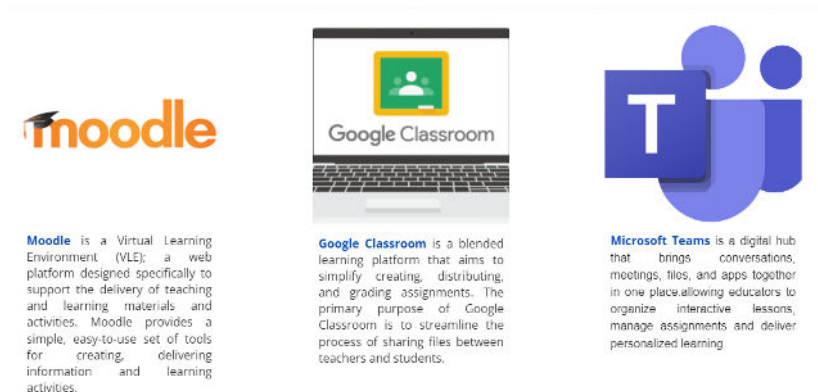


Figure 3. Learning Management Systems used by the e-VET project partners.¹



Teaching/Learning platforms used in EPRALIMA by Tânia Cerqueira Alves

“Escola Virtual” <https://www.escolavirtual.pt/> is a personalised teaching-learning platform that provides the curricular subjects of the main subjects of the National Curriculum, from 1st to 12th grade. The aim of the project, which is the responsibility of Grupo Porto Editora, is to provide the entire educational community with more attractive and effective study and support methods geared towards student success.

This is a pioneering project in Portugal, which allows users to approach study in an integrated and credible manner through the Internet, helping to consolidate knowledge acquired in the classroom, promoting study autonomy and constituting a truly interactive vehicle for learning and testing curricular subjects.

The curricular contents provided are designed with all scientific and pedagogical rigour by a team of teachers and consultants, and structured according to the programmatic guidelines of the different subjects.

Today, “Escola Virtual” School is an unavoidable reference when it comes to educational content in digital format. Multiple times awarded, the Virtual School serves more than 200 000 teachers and students, is used in hundreds of schools, receives more than 1 000 000 visits per month and provides more than 2 000 000 hours of study per year.

¹ <https://sites.google.com/mczirmunai.lt/erasmus-project-e-vet/learning-management>

Plataforma LeYa Educação (<https://www.leyaeducacao.com/>). Education portal that brings all, in one place, the relevant resources for the education community: teachers, students, parents and schools.

The distance learning platform allows you to study the contents of your subjects, from 1st to 12th grade, through digital resources such as videos, animations, virtual labs, presentations, interactive tests, games and much more.

The rise of specialised e-learning platforms has allowed learners to access learning materials anytime and anywhere. The e-learning platforms recommended by the e-VET project partners are:

Udemy – available at: <https://www.udemy.com/>. Udemy is the leading global marketplace for teaching and learning, connecting students from anywhere to the best instructors around the world.

Academy Of Mine – available at: <https://www.academyofmine.com/>. A customizable e-learning platform built for your organisation. Create, manage, and deliver the highest quality educational content in a unique way that works for your business. Provide your customers, users, partners, or employees the tools they need to succeed. Built for Professional Training, Certifications and Continuing Education.

Coursera – available at: <https://www.coursera.org/>. Coursera partners with more than 275 leading universities and companies to bring flexible, affordable, job-relevant online learning to individuals and organisations worldwide and offers a range of learning opportunities — from hands-on projects and courses to job-ready certificates and degree programs.



Education Informatics Network in Turkey

by Serdar Cemri, ZMD MTAL

Nearly 1 million teachers and 18 million students in Turkey have been affected by school closures and other restrictions due to the pandemic. Several steps have been taken by the Ministry of National Education to continue education services during the COVID-19 pandemic. After the decision to close the schools, the infrastructure of the Education Informatics Network (in Turkish; Eğitim Bilişim Ağı, EBA) as an effective digital education platform was strengthened and cooperation was made with the Turkish Radio and Television Corporation within the scope of distance education.

The Education Informatics Network, briefly EBA, is an educational electronic content network of a social nature established by the Republic of Turkey Ministry of National Education in Turkey. It was designed and is being operated by the Directorate General of Innovation and Education Technologies affiliated to the Ministry.

The purpose of the network is to ensure the integration of technology into education using information technologies wherever necessary. EBA was developed, and is still being improved, to offer reliable and accurate e-content suitable for respective grades.

While there are digital resources prepared by the Ministry of National Education and educational institutions volunteering to share their contents, teachers and students are also able to

present the content they create. Parents and teachers can follow the quality of education and make their own contributions to the education process through EBA.

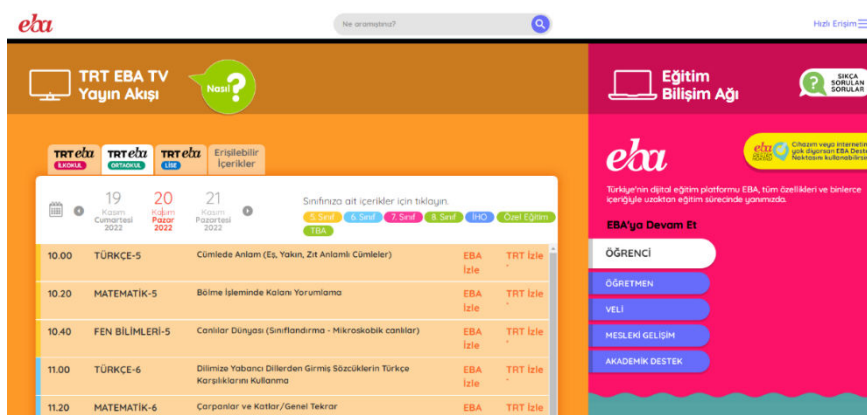


Figure 4. Education Informatics Network in Turkey.

- ✓ 18 Million Students
- ✓ 7 Day 24 Hour Available Infrastructure
- ✓ 16 Billion 348 Million 941 Thousand Clicks

EBA is specially designed for teachers to collaborate with their colleagues and share educational materials with students. Teachers can participate in discussions created by them or other teachers, share educational materials, assign tasks to students and follow tasks individually or oncoming events. They can also contribute to the content pool with the contents they have created with content creation tools provided by EBA.

It is designed so that students can study more effectively and get better results. They can work collaboratively with their peers and teachers, communicate with them, and share educational materials on EBA Course. In addition, students can follow the tasks assigned to them by their teachers and study any subject anytime. They can continue sharing at school, participate in voting on EBA and attend events. Most importantly, students can continue learning outside of school.

How to use EBA?

If you want to use EBA, you must have an account as a teacher or student including a username and a password. You can enter www.eba.gov.tr and start to use the platform. The educational contents are mainly EBA Course, EBA Gallery including news, videos, visual materials, audio materials, books, magazines, and documents, EBA Contests, EBA Applications, EBA Radio, EBA E-Course and Distant Learning.

EBA Course is a learning management system that could easily be used in all disciplines. EBA Course provides visual and audial materials, interactive contents, questions banks to both teachers and students. Teachers can create classroom lists, create worksheets or other lesson materials, and send their students. They can specify the time limit of the homework they send online. They can see the student's status. In the EBA Applications section there are many applications from different fields. For example, there is an interactive Maths dictionary. It is an Android based application.

Alternatively, there is a virtual laboratory application where you can conduct chemistry experiments on different levels.

Advantages

- ✓ It is free of charge and easy to use.
- ✓ The contents can be updated, and teachers can contribute to the contents by sending files, videos, pictures.
- ✓ Teachers can create classroom lists and send worksheets to their students.
- ✓ Teachers can also share the educational activities as news to be seen nationwide or can contribute to content parts.
- ✓ Teachers can participate in discussions created by them or other teachers, share educational materials, assign tasks to students, and follow tasks individually or oncoming events.
- ✓ Students can select photos or videos they need for their homework, performance tasks or project works.
- ✓ Schools can share their educational events, activities as news to be seen nationwide.
- ✓ Disadvantages
- ✓ Only teachers and students who get a username and a password from the school can use this online platform.
- ✓ In some disciplines, such as English or Philosophy, its content is not adequate or updated.

Digital Security

While advances in technology have presented opportunities to engage students in the classroom in new and exciting ways, cyber-safety issues should be covered by schools to protect students from any harm within the online learning environment. In terms of that, EBA is a secure and reliable online learning platform.



Evaluation management system – Belgium Asapi by CLW

In cooperation with VIVES University of Applied Sciences², we as CLW Kortrijk have built our own evaluation system. This system was completely built to our measurements and wishes. Among other things, there was a need for transparency and user-friendliness.

At the start of the lessons, the teachers fill in the attendance of their students. This is immediately linked to the student counsellor so that there is a quick overview of the absent students.

After logging in, you arrive at a dashboard where we immediately have a view of the timetable, groups, student counsellor, etc.

At the bottom of the dashboard you will find several buttons to quickly access the relevant information.

After logging in, you will see the main dashboard where we immediately see the timetable, groups, student information, and the evaluation overview.

At the bottom of the dashboard, there are several buttons to quickly access different parts of the system:

- Evaluatie BGV
- Evaluatie PAV
- Attitudes
- Rapporten
- Externe Documenten
- Visueel Traject BGV
- Bedrijfsbezoeken
- Weekschema

The evaluation overview shows a list of students and their progress in various competencies. For example, the first student, 'E1 ORIENTATIE', has a progress bar that is mostly yellow, indicating that most competencies have been achieved. The second student, 'E2 ZORG', has a progress bar that is mostly grey, indicating that most competencies have been practiced but not yet achieved. The third student, 'E3 THUISZORG LEEF- EN WOONOMGEVING', has a progress bar that is mostly white, indicating that most competencies have not yet been worked on.

Below the evaluation overview, there are three sections for the teacher to track their progress in different areas:

- Mijn Opleiding:** A progress bar showing the teacher's progress in the 'Opleiding' competency. It is mostly yellow, indicating that most competencies have been achieved.
- Mijn Gezondheid:** A progress bar showing the teacher's progress in the 'Gezondheid' competency. It is mostly grey, indicating that most competencies have been practiced but not yet achieved.
- Mijn Vrije Tijd & Afspraken, Voorzorg:** A progress bar showing the teacher's progress in the 'Vrije tijd & afspraken, voorzorg' competency. It is mostly white, indicating that most competencies have not yet been worked on.

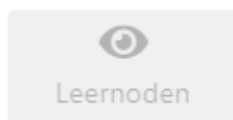
At the bottom of the dashboard, there are two sections for the teacher to track their progress in different areas:

- Funderende Bouwstenen ICT:** A progress bar showing the teacher's progress in the 'Funderende bouwstenen ICT' competency. It is mostly yellow, indicating that most competencies have been achieved.
- Funderende Bouwstenen:** A progress bar showing the teacher's progress in the 'Funderende bouwstenen' competency. It is mostly grey, indicating that most competencies have been practiced but not yet achieved.

² <https://www.vives.be/en/vives-international>

Datum	vrijm 13 jan 2023	vrijm 13 jan 2023	dorm 12 jan 2023	dorm 12 jan 2023
Groep	3P2B	4.1	4.1	3P2B
Aanwezigheid	Aanwezig	Aanwezig	Aanwezig	Aanwezig
Aandacht / Concentratie	3	3	3	3
Kwaliteit nabespreken	3	3	3	3
Toepassen werkinstructies	3	3	3	3
Afgepraat nakomen	3	3	3	3
Werktempo	3	3	3	3
Zorg voor materiaal	3	3	3	3
Gezag aanvaarden	3	3	3	3
Omgaan met feedback	3	3	3	3
Initiatief nemen	3	3	3	3
Functioneren in groep/team	3	3	3	3
Kunnen communiceren	3	3	3	3
Motivatie en inzet	3	3	3	3

WUJZEN	MAANDAG	DINSDAG	WOENSDAG	DONDERDAG	VRIJDAG
VOORMIDDAG	Soc Mar	Soc Mar	Soc Mar	BGV 3F2S 9u - 11u50 (CLW)	PAV 4.1 9u - 11u50 (CLW)
NAMIDDAG	Soc Mar	Soc Mar	Soc Mar	PAV 4.1 12u45 - 15u35 (CLW)	BGV 3F2S 12u45 - 15u25 (CLW)
EXTRA LES					
VM + NM					



1. Algemene eerste indruk	
2. Kerncijfer P&W	
2.1. Optimalisering Gemeenschappelijke Optimaliseren	
2.2. Algemene eerste indruk	
Eerst Ingevoerd	
2.3. Informanteninterviewing om -verandering	
Eerst Ingevoerd	
2.3.5. Probleemoplossend Denken	
Eerst Ingevoerd	
2.3.6. Ervarenwerk	
Eerst Ingevoerd	
2.2.4. Individuele Werkplan	
Eerst Ingevoerd	
2.2.5. Maatschappelijke Participatie	
Eerst Ingevoerd	
3. Oefening (Algemene eerste indruk & Kerncijfer ICT)	

Figure 5. Dashboard of evaluation management system in CLW.

- ✓ Attitudes: each day we evaluate the attitudes of our students;
- ✓ Bedrijfsbezoeken: this button provides a link to the company visits that should happen during the student's journey. Teachers see how the learner's attitude is in the workplace;
- ✓ Rapporten: this button allows each teacher to retrieve the student's reports. This is both from the current school year, and from previous school years. These reports are only the reports made at our school;

- ✓ Weekschem: the teacher can access the student's schedule;
 - ✓ Externe document (External documents);
- Below are the student's grading (where will he start if he comes to our school), documents relevant to the student's pathway, etc.

Furthermore, through the website we find these 2 buttons:

- ✓ **Leernoden (Learning needs):** if the student has the additional need for learning support or a particular issue (e.g. dyslexia, autism, etc.) we can find this below.
- ✓ **Screening:** Every newly enrolled student receives a welcome day with us. During this welcome day, they receive all the explanations regarding the operation of school and make their first ICT bundle to set up the various ICT tools used at school. Among others, office 365. The first impression of this student is then entered into the system by the screening button

Educators' Digital Competence

Digital competence³ is one of the eight key competences and refers to a combination of knowledge, skills and attitudes necessary to make effective use of technology to perform tasks, solve problems, communicate, manage information, collaborate, as well as to create and share content effectively, appropriately, securely, critically, creatively, independently and ethically.

On a daily basis a teacher's role involves multitasking — preparing teaching/learning materials, engaging and guiding students, conducting and compiling test results. Regardless of where the class takes place – in person, online, or through hybrid learning – the key priorities should remain student engagement and the learning experience.

Although numerous digital devices and resources bring many opportunities for the teaching/learning process, they at the same time challenge teachers on how to use technology in the best way. Therefore, it is important to motivate teachers to develop their digital competence constantly.



Digi mentor concept endorsed by SALPAUS
by Intranet and IT coordinator Marja Gran

Digi mentor is a person who is digi enthusiastic who uses skills, digital innovations and experience to help others. Digi mentors can begin their "career" as study field digi teachers. Digi teachers are usually specialised to enhance courses and develop materials in their specific field of study.

Aim of the digi mentoring is to share knowledge and practical skills in digitalization as well as create co-creation, co-operation and share good practices.

Digi mentors

- ✓ walk hand in hand in the developing path of courses with the teachers,
- ✓ support developing common teaching material and guidelines for on-line courses in Moodle,
- ✓ educate themselves in courses and webinars,
- ✓ learn new digi tools and teach others how-to use them,
- ✓ network and co-operate with IT department coordinators,
- ✓ usually have a specific field and favourite in the digital life like VR/XR, camerawork or gamification.

Digi mentors organise workshops in certain content e.g., once a month. Digi mentors also have time to give personal guidance and support for teachers in specific content (in what the teacher needs help in that time e.g., H5P, video editing etc.). Teachers can participate online or face-to-face meetings.

³ <https://digital-competence.eu/dc/front/what-is-digital-competence/>

For teachers digi mentor concept lowers the barriers to use new digital tools e.g., new Moodle tools, virtual equipment, simulation, gamification and other new solutions, resources, and platforms.

Teachers don't have to know everything about digital resources themselves which means teachers can focus on pedagogy, content and assignments, guidance and teaching.

European Framework for the Digital Competence of Educators: DigCompEdu

DigCompEdu⁴ offers a structured approach to digital competences required for educators. The framework distinguishes six areas of professional and pedagogical activity of educators.

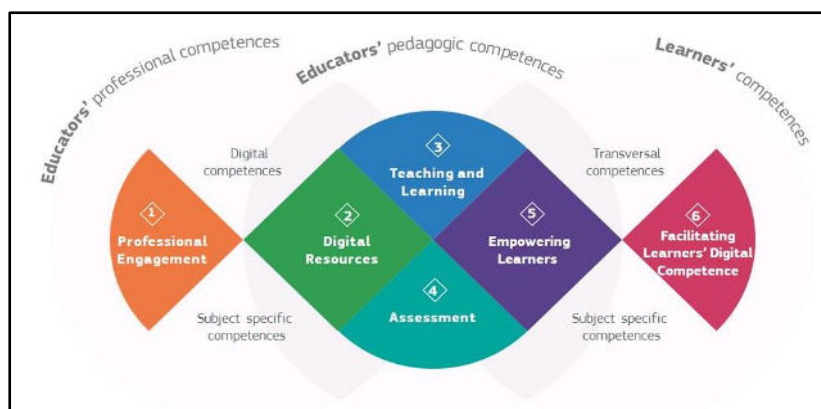


Figure 6. DigCompEdu Areas and Scope.³

Area 1. Professional Engagement: using digital technologies for communication, collaboration and professional development. Activities and related competences: organisational communication, professional collaboration, reflective practice, digital CPD;

Area 2. Digital Resources: sourcing, creating and sharing digital resources. Activities and related competences: selecting, creating and modifying, managing, protecting, sharing;

Area 3. Teaching and Learning: managing and orchestrating the use of digital technologies in teaching and learning. Activities and related competences: teaching, guidance, collaborative learning, self-regulated learning;

Area 4. Assessment: using digital technologies and strategies to enhance assessment. Activities and related competences: assessment strategies, analysing evidence, feedback and planning;

⁴ [JRC Science for Policy Report. European Framework for the Digital Competence of Educators, European Commission, 2017; p.15-16](#)

Area 5. Empowering Learners: using digital technologies to enhance inclusion, personalisation and learners' active engagement. Activities and related competences: accessibility and inclusion; differentiation and personalization, actively engaging learners;

Area 6. Facilitating Learners' Digital Competence: enabling learners to creatively and responsibly use digital technologies for information, communication, content creation, wellbeing and problem-solving. Activities and related competences: information and media literacy, communication, responsible use, problem solving.

The list above shows how DigCompEdu defines specific competences for each of the 6 areas and thus proposes a set of 22 competences to cover different aspects of activities in all areas. The chart below shows how areas of activity and therefore competences are interlinked.



Figure 7. DigCompEdu Competences and Their Connections.3

The framework shows multidimensional nature of both: educators' activity and educators' digital competence. At the same time, it shows the mutually connected, integrated nature of areas of activity and competences.

How DigCompEdu can help VET providers, teachers and trainers

- ✓ Individual educators in VET and WBL:
 - reflect on different aspects of professional activities and assess one's use of digital resources; plan for use of digital technologies and resources; assess one's digital competences⁵
 - plan for digital skills development identifying specific needs and areas;
- ✓ Education providers, VET institutions:
 - review and plan use of digital technologies;
 - promote and support teachers' professional development;
- ✓ VET teacher trainers:
 - plan training and train digital skills alongside pedagogical and professional competences, taking into account the multidimensional nature of digital competence.

⁵ [JRC Science for Policy Report. European Framework for the Digital Competence of Educators, European Commission, 2017](#); p.28-31 on assessing digital competences and measuring progress

DigCompEdu framework can be included as one of the training topics for VET teachers and managers, as it helps reflect and assess use of digital technologies in education, as well as plan for both 1) development of digital competences of teachers; 2) use of digital resources for different purposes in education.

Digital Resources

Digital resources, as defined in the European Framework for the Digital Competence of Educators (DigCompEdu)⁶, is the term that refers to any content published in computer-readable format. For the purposes of DigCompEdu, a distinction is made between digital resources and data. Digital resources in this respect comprise any kind of digital content that is immediately understandable to a human user, whereas data need to be analysed, treated and/or interpreted to be of use for educators.

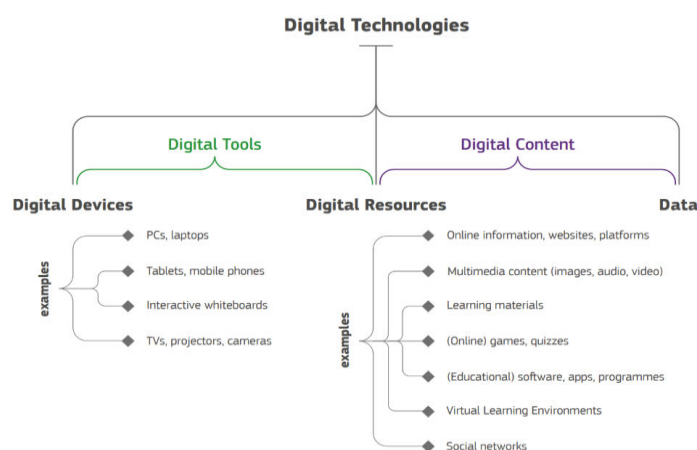


Figure 8. Overview of key concepts used in DigCompEdu.⁵

Criteria and Principles for Selecting Digital Resources

DigCompEdu framework has served us, e-VET project partners, as a tool to design and plan e-VET project research and training activities. In the same way it can serve individual teachers and training organisations.

Classification of Digital Resources for Education

In the process of planning the teacher considers different purposes and activities (for example, see purposes listed in DigCompEdu above). The question “What resources should I use for this or that purpose?” leads the teacher to the classification of digital resources according to purpose. Some resources/technologies are good for the development and presentation of content, some are useful for interaction or engagement, some for assessment.

⁶ [JRC Science for Policy Report. European Framework for the Digital Competence of Educators, European Commission, 2017](#); p.88-90



The classification of digital resources by Aušra Netikšienė, PM CZ

An excellent example is the classification developed by Aušra Netikšienė from PM CZ.

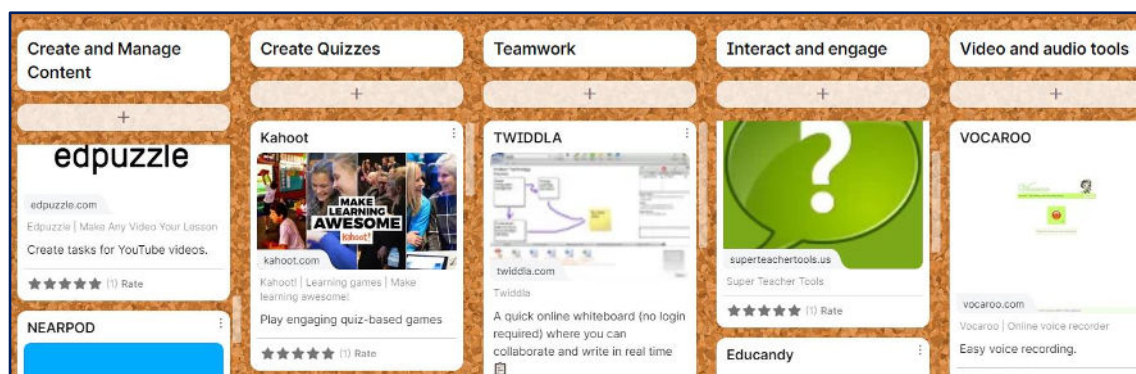


Figure 9. Classification of digital resources according to purpose.⁷

Aušra offers the list of ICT resources for teaching and learning under the following categories:

- ✓ create and manage content;
- ✓ create quizzes;
- ✓ teamwork;
- ✓ interact and engage;
- ✓ video and audio tools;
- ✓ free-to-use: pictures and graphs, music;
- ✓ other.

Lists and classifications provide practical support to teachers and trainers. They can be developed by individual teachers or teams of teachers, or enthusiasts. There are many education blogs/bloggers providing selected lists and classifications, e.g.:

- ✓ Kathy Schrock's "Online Tools"⁸ with more than 30 categories;
- ✓ 20 Digital Tools for Classroom for Innovative Teachers & Students⁹;
- ✓ Periodic Table of EdTech curated by Isabella Liu¹⁰, etc.

Yet, these classifications cannot and must not be seen as universal because

– the world of digital technologies and resources is in constant change and the lists are always incomplete or quickly get outdated;

⁷ <https://padlet.com/ausranetiksiene/blp1p4hx0qd8lo03>

⁸ <https://www.schrockguide.net/online-tools.html>

⁹ <https://graphicmama.com/blog/digital-tools-for-classroom/>

¹⁰ <https://theisabellaliu.com/periodic-table-of-edtech>

– many of the resources may serve different purposes or functions, e.g. a mind-mapping tool can be used to present content, it can be used for online collaboration, for assessment, etc., depending on teacher's preference, creativity and skills.



The use of Padlet

by Vita Žunda, Baltic Bright

An example of how one tool can serve many professional and pedagogical purposes of a teacher/trainer is provided by Vita Žunda, trainer of WBL tutors, Baltic Bright.

Vita Žunda describes the use of Padlet¹¹ for

- ✓ storing and arranging digital resources (see also Aušra Netikšienė's Padlet above);
- ✓ presenting and sharing training material and resources to students;
- ✓ collaboration tool for joint inputs of groups of students;
- ✓ feedback tool for reflections and comments;
- ✓ assessment tool where students can upload and show their work, and collect evidence.



Figure 10. Use of Padlet.

Criteria for selecting digital resources and technologies

For the teacher, it is important to be aware of the criteria, principles and some technical aspects when selecting the tool for teaching and learning. Tome Urdze offers some universal criteria to be considered first and foremost:

- ✓ what is the value added to the teaching process;
- ✓ the investment of time and money to start using this technology;
- ✓ what happens if the technology becomes obsolete;
- ✓ the issue of accessibility;
- ✓ good practice regarding privacy.¹²

¹¹ <https://qualityplacements.eu/digital-tools-for-vet/digital-tools-in-vet-examples/>

¹² Toms Urdze, G.Dreifogels, U.Libkovska. A Compass for Selecting and Implementing Education Technologies. Venstpils Augstskola,

We could simplify the list to 3 main criteria:

- ✓ value added: here we can consider the effectiveness of pedagogical purpose. For instance, while in face-to-face teaching, interaction, collaboration and feedback are easy without digital resources (but digital resources may help/improve/enhance), in distance or online teaching and learning such resources may be absolute necessity;
- ✓ investment of effort, time, money: we consider different aspects. We are ready to spend much/more time if the resource will be used long-term for many students, not just once. If we do not have all necessary skills, can we attract support from the school or colleagues? It may also be the issue of money: the basic free version may not be enough, and the teacher is not ready to pay;
- ✓ accessibility: we may consider if we can have access at home as well as at school devices; will it work (be easy to work with) on mobile devices? Do we need to set up/register special accounts, what are privacy issues, etc. Can it be integrated in VET school's Moodle platform and shared with other teachers?

Other Issues to Be Considered:

- ✓ distance learning/training vs. face-to-face lessons: some resources are good in both settings, some would have value added in distance learning training;
- ✓ how popular and well-known the resources are among other teachers; More wide-spread and popular resources facilitate broader use and sharing of resources, collaboration among teachers and students not only within one school, but globally;
- ✓ age and number of students (e.g., individual vs. group interaction), students' digital skills and readiness;
- ✓ can the tool be used only for one function or several; can it be used for general and vocational subjects.

Delivery of Content

For many years digitalization of learning and training content has been in the form of files. The *e-VET* survey has shown that VET teachers would like to improve their skills in creating and editing videos. The *e-VET* partners explored different approaches to filming videos in VET school settings and the use of special audio and video technologies – cameras, green screens, microphones, lighting, etc.

The partners explored some tools for making videos: OBS, Adobe Spark videos, Edpuzzle, etc ¹³.

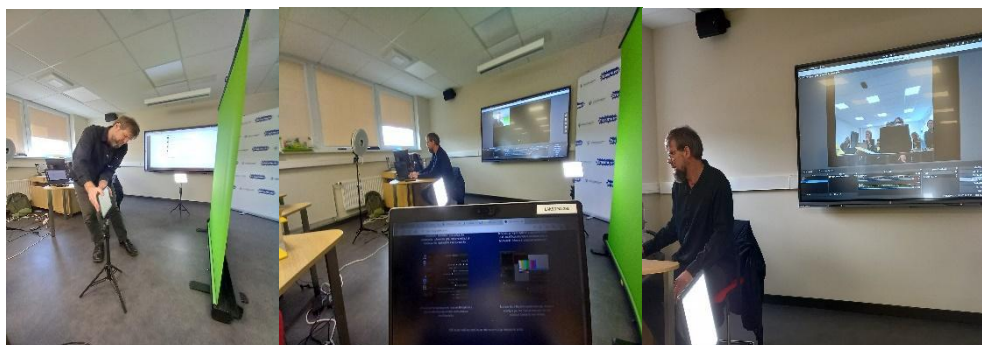


Figure 11. Exploring tools for making videos.

Providing access to the content also implies a variety of resources: teachers use platforms, websites or blogs developed by VET schools, by employers or by international projects, teachers and students can also create their websites or blogs using such resources as *WordPress* or *Blogspot*, social media platforms, for example, *Pinterest* or *YouTube*.



The use of educational videos by RTRIT

Educational videos are effective to teach/learn things online. They can be used to educate relevant topics. Knowing that students like watching videos on YouTube, TikTok, and social media stories, teachers started experimenting with educational videos.

The first step to produce the educational video is choosing a topic. With the help of educational video any hard or boring topic can be turned into something easy, fun, and understandable. In other words, there is a wide choice of topics for the videos, therefore teachers need to consider such aspects as sustainability, cost-efficiency and expertise.

In terms of sustainability, teachers consider whom this video is made for. Will it be used in classroom teaching or only in distance learning? How many student groups/ classes can use the video? In which modules is the topic included? Will it be suitable for adult education, too?

¹³ Training events at RTRIT in Riga (March 2022) and SALPAUS in Lahti (May 2022)

Considering cost-efficiency, topics (or in our case – dishes) are chosen according to the most costly ingredients. Producing one video – materials will be used once. Besides, students pay more attention to the details in video, than in the classroom.

To make videos attractive and convincing, teachers consider their own expertise – start with the topics there are most comfortable with. Making videos in cooperation with employers (restaurant chefs) is a great opportunity to make the material even more attractive.

Next step is to define the length of the video. A live broadcast by the teacher of the subject would probably take an hour or more, but this is too long to keep the students' attention. This is when teachers look at the sample of social media videos. Step-by-step how-to-do videos are quite popular on social media, teaching as example how to prepare a meal. These 2-minute videos may work for very simple things, but most topics will require more time. Students' attention is getting shorter by the day, therefore the advised length is 5-7 minutes, but definitely not exceeding 15 minutes.

Education videos need to be well structured, in order to deliver all necessary information in a clear way fitting into limited time. Teachers need to draft a simple, easy-to-follow, engaging script. To achieve that:

- ✓ keep instructions and definitions concise, specific, and try to keep them as short as possible
- ✓ only include what's essential,
- ✓ follow a logical order and go smoothly from one step to the other,
- ✓ use short screen texts to deliver extra information.

RTRIT educational videos are created as a part of a learning program or module, covering one specific topic. Videos are up to 15 minutes, include the recipe (ingredients/quantities), usually also necessary equipment, serving tips, etc.

Videos are used:

- ✓ during online teaching,
- ✓ during classes in the school,
- ✓ as complementary materials in the program.

The videos below (in Latvian) are created by the chefs to teach cooking special dishes.

Video 1.

https://drive.google.com/file/d/1qBRwl6D1iGQLxibtDQVNbw-PrF2XBynLn/view?usp=share_link

Video 2.

https://drive.google.com/file/d/1w5EnYEhh6DTHLIDZSCy0M9kt5TYDgbN_/view?usp=share_link



Project based learning – students' videos by RTRIT

RTRIT have a wide option of video creation during the exchange projects that take place in Riga Technical School of Tourism and Creative industry.

The education video creation, from filming to editing and to the end result, is implemented in a project training program, such as culinary program & tourism program. International students are guided through all practical levels of video creating and performing.

A sample of a video made by students in the school environment is here:
https://drive.google.com/file/d/1MjgKGDFGFmyswdtFfAbwxupxr2Vgq3yX/view?usp=share_link

For cooking videos: The cooking videos usually are filmed in a kitchen workshop where students present their traditional meal (dessert, starter or soup). The performance is recorded and afterwards edited via iMovie on iMac that is provided by RTRIT. The editing of video is very simple as a wide equipment is offered for students, that is described in **“Equipment for video production”**. Videos are used for a dissemination of projects, student skills and their performance confirmation.

Equipment for video production

To capture the videos RTRIT provides such technical equipment as :

- ✓ Camera Tripods (2),
- ✓ Led ring lights with phone holder (2),
- ✓ Go Pro Max 360 camera (2),
- ✓ Pad light set (2),
- ✓ Radio microphone (1),
- ✓ Phone stabiliser with tripod (2),
- ✓ Green screen room.

For video editing students use:

- ✓ Apple IMac PC,
- ✓ Software iMovie (Suitable for Chroma key).

Two partner schools RTRIT and SALPAUS demonstrated the use of virtual reality (VR) technologies and simulation in teaching vocational content. For example, RTRIT use VR in teaching tourism specialists and SALPAUS use simulation method for developing paramedics' practical skills.



Virtual Reality Centre system¹⁴

presented by RTRIT

Recommendations and hardware specifications for the Virtual Reality Centre system¹³, presented by RTRIT, can be found in [Erasmus+ Project - Virtual Reality \(google.com\)](#)



Figure 12. Photo from RTRIT with VR goggles.



The use of simulation pedagogy

by lecturer Esa Sahlman, SALPAUS

The purpose of simulation is to authentically imitate pre-planned real-life situations and simulate a single thing. Simulation offers a safe environment for student to train and develop capabilities to perform genuine real-life situations safely. Simulation is learning based on previous knowledge and experience, developing independent operations and decision-making.

One of the most important areas of the simulation pedagogy is the feedback discussion. In feedback discussion students reflect on their own activities. The simulation develops students' critical thinking and problem-solving skills, planning skills, communication and teamwork skills and it also develops clinical skills in the field of healthcare studies.

Before the simulation exercise, it has been preceded by studying the topic as a local or online teaching. That is important because then the students already have theoretical knowledge of the topic. Students in different roles in the simulation feel that they have learnt different things about the topic through a different perspective. Research shows that succeeding a simulation performance contributes to understanding the whole topic. Simulation can be used for example for customer encounter, communication, patient or customer safety, emergencies, nursing in many forms, management teamwork.

¹⁴ Erasmus+ project Methods, tools and resources for efficient and engaging ICT-enhanced teaching within VET (MOTIV-e), No. 2020-1-PL01-KA202-082180

Simulation is a safe environment to learn and experience. It is also goal oriented. High-quality design and learner orientation are the absolute starting point for organising a simulation. Simulation is not the best option for distance teaching because students can record ongoing simulations and distribute recordings for outsiders. The simulation idea is that nothing is shared outside the simulation group.

Etiquette of the simulation:

- ✓ Participate;
- ✓ What happens in the simulation remains in the simulation;
- ✓ Errors are allowed;
- ✓ Respect others;
- ✓ Turn off your mobile phone;
- ✓ Keep simulation mode tidy;
- ✓ Keep an open mind.

The simulation can be combined with other pedagogical methods for example HoloLens AR-glass (Augmented Reality). Students can use HoloLens glasses in the simulation, for example, they can find instructions via the glasses. You can also connect the HoloLens glasses to Microsoft Teams. Then the students who are online in Teams can also see the same as the persons who use the glasses. The same picture of the HoloLens glasses can be seen also on the screen in the simulation class for other students. Then the other students can follow for example that the student in the simulation practice follows the instructions which he or she can see via the HoloLens. For this, you need the Microsoft Dynamics 365 Remote Assist app.

Presentation of content is convenient with

- ✓ presentation resources like *Prezi*, *Powerpoint*, *Powtoons*, *Google slides*, etc., or
- ✓ graphic tools like *Canva*, *Infogram*,
- ✓ mind-map tools like *Lucid* app or *Miro*.

The link below leads to a video provided by a teacher of car mechanics who is describing the use of *Prezi*, *Padlet* and *Miro* in teaching his subject¹⁵:

<https://qualityplacements.eu/digital-resources-for-vet/video-lessons-prepared-by-participants/>

There can be no limits to resources which can be used in delivery of training content. When teaching and learning of vocational content is based on an interactive, student-centred approach it will be linked with resources which allow interaction, personalization, engagement, collaboration and feedback.

¹⁵ The example video was prepared in Erasmus+ project Dig4VET, Digital Tools for Learning and Validation in VET and WBL: Training Program for VET Teachers, Trainers project No. 2020-1-LV01-KA202-077486



Photo-based presentations – ThingLink

by student counsellor Ari Rapo, SALPAUS

ThingLink is an online environment for visual, photo-based presentations. It is a platform to create visual experiences for student-centred learning. It makes it easy to augment images, videos, and virtual tours with additional information and links.¹⁶

In practice it is the only pedagogically oriented service which enables 360-degree panoramas and hotspot-images. The user interface of 360-degree panorama induces curiosity and playfulness like browsing and seeking hiding elements. ThingLink enables you to build and gamify fascinating and immersive learning content. It is easy to learn and use, both students and teachers. It can be used by tablets, laptops, or mobile phones. Teachers can embed the content in different eLearning environments. Interactivity in visual media radically improves engagement and learning performance for all age groups. ThingLink enables you to make visual content instead of boring presentation contents.

There are many possibilities to use ThingLink in education. Students can easily work on projects and assignments with text, audio, photos, and videos. ThingLink offers virtual walk-throughs and tours that give students access to real-world environments and situations that they wouldn't experience otherwise. The content for example interactive 360-degree images and videos helps students to learn academic vocabulary and skills in remote locations, cultures, work environments, or social situations.

ThingLink can be used for example as an introduction to curriculum and courses, it can also be used as a visual diary or portfolio. Teachers can also use ThingLink as a gamification tool. Students are also capable of producing the contents of projects themselves. Teachers don't always have to be the content creators themselves. You can also connect audio to panorama views which offers more cinematic and gameplay experiences.



Figure 13. e-VET training in SALPAUS.

View the interactive video by Koulutuskeskus Salpaus on www.thinglink.com.

[CF934448-0834-47C4-BCB6-79011C000220](https://www.thinglink.com/CF934448-0834-47C4-BCB6-79011C000220)

¹⁶ [ThingLink: ThingLink for teachers and schools](#)

Engagement, Interaction, Feedback

Engagement and interaction is an indispensable part of the modern teaching and training process. It enables personalization and differentiation, and therefore makes the training and learning process inclusive. Digital resources give us the opportunity to make interaction with an audience much faster and more efficient. Within a brief moment we can get feedback and interaction from many individuals.

Regardless of where the class takes place – in person, online, or through hybrid learning – the key priorities should remain student engagement and the learning experience.

It is easy to engage students delivering interactive content with videos, gamification, and activities on platforms such as *Nearpod*, *PearDeck*, *Edpuzzle*, etc.



Interactive lesson on *Nearpod*

by Dangis Varankevičius and Aušra Netikšienė, PMCZ

The example of integrated History and English lesson *NATO - Past, Present, Future* on *Nearpod* (www.nearpod.com) by teachers Dangis Varankevičius and Aušra Netikšienė, PMCZ can be found <https://app.nearpod.com/?pin=A0836324E92ED979EB9268553DFAD5BB-1>.



The use of *H5P* tool

by Laura Vepsäläinen, business lecturer, SALPAUS

The use of *H5P* tool allows easily creating and embedding rich interactive content and activities on content pages in the LMS, such as assignments.

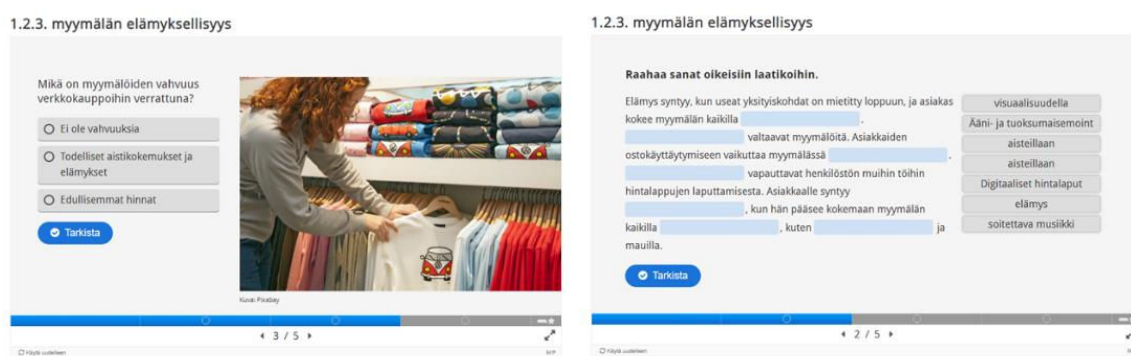


Figure 14. *H5P* content in online Sales course.
By Laura Vepsäläinen, business lecturer, SALPAUS.



A digital lesson with *Google Doodles* by Ilse Snauwaert, CLW

This assignment introduces students to Google Doodles. A Google Doodle is a special, temporary alteration of the logo on Google's homepages intended to commemorate holidays, events, achievements, and notable historical figures¹⁷.

Very often students see the logo change when they open the internet browser. But often they do not know that it contains info about events of that day. Also, some google doodles are games. Through this assignment, students learn to look up information, copy data, filter, etc. In this way they learn to process information independently.

Example of a digital lesson with Google Doodles

<https://docs.google.com/document/d/1Q6G8YA4IRVvmhdWa9xhwxZfpFEgs1trG/edit?usp=sharing&ouid=100288986202689669564&rtpof=true&sd=true>



The use of HyperDocs by CLW

To effectively plan the lessons integrating a variety of web tools *HyperDocs* (<https://hyperdocs.co/>) is helpful. Digital lesson plans provide access for students to all content and learning in one organised digital space. It combines Google Docs with other tools e.g. Slides, Maps, Sites, etc. There are ready made templates to help planning a lesson¹⁸.

Potential and Kinetic Energy lesson plan by Ashly Winkle

<https://docs.google.com/presentation/d/1jEzsq8HqymRlLOZ0aVZ2w5sY7jatVtXlWWAcFSOSFI/presentation?slide=id.p>

Artificial Intelligence (in Dutch Artificiële intelligentie) lesson plan

https://docs.google.com/document/d/1gqyNThasAZBcRCA3V_PNnzltEPwDk18y0g5aIP-Sp7M/edit

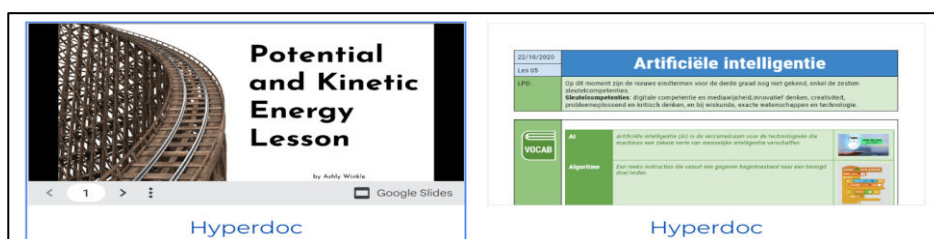


Figure 15. HyperDocs lesson plans.¹⁹

¹⁷https://en.wikipedia.org/wiki/Google_Doodle#:~:text=A%20Google%20Doodle%20is%20a,achievements%2C%20and%20notable%20historical%20figures

¹⁸<https://hyperdocs.co/blog/posts/hyperdocs-templates-for-getting-started>

¹⁹<https://sites.google.com/d/1yXKj5qPCzImci2AHemdQ40JstGfIEBnh/p/1EtSku0CYmcCfegQiCJryY9BjgfYPbNQF/edit>

A number of resources can be used to engage training participants in providing a short response, opinion or feedback: e.g, *Slido*, *Mentimeter*, *Linoit*, *Padlet*, *Google forms*, etc.



The use of *Linoit* to collect feedback

by Vita Žunda, Baltic Bright

The example below shows the use of *Linoit* (www.linoit.com) to collect feedback from training participants in e-VET project.²⁰ These resources will be convenient in both: face-to-face and distance learning, as well as in individual and team assessment.

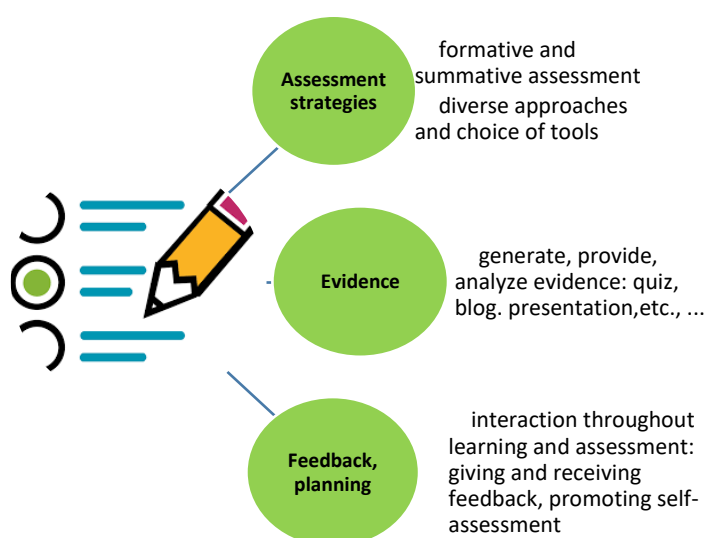


Figure 16. Possible uses of *Linoit*.

²⁰ e-VET training event in Riga, March 2022



Figure 17. Participants' feedback on e-VET training event in Riga.

When we think of assessment as a moment when the students take a test to get a score for the final evaluation (summative assessment) and we can use a number of different quiz resources enabling to create different types of questions and assign points for correct answers: for instance, *Google forms, Quizzes, Mentimeter, Kahoot, Socrative*, etc.

The link below leads to a video illustrating the use of *Quizzes* in VET²¹, open video “Quizzes: Riga Art and Media school”:

<https://qualityplacements.eu/digital-resources-for-vet/video-lessons-prepared-by-participants/>

The quiz resources are an attractive way to encourage self-evaluation, as in most cases the quiz can be taken several times allowing follow up on the learner's progress and thus promoting learning.

Similarly, assessment and self-assessment, measuring progress, can take place using a gaming approach when a student can pass to the next level when the previous level has been acquired.



Game based learning – *Seppo.io*

by lecturer Ester Rokka, SALPAUS

Seppo is an ideal tool for game-based learning. Seppo is a great tool to easily create lessons that combine creativity, collaboration and use of skills and knowledge. Students can use Seppo as a team or independently by their mobile phones. Teacher's role is to be active, for example monitoring the game, assessing the answers submitted by the teams and encouraging the student to keep going. Teachers can also give real-time feedback for the players to motivate them and give them new impetus to the game and learning. Seppo can be a motivator for students to learn more about the

²¹ The example was prepared for Erasmus+ project Dig4VET, Digital Tools for Learning and Validation in VET and WBL: Training Program for VET Teachers, Trainers, project No. 2020-1-LV01-KA202-077486

subject. Seppo game empowers players because the players carry the responsibility for their actions. It forces players to make different kinds of decisions during the game.

Seppo suits well for example for urban orienteering (live map) or to find places/info inside the building. It can be used with new students or staff for orientation. Seppo is a great app to use for the last lessons in the afternoon because it activates students very well. Students also promote their teamwork skills when using Seppo game with other students. Seppo can be a tool for repetition of the lessons learned, ensuring competence before the actual test, or using it as a platform of the real test. Seppo game offers many possibilities for teachers to use it in education. Teachers' imagination puts limits.

The game [on Seppo](#) – [In the restaurant in Finland](#) by Ester Rokka, lecturer, SALPAUS. The game PIN code - A6DG81. Play the game and learn how to survive in the restaurant in Finland.

When we consider ways how students can provide evidence in the learning process, the options are unlimited: evidence can be in the form of presentation, it can be a video or an audio file, it can be a blog, it can be a feedback provided in Padlet or a chart drawn up in a mind-map tool or Canva.

The process of formative assessment can involve many of the resources supporting engagement, interaction, feedback and collaboration. Kathy Dyer in “75 digital resources and apps teachers can use to support formative assessment in the classroom”²² illustrates the variety of resources and diversity of approaches in assessment.

Validation

Distance learning opportunities can be made complete with applying digital validation of skills and competences. The pioneer in applying digital recognition and validation was the ITC sector where global companies could train and/or employ specialists for their needs from different countries and continents without ever meeting them. They started issuing digital badges to confirm the skills and/or experience of these specialists. The screenshot from UNESCO Institute for Information Technologies in Education shows examples of such digital tokens²³:



Figure 18. Examples of digital tokens, UNESCO Institute for Information Technologies in Education.

²² <https://www.nwea.org/blog/2021/75-digital-tools-apps-teachers-use-to-support-classroom-formative-assessment/>

²³ <https://iite.unesco.org/highlights/open-badges-new-opportunities-to-recognize-and-validate-achievements-digitally/>

With the growing trend of distance education, open universities and use of OER, the importance of digital validation has increased. As Covid 19 forced us to make a leap in distance learning, digital credentials help granting better access, personalization and inclusion.

Digital open badges are electronic micro credentials that can be used to identify and promote learning outcomes (knowledge, skills, competence). Open badges can also be issued for participation in certain events or activities.

To ensure credibility, digital open badges are verified through credible organisations by attaching information about the gained skills and achievements.

Oulu University of Applied Sciences (OAMK) from Finland has developed both theoretical framework and practical application of open digital badges at national level in VET teacher training. They have shared their expertise in Erasmus+ project Dig4VET.²⁴ In the link below you can find OAMK video explaining the use of digital open badges:

<https://qualityplacements.eu/digital-resources-for-vet/video-lessons-prepared-by-participants/>

Digital badges or tokens can also be used informally as a teacher wishes to encourage and motivate students. For instance Moodle platform has a function enabling issue of digital tokens.

Conclusions

When designing the *Guidelines* the *e-VET* project partners did not aim to reinvent a wheel but just to share their insights and practical experiences of remote teaching. The *Guidelines* are created by the teachers to the teachers.

The *e-VET* project partners have discussed, tested and applied a variety of digital teaching approaches and digital resources, which have been shared in the *Guidelines*. Therefore, anyone – VET providers, teachers and trainers – who reads the *Guidelines* is encouraged to explore online teaching possibilities in-depth and to become a creator of digital education.

The *Guidelines* is not about teaching about technology, it is about using technology to teach and make the teaching and learning process attractive, engaging and productive.

The main message that has been with the *e-VET* partners throughout the project and concludes the *Guidelines* is the one by George Couros, an international educator:

- “Technology will never replace great teachers, but technology in the hands of great teachers is transformational.”²⁵

²⁴ Erasmus+ project Dig4VET, Digital Tools for Learning and Validation in VET and WBL: Training Program for VET Teachers, Trainers project No. 2020-1-LV01-KA202-077486

²⁵ <https://www.facebook.com/watch/?v=2895212427431334>