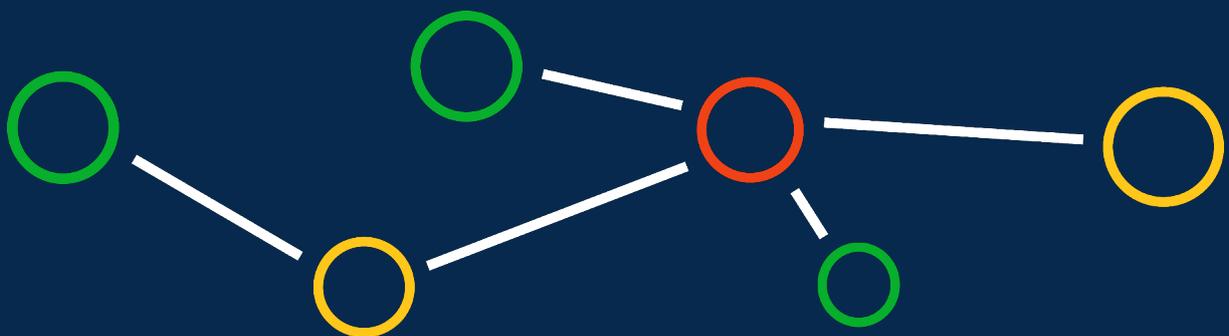


Digital Culture in Vocational Schools Through In-House Innovation

Digital Pedagogy Training
and Intervention Model:
10 Steps Towards 21st Century
Education



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10 Steps Towards 21st Century Education

Published by the  Consortium



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"Dedicated teachers, guidance counsellors, trainers and mentors who benefit from high-quality and inclusive initial and continuous professional development and who act as multipliers and mediators are key to a culture of lifelong learning. [...] Digital teaching and training require VET staff to develop new methodical and didactical approaches to apply in the connected world" (Osnabrück Declaration¹, 2020, p. 8).

¹ Declaration by the Ministers responsible for Vocational Education and Training of the Member States, the EU candidate countries and the EEA countries, the European social partners and the European Commission, meeting on 30 November 2020, with a view to agreeing on new VET policy measures for the period 2021-2025.



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Introduction

For many decades, the belief that information and communication technology (ICT) is a powerful solution to the problems of education in general has been alive and well. But the expected pedagogical turnaround has not yet happened. Learning outcomes have not improved significantly even in countries where schools have an excellent ICT infrastructure (OECD, 2015).

Technology alone will not make education more effective. Teachers using computers mainly for demonstration while explaining will never trigger a pedagogical turnaround, and may even reinforce outdated frontal teaching (Lannert, 2018).

There are many explanations for why in-service training does not work: the average age of teachers is high, teachers are overworked, there is a lack of personalised training tailored to learning needs.

The problem is that the training courses often focus on the use of tools, while pedagogy is relegated to the background. And a stronger pedagogical approach is particularly needed in the training of vocational teachers, who in most countries receive a lower level of initial pedagogical training than teachers of general subjects (OECD, 2021).

Over the past decade, it has become clear that in-service training should not only develop teachers' digital skills, but also encourage them to change their pedagogical approach. But this is only one side of the coin. It is worth looking at the other side.

- There is a wide range of professional training courses. But are there any that are just what you need? Are school leaders aware of the extent and effectiveness of teachers' use of digital tools in the classroom? How do we know where to go from here if we don't know enough about the current situation? We need a situation assessment involving all stakeholders (leader, teacher, student)!
- But let's assume that the teachers themselves chose the training, and that it was of a high standard, both in terms of content and methods. In most cases, the results of the training remain hidden and are not used at school level. Yet there are teachers in every school who already have a tried and tested digital tool in their toolbox. How can existing, hidden knowledge be mobilised? It's a question of organisation and leadership support!

Many teachers are keen to take professional development courses in digital education because they want to learn something that will help them teach better lessons and teach more effectively.

In this book, we present a ten-step process that offers a possible solution to the current challenges for improving the quality of digital education, based on the following basic premises:

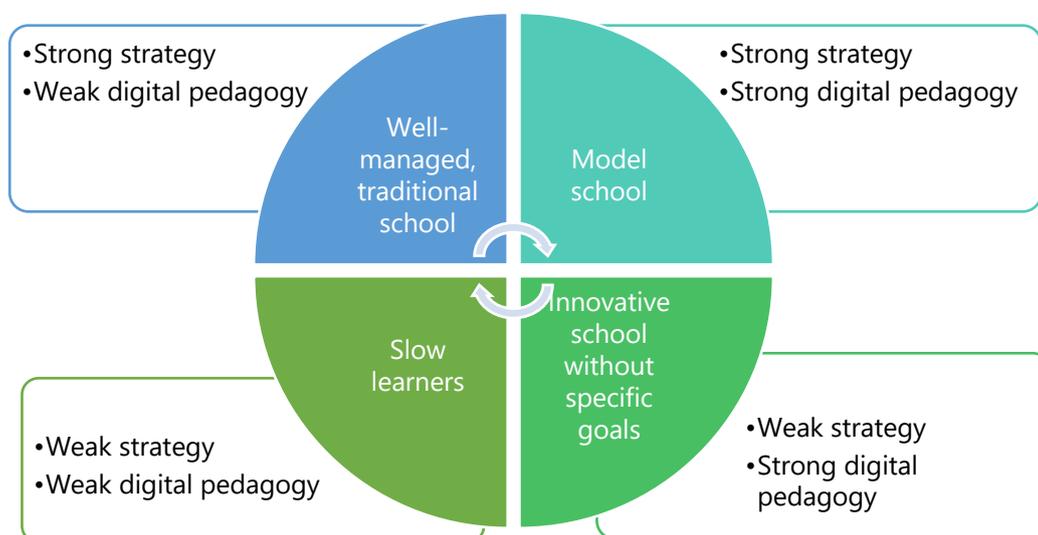
- *Teachers get the support they need from the school management.* The use of online and digital learning opportunities in the classroom means extra work for the teacher, which the management needs to be aware of and support. If there is no support or recognition from the leader (or perhaps more of a hindrance), then efforts to improve will die.
- *Teachers should implement the change with their colleagues.* No teacher can meet the demands of the digital age in isolation. The infinite number of digital tools can be effectively explored by teachers together, sharing their experiences of the tools they have learned.
- *Students give feedback on the innovations.* The purpose of using digital tools in class is to help students understand the material better and not to get bored, as is often the case with face-to-face teaching. Their feedback helps the teacher to produce high quality and truly effective digital material. Students can even contribute to the production of a video, for example.

The ten-step model presented in this book was developed by a consortium of VETWork, a project supported by Erasmus+. The model was tested in a pilot in four countries during the project.

Foreword

By the time the VETWork consortium started implementing its digital pedagogy project, the international community of participating schools had already gone through a 1.5-2 year forced digital period imposed by COVID. The consortium's experienced developers knew from the outset that digital education delivered this way and that way out of necessity would not ensure further immersion and the application of modern, learning-centred methods in the classroom/school.

Our initial assumption was that under the umbrella term "digital education" we would find at least four basic school settings. This assumption later proved to be correct.



Digital education — positioning the school

The 10-step model developed by the consortium gave management and teachers the opportunity to reflect on their development needs in all four school settings.

At the end of the project, some good practices will be published in this e-book. However, the biggest achievements are (a) the strengthening of the strategic approach of school leaders (b) and the spread of learning-centred digital pedagogical practice in schools.

The project also gave us the opportunity to meet and work with students. This is an unconventional approach; in most implementation approaches, students are treated as objects of change rather than autonomous actors.

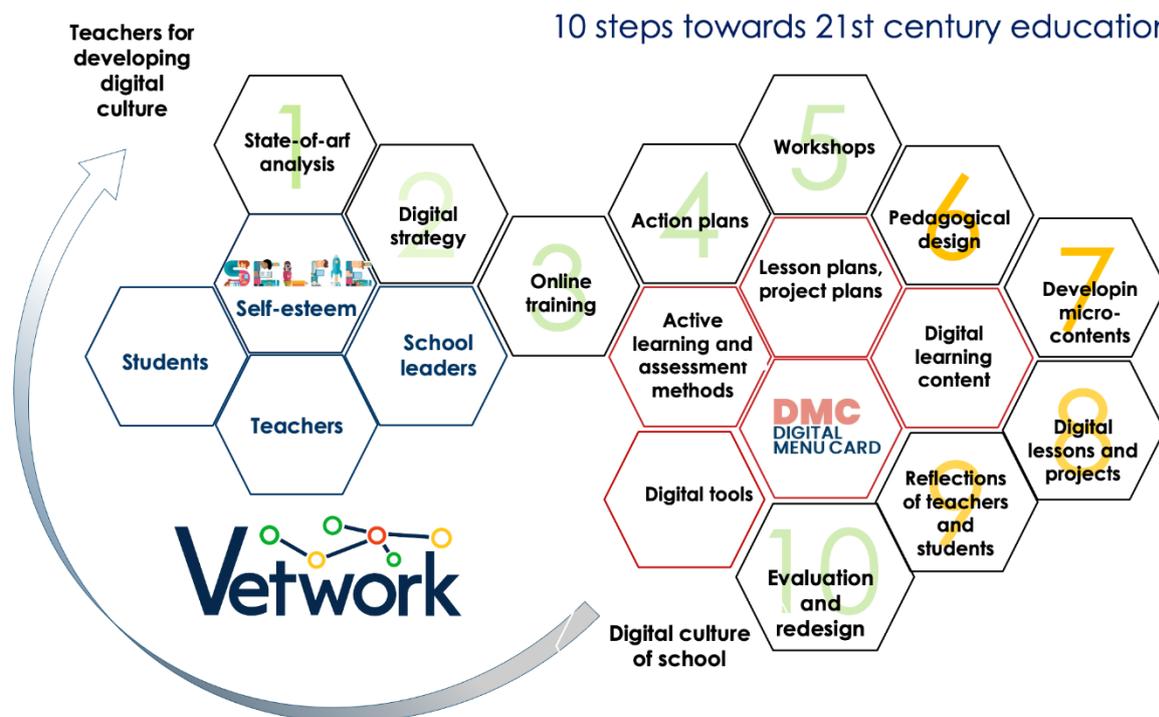
The greatest value, however, is the 10-step model itself. Its development, testing and subsequent refinement, in line with the PDCA principle, has produced the experience

that is published in this e-book. We are convinced that in the future, this method will be used independently by schools, without the consortium, to further develop their own digital pedagogical practice.

Further training in a supportive school environment

The 10-steps model shown in the figure illustrates a teacher training scheme initiated jointly by teachers and school leaders.

The aim of the training is to develop teachers' digital learning skills and to put the learning outcomes to direct use at school level. It is a collaborative learning experience that mobilises the internal resources of the school and promises to have a stronger and longer-lasting impact than traditional teacher training.



The VETWork model

In the diagram, the green colour indicates the steps in which the school management and teachers work together, and the yellow colour indicates the steps in which teachers work alone or with students. The pilot training has also involved education experts as external actors. The involvement of external experts can have a number of advantages, but as we will see, it is not a necessary condition for the model to work.

The blue and red bordered hexagons in the figure illustrate the tools used in the steps around them, namely the SELFIE framework and the Digital Menu Card website developed in the project, which will be described in more detail later.

Objectives and partnerships

Cooperation is the heart of the process. It involves school leaders, teachers, students and, if possible, an external expert who is familiar with current issues in digital education, has expertise in vocational education and training and knows how a school works as an organisation.

The model can be seen as a project organised within the school, with teachers as the most active actors.

The direct target group of the development is the teaching staff, the immediate goal is to improve the digital competences of teachers.

Students are the indirect target group and beneficiaries of the improvements. The long-term aim is to improve learning outcomes, using digital tools pedagogically to equip students with the knowledge and skills required by the labour market.

The sponsor is the school management, which is always present and plays a key role in the launch of the project.

1. Situation assessment and consultation	PLANNING
2. Developing a digital strategy	
3. Online training for teachers	
4. Developing action plans	IMPLEMENTATION
5. Workshop in the classroom	
6. Pedagogical planning	
7. Development of digital learning materials	REVIEW, EVALUATION
8. Digital lessons and projects at school	
9. Teachers' reflections, feedback	
10. Institutional evaluation and redesign	PROJECT CLOSURE

Teacher training is not an isolated, extracurricular activity: the learning objectives reflect the needs of the school, and the validation of learning outcomes comes from the school community.

Learning about digital education with digital tools

Digital tools are not only present in the content of training, but also in the learning process.

For the stocktaking — a review of the current state of digital education — we use the SELFIE framework developed by the European Commission, available free of charge in 31 languages. The training, pedagogical planning and knowledge sharing between teachers is carried out through the Digital Menu Card ([DMC](#)) platform developed by the VETWork consortium.

SELFIE

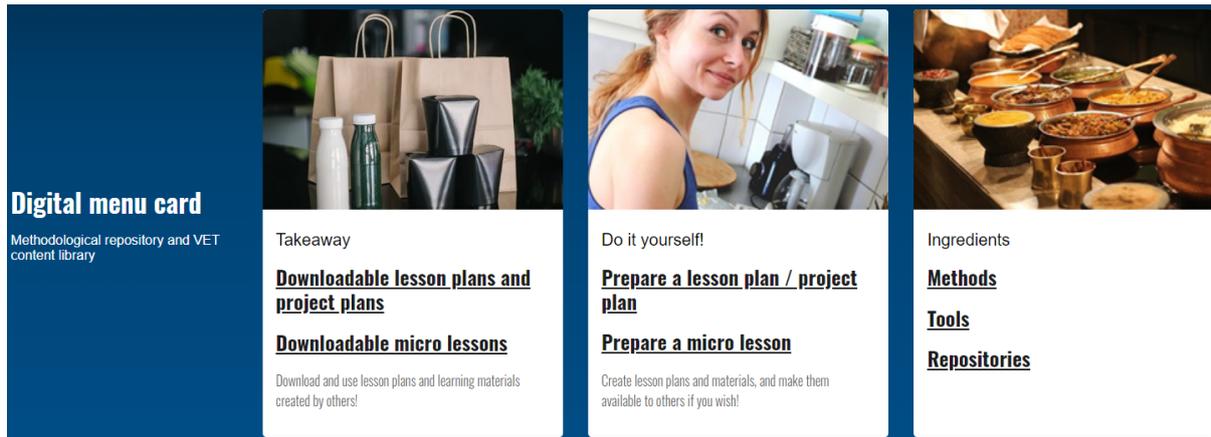
Developed by the European Commission in collaboration with European education experts, [SELFIE](#) is a free, easy-to-use online self-evaluation questionnaire tool that allows educational institutions to anonymously collect the views of teachers, school leaders and students on where their institution stands in terms of teaching for the digital age. The results are summarised in an interactive report, so you can easily identify strengths and weaknesses.

SELFIE aims to support schools in using digital technologies in teaching and learning.

DMC – Digital menu card

[The DMC](#), developed by the VETWork consortium, aims to streamline pedagogical design using digital technology.

DMC supports a wide range of learning and training methods. Whether teachers want to create traditional classroom lessons or more flexible online learning experiences, the platform will help them.



Screenshot from the DMC homepage

The platform is built around the concepts of pedagogical design, knowledge sharing and collaboration, and support for flexible learning and training.

Pedagogical planning with lesson planner and ingredients

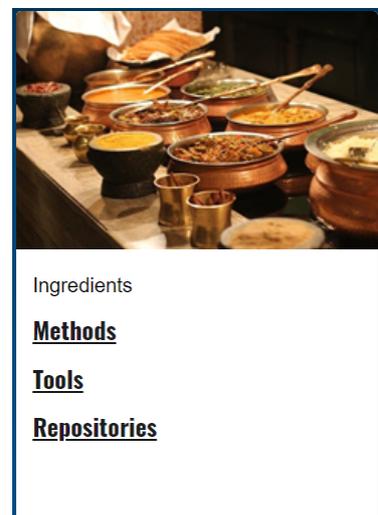
The use of even the simplest digital tools requires careful planning, especially when they are integrated into cooperative or active learning methods such as flipped classrooms. This is because the management of active learning is considerably more complex than in traditional classrooms, which rely on teacher-led presentations and question-based comprehension checks.

Preparing a detailed lesson plan can be a tedious task for teachers, especially for specialised teachers who may not have had thorough pedagogical training.

DMC helps you to do this with an innovative approach to make lesson planning more efficient and effective.

The DMC has all the **ingredients** to prepare digitally enhanced lessons that are engaging and motivating for today's students, effective, dynamic and in line with the requirements of modern education.

The platform contains hundreds of microteaching resources in one place on digital tools, 21st century teaching-learning, assessment methods, creative techniques and open educational resources (OER), facilitating the planning process and ensuring that the lesson plan meets standard requirements and can be included in the teacher's professional portfolio.



The basic resources, micro-contents and tools were compiled and uploaded to the database by the VETWork consortium's team of experts. These resources are specifically adapted to the needs of VET teachers.

And the **lesson planner**, accessible after registration, guides the teacher through the planning process: the fields in the form help to ensure that no important element is left out of the lesson plan, and can even give ideas on how to make the lesson more colourful. With just a few clicks, you can also set the basic data needed (e.g. sector, subject, year, didactic objective, skills to be developed), so teachers can focus on the essential elements of their lesson plan or project instead of administrative tasks.

Knowledge sharing and cooperation

Teaching has traditionally been a solitary profession, in the past teachers worked independently. But in the age of digital education, collaboration is essential for success: teachers need to work together to integrate technology effectively into their teaching practice.

In addition to pedagogical planning, DMC therefore also supports knowledge sharing and collaboration between teachers.

In the Takeaway section, visitors will find **ready-made lesson and project plans**. Teachers can not only save their lesson plans to their own accounts, but can also choose to publish them on the platform. The published lesson plans can be freely downloaded and used by other teachers², or copied to their own accounts, modified for their own purposes and even shared by them.

The ready-to-use lesson plans will serve as an example for teachers on how their colleagues are incorporating 21st century active teaching and learning methods into their lesson plans and how they are using digital tools to support learning and didactic goals.

The app has been designed with vocational education and training in mind, so you can filter the list of lesson plans by 'sector', but you can also narrow it down by subject or year.

² The lesson plans are published on DMC as Open Educational Resources (OER): anyone can download and adapt them for their own use without registration.

Lesson and project plans

Sector
- Any -

Teaching method
- Any -

Subject
- Any -

Grade
- Any -

Competencies / skills
- Any -

APPLY



The development and validity of ethical rules - Code of Ethics
 Be able to distinguish between: 1) industry ethical standards and local,...
 Clone count: 1



Desert Island
 Students revise and practise the grammar material they have previously learned
 Clone count: 1



Culture and Art
 At the end of the lesson the students will be able to use and categorise new...
 Clone count: 0



Filter options for the list of downloadable lesson plans

Currently, the number of lesson plans shared on DMC is close to 100.

At the end of each lesson plan and project plan, the platform also provides a commenting facility to support collaboration and joint thinking.

The main criticism in analyses of the current state of digital education is the self-serving use of tools without pedagogical planning: instead of the use of digital tools pointing towards modern active learning and teaching methods, in many cases they reinforce the frontal transfer of knowledge, and do not support collaborative and interactive learning.

The DMC is not simply the umpteenth database where teachers can find information and read about digital tools and applications.

DMC is a pedagogical planning tool in which the planning of a lesson/project starts with the definition of the learning objective. It encourages the choice of teaching and assessment methods and digital tools for the pedagogical objectives, rather than the other way around.

The concept is a metaphor: a restaurant where you can choose between ready-made meals or pick and choose the ingredients and prepare your own lunch. The ready-made meals correspond to the downloadable lesson plans, and the ingredients include everything you need for pedagogically driven planning:

- innovative teaching and assessment methods and techniques,
- a collection of digital tools with examples and experiences from other teachers,
- a free online repository of free educational resources,
- digital micro-learning contents shared by teachers.

The planning is supported by a "queue guide" and facilitated by checklists at most steps — for example, there is a checklist of transversal skills to be developed.

The teacher can decide whether or not to make the lesson plan public. Published lesson plans and project plans can be "taken", i.e. downloaded and evaluated by other teachers.

The DMC does not only contain technical descriptions of digital tools, but also the experiences of the authors (teachers) in the classroom, the pedagogical benefits of using the tool, possible difficulties and risks.

The number of teachers registered on DMC and the number of digital content (learning methods, digital tools, micro-content) that can be "taken away" is currently approaching 200 and is expected to grow steadily in the future.

As we will see, the website not only has an important role to play in the model, but is open to all teachers and schools who wish to improve the quality of digital education through the method presented.

10 steps towards 21st century education

Step 1: Situation analysis – PLANNING

The first step is a thorough situation analysis. School leaders, together with teachers and involving students, map and assess the current state of digital education in the school, from the available infrastructure to the pedagogical use of digital tools.

The results of the analysis will be used to formulate the development objectives that will be included in the school's digital strategy, and will be the basis for deciding the purpose and content of the training.

Participants: teachers, school leaders, students, external expert

Methods: interviews with teachers, heads of institutions, students, consultation with experts, questionnaire survey, SWOT analysis.

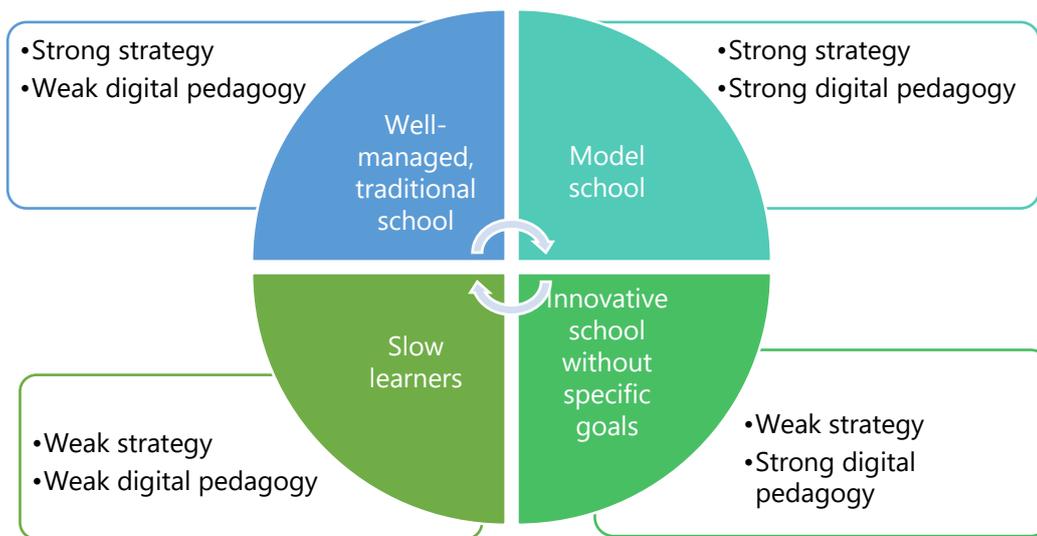
Interviews with stakeholders

The situation analysis starts with discussions and interviews with school leaders, teachers, students and IT infrastructure administrators, working in four different groups with a set of questions tailored to the target group. The interviews can be conducted by internal staff, but if there is a possibility, it is worth involving an external expert who can help to form a more objective picture and formulate suggestions for improvement through the eyes of an outsider.

The questionnaires we used are in the annex, but they are quite specific, as the experiment took place in a specific situation, right at the end of the COVID period.

On the basis of the data collected in the interviews, school leaders, in consultation with the external expert, formulate proposals for intervention and improvement.

In the experiment, interviews in Hungarian schools were conducted by educational researcher Dr János Setényi. He proposed the following simple tool to the heads of the schools to determine the situation of the school.



Digital education — positioning the school

Example: a peer review proposal following a self-assessment

Starting position:

We found a well-run, independent and responsible institution, with nice teachers and open-minded, bright students. In general, the school has responded well to the critical situation of COVID-19: they have competent IT staff, teachers' learning has been continuous and organised, they have experimented with and are still using a number of different platforms and applications, some teachers have engaged in content development and have significantly revised their pedagogical practices. Students have been flexible in adapting to changing circumstances.

The following areas could be part of the school's digital strategy:

There is concern that the huge self-improvement and learning of last year will be wasted after normalisation in September 2021. Therefore, the school's digital strategy should include popular, 'soft' forms of self-teaching/learning that require the continuous practice of online elements of education. Once normalised, the focus will no longer be on the technical elements but on the (pedagogical) enrichment of learning/teaching.

Preserve online education in certain programmes and activities:

- At the vocational school: some classes can be held online (if the timetable is adjusted accordingly).
- It can be advantageous to record the lessons and make them available online, for example to those who have just missed them.

- Teachers' meetings, parents' meetings if necessary, reception hours can be held (at least partly) online.
- Online forms of student exams (e.g. computer-based classroom, quizzes in the e-classroom).

Where is digital education in schools? Self-evaluation with SELFIE framework

The next step is a broad survey involving the vast majority of staff and students. The aim is to refine (nuance) the picture obtained by talking to the management, some teachers and students, based on the views of the school community.

The [SELFIE](#) framework will be used for the survey, but other proven measurement tools may be suitable for analysis. The advantage of SELFIE is that you don't need to develop your own questionnaire, you can fill it in online and you get the analysis ready.

The self-assessment covers eight areas, with responses from each group, school leaders, teachers and students assessed separately:

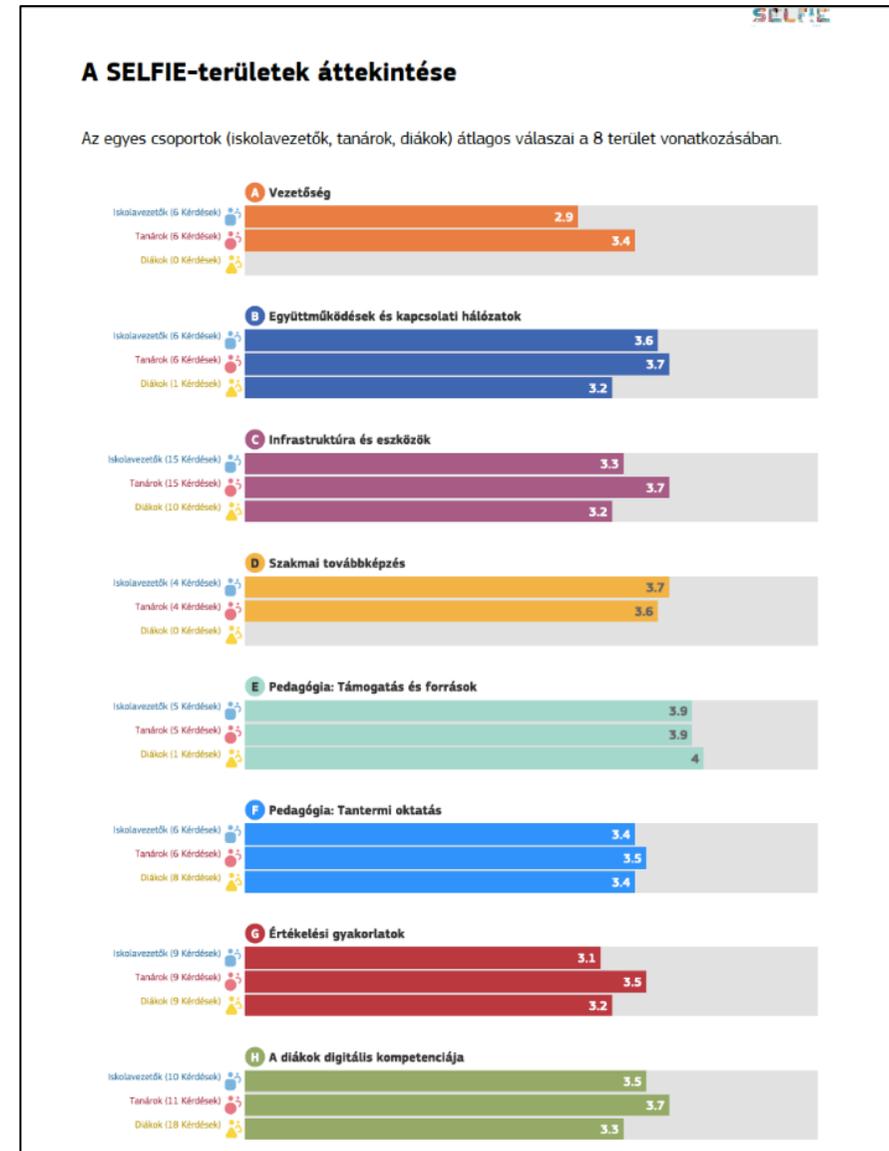
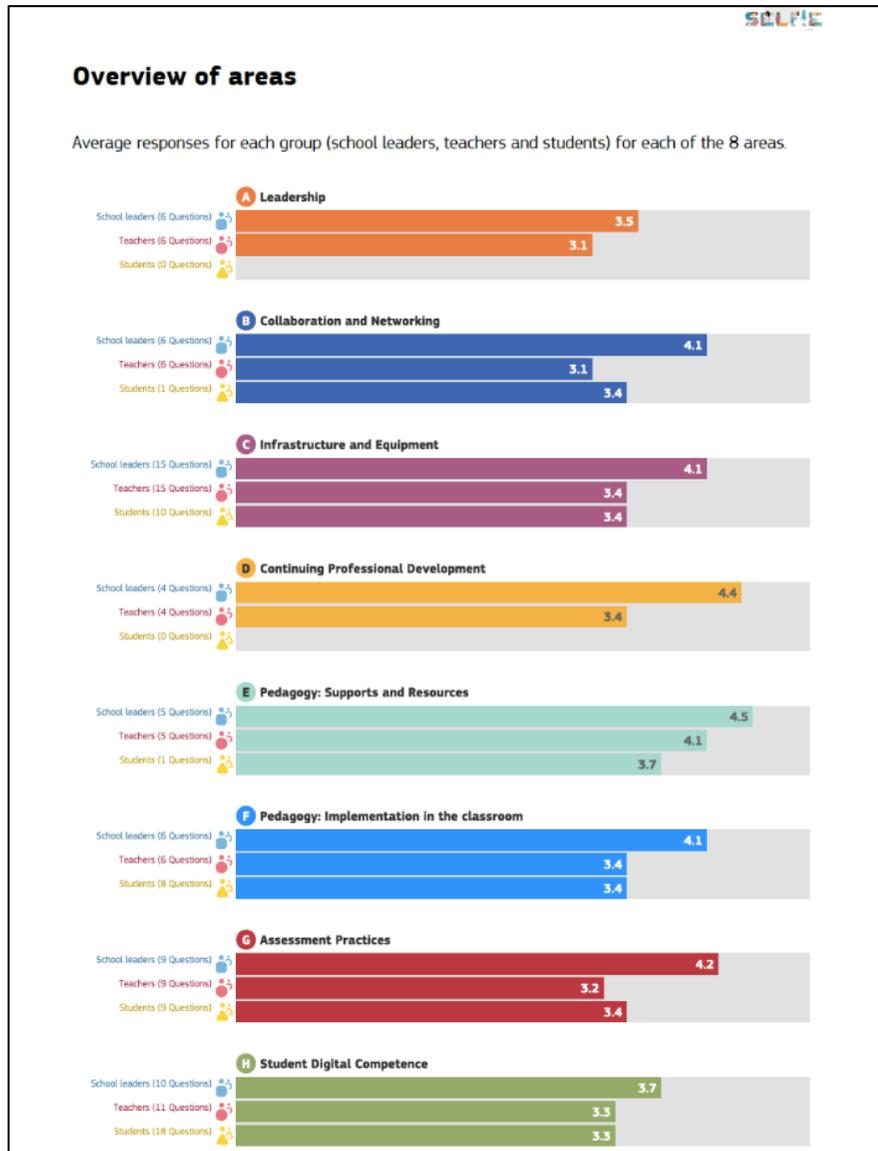
1. school leadership, management,
2. collaborations and networks,
3. infrastructure and tools,
4. professional training,
5. pedagogy: support and resources,
6. pedagogy: classroom teaching,
7. evaluation/feedback exercises,
8. students' digital competences.

Data analysis is facilitated by the graphs generated by the system. Based on the results, the school community can decide which of the eight areas(s) to focus on.

By analysing their position, participants get an idea of their own readiness. Teachers can identify their learning needs, learn about students' digital competences and learning habits, and the aggregated data can help school leaders to build a picture of the current state of digital education in their school.

The following graph shows two bar charts side by side, as an example, from the results of two schools. The bar groups are the columns for the eight development areas. Each bar group has three columns: those for school leaders (top columns, labelled blue),

teachers (middle columns, labelled pink) and students (bottom columns, labelled yellow).



The left graph shows that school leaders score significantly higher than teachers in all areas, while on the right there is no significant difference between the ratings of leadership, teachers and students. What does this suggest? It suggests that the responses of the respondents are very likely to be a realistic reflection of the situation in the right-hand school!

Step 2: Develop a digital strategy – PLANNING

The second step of the intervention is to develop a digital strategy for the school, based on the results of the situation analysis.

Before the strategy is developed, teachers are asked to help the board to develop the digital strategy by answering the following questions and completing the table below, based on the results of the survey and their own experiences.

1. What improvements are needed to improve the quality of digital education?
2. What innovative solutions do you propose?
3. What are the main development objectives?
4. What improvements are needed to improve learning outcomes?
5. What outcome can we expect?
6. What external factors should be taken into account?
7. How will we check that we have reached the target? (Data, monitoring, control.)

	Numerical or qualitative indicators (indicators)	Source of the indicators (examination registers?)	Risks (what could be obstacles to achieving the objectives?)
Long-term goals			
Immediate, short-term goals			
Expected results			
Activities			

The next task for school leaders is to develop the school's digital strategy based on the results of the comprehensive study (interviews, SELFIE survey, recommendations of external experts and teachers) and present it to stakeholders for their mutual agreement.

Outline of the strategy

1. **Introduction:** purpose of the document and the underlying inputs.
2. **Vision:** a statement that describes the future state or end goal that the organisation wants to achieve. A well-articulated vision statement should be clear, concise, inspiring and challenging to motivate and guide the organisation's actions and decisions. It should also be consistent with the values and culture of the organisation.
3. **Mission:** a statement that defines the purpose of an organisation and how it intends to achieve its vision. A well-formulated mission statement should be specific, measurable, achievable, relevant and time-bound. It should also be consistent with the organisation's vision and values.
4. **Strategic objectives**
5. **Innovative aspects**
6. **Priority areas for development based on SELFIE:**
 - Management
 - Cooperation and networking
 - Infrastructure and tools
 - Continuing vocational training
 - Pedagogy: support tools and aids
 - Pedagogy: classroom implementation
 - Evaluation exercise
 - Digital competence of learners
7. **Interventions**
 - On the basis of individual self-assessments, concrete action plans are drawn up (content: what level of development they want to achieve in

what area, and what needs to be done at individual and institutional level).

- Training needs assessment, training plan (content: external/internal training, mentoring, individual learning programmes), follow-up of training courses completed.
- The digital mentor attends classes, gives feedback and acts as a partner to help colleagues develop.

Example: a digital pedagogical strategy – 2025, Biotechnology Education Centre Ljubljana

Introduction

We developed our strategy in line with the main objectives of the school, taking into account the results of the SELFIE institutional self-assessment, given interview by teachers, students and head teachers.

Vision

In our school, educators, equipped with modern, student-centred pedagogical methods, use a wide range of digital tools to prepare our students for successful participation in the labour market, both professionally and also in terms of key competencies.

We wish to unify and standardize implementation of a few basic digital tools for educational purposes. There should be one clear system for communicating with students.

Furthermore, we will support the teachers in using a variety of different methods and digital tools for pedagogical purposes of their own choosing.

Strategic goals

- Providing high quality, student-centered education.
- Developing students' digital skills in line with labor market needs.
- Continuous training and development of our teachers.
- Unification and standardized implementation of 2-4 basic digital tools for educational purposes (eAsistent, Google Workspace, Microsoft Teams, Moodle).
- Further ICT/digital education on online tools should be individualized as much as possible for teachers as well as for the students because of their different levels of pre-knowledge, different needs (e.g. one teacher might need totally different demonstrations and explanations on online tools than some other teacher because of different set of pre-skills and needs).

- ARNES internet student identities should be kept in the following year as well.
- Technical administrator's mail support should be kept active (always accessible to all students who have technical issues that they cannot resolve by themselves).

Innovative aspects

- We introduce ICT representatives in each class (students responsible for communicating all possible technical issues regarding online education to school's technical administrators).
- We introduce the role of digital mentor (teachers that feel more competent in ICT and on their own initiative look to improve their knowledge and competences).

Priority areas for development

- Regular use of the MS Teams online learning environment by all teachers and further exploitation of the opportunities provided by the platform.
- Strengthen the fund-raising activities of the school, seek and involve external relations and resources for the rapid and efficient improvement of the infrastructure.
- Further development of vocational training materials using new teaching-learning methods (keeping in mind the goal of motivating students and adequacy of methods for different school subjects).
- Continuous development of teachers' methodological and digital skills.
- Our strategy is focused on the following SELFIE areas: 3. Infrastructure and equipment; 4. Continuing professional development; 7. Assessment practices.

From our educational practice developed under COVID-19 We wish to preserve the following:

- Teachers' conferences and meetings can be kept (or at least partially) online; also, parents council meetings and office hours, if needed.
- Online forms of student examination (e.g. in a computer classroom, quizzes in e-classroom).
- Online forms of learning materials (e.g. the teachers upload the material on MS Teams so that the students have easier access; students help develop different learning materials so that we support different learning styles).

If BIC implements a combined form of study (classical + online), then lectures/explanations should be recorded and constantly accessible online to students; also, an online course should be scheduled only at one specific day during a week (block hours), and there should not be a combination of online and live programme on the same day (the whole day online, or the whole day live in school).

Review

The digital pedagogical strategy is reviewed annually together with the closely related action plan (interventions, indicators).

Planned date of next review: 2023

Communication

Internal and external communication plan for the strategy:

Will be discussed on teacher conference.

Will be published on the school website.

Step 3: online training – networked learning – IMPLEMENTATION

Step 3 of the intervention is community learning on DMC. The aim of the training is to familiarise with the possibilities, exchange knowledge on 21st century learning/teaching methods, pedagogical planning methods and the conscious use of digital tools.

The output of the training is two concrete products.

- Participants identify their own learning needs, choose the options they would like to learn more about, which are best suited to their subject and the age of their learners.
- A first draft digital lesson plan (project plan) is prepared and shared on DMC.

The training followed a unique methodology, which was not only reflected in the fact that the course material was distributed on DMC instead of textbooks or other traditional sources. Meeting the demands of the digital age is an impossible undertaking for an individual teacher. Learning about the infinite variety of digital tools, learning and practising a tool or method tried and tested by others, can only work if teachers share their experiences with each other on an ongoing basis.

The emphasis is on collaboration, learning from each other, sharing knowledge: in every school there are teachers who are a little bit ahead of the rest, have higher digital skills, know more about pedagogy or have a better sense of it than the others. No one knows everything and everyone knows something!

At the end of the training, a lesson plan/project plan will be prepared on DMC. In the planning process, teaching methods and digital tools are chosen that fit in with the teaching-learning objectives, so that the digital tools are truly pedagogical and improve the effectiveness of learning.

Ten teachers from each school took part in the pilot training and were supported by a mentor. As with the situation analysis, it is beneficial to have an external expert as a mentor, but the experience of the experiment has shown that most schools have teachers who are suitable and willing to take on this role.

The training lasts three weeks, according to the following schedule:

Week 1: The changing role of teachers, active learning methods, assessment techniques, innovation in education

Teachers will be introduced to 21st century active teaching and learning methods and suggested lesson planning techniques, while exchanging experiences on these during the forum.

Each participant chooses the teaching and assessment method that they would like to learn more about and use in their lessons.

Week 2: Using digital tools for pedagogical purposes

Teachers will familiarise themselves with the digital tools shared on DMC and choose at least three they would like to try out. In the assignment, they will justify how the tools they have chosen fit in with their pedagogical and teaching objectives, the age of their students and their learning habits.

Week 3: Using open educational resources, lesson and project planning using digital tools

There are countless free learning resources on the internet, some of which are described on DMC. This week, teachers will share their experiences, suggesting to each other useful repositories that they have already tried.

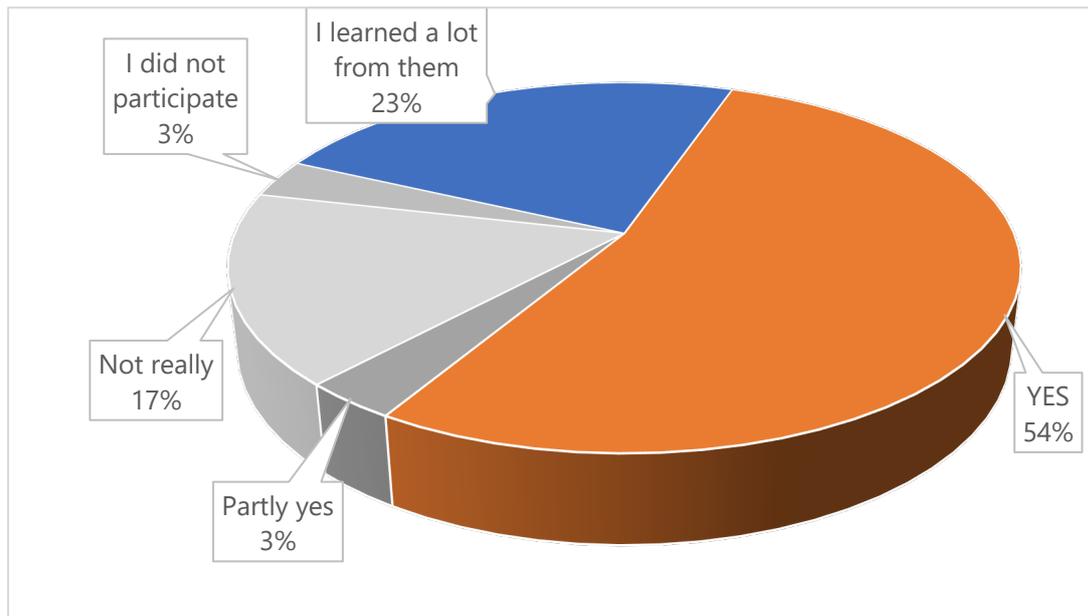
They create their first digital watch design for an imaginary digital watch at DMC.

The tasks are completed individually by the participants, and based on the individual plans, a group development plan is drawn up with the help of the mentor.

At the end of the training

- participants evaluate the training by completing an online questionnaire,
- mentors evaluate the lesson plans and summarise the experience based on the tasks submitted.

In the post-training evaluation, we received many suggestions for improving DMC.



Have you managed to get new ideas from other colleagues on the forum?

The pilot training has involved 69 teachers from the four countries. There are currently nearly 100 lesson plans on DMC, and 187 freely available educational content.

Details from mentor evaluations

The most commonly chosen methods are **project-based teaching-learning**, group work and flipped classroom (the latter is also designed to be used in projects). As for **assessment methods**, I myself have suggested to several teachers a method other than the traditional one. We discussed and they accepted my suggestion and seem to have incorporated it into their lesson plans. **Innovative techniques** were chosen according to what could be applied in the lesson, what 'fitted' the task.

What might be behind the teachers' decision? How do they intend to use the method?

Teachers usually use a method that they have tried and tested and that works for them, or a method that they think is good for a particular lesson.

But motivated choice is also what is expected in the new vocational education and training system. As is well known, in the last year and a half, teachers in Hungarian VET have been confronted with the need to apply the project method, so they have been concentrating on this. Of course, there are always innovative teachers who look ahead and choose the methods for their lessons themselves. Both ways are good, as they produce the best experiments and of course the applications that are useful, for example, in testing the project method on a large scale.

The use of a method is always a "test" for the brave, with one or two teachers taking it upon themselves to carry out the experiment and report back on their experiences.

What digital tools have teachers chosen?

Many of them chose tools for making presentations, creating collaborative spaces and taking online tests. These were probably chosen because the recent period (COVID, online teaching) has given them the opportunity to continue using the tools they have learned in the online space in their teaching. They have experienced many of the benefits of these tools over the last 1.5 years and are still keen to use them in addition to face-to-face teaching.

Extract from teachers' feedback

The training highlighted the wide range of digital tools that can be used in everyday teaching. I learned about some particularly useful ones that I would like to incorporate into my work. Young people are quicker to learn new methods that help them.

Videos made by others can be useful, although in my profession there are not many. For teaching creative subjects, free resources are useful and new to me.

Step 4: Developing action plans – IMPLEMENTATION

Based on the experience of the training, each teacher will prepare his/her own development plan, action plan, in which he/she will summarise, based on the tasks submitted, what he/she would like to improve, what digital tools and teaching methods he/she would like to master better and why.

Based on the individual action plans, the next step is to prepare a further training plan, which is aligned with the institutional-level development areas and development goals identified in the situation assessment and formulated in the school's digital strategy.

Extract from the teachers' development plans

I plan to use a variety of assessment methods to get a full picture of students' knowledge, progress and skills. It is important to have diagnostic, formative and summative assessments. The importance of project-based learning has been mentioned a lot lately, and project-based learning has an essential role to play in the outcome requirements of vocational training. Therefore, my aim is to plan as many small project activities as possible in the future, where we would work on learning material in small group sessions. In this way, I would help students to prepare for the vocational exams in a more practical and easier way.



I particularly liked the game-based and network learning method — I would like to combine it with project-based learning. I also use the flipped classroom method in some lessons to inspire students' problem solving. It's good that we have more and more digital tools available for teaching, and these tools are also good to use on mobile and desktop devices. This training also offered a number of new features: Book Creator, Camtasia, Canva, Geogebra, Jitsi Meet, Liveworksheets, Nearpod, etc.

We worked in groups and forums to share who uses what digital tools. As the weeks went by, I noticed that more and more tools were appearing on the site, which was great, I also learned a lot of new things. Thanks for the opportunity, I look forward to working with partners in the future."



In my role as a director — as I have the opportunity — I consider it important to disseminate the methodology and through this to increase the number of colleagues using the DMC platform. The main aim of dissemination is to generate interest and motivation, because if colleagues recognise the concrete benefits of using a method (which is a challenge to communicate, but possible), they are more likely to use it.



Before the training I already knew and used a number of methods (most of them mainly during my teaching practice at university). In the future I would like to learn digital organisational interfaces like Linolt or Mural, which could be used to spice up a boring, introductory part of a lesson or to make a teacher's explanation more interesting.



Before the training, I considered myself relatively knowledgeable about digital tools, but it turned out that there are plenty of other particularly useful methods, tools and resources that could be integrated into my daily work, which would make the curriculum more interesting and more consumable for young people. I have come across many tools that I had not even heard of before and some of them I would like to try out in practice. This could contribute not only to improving my work but also to making school curricula in general more attractive.



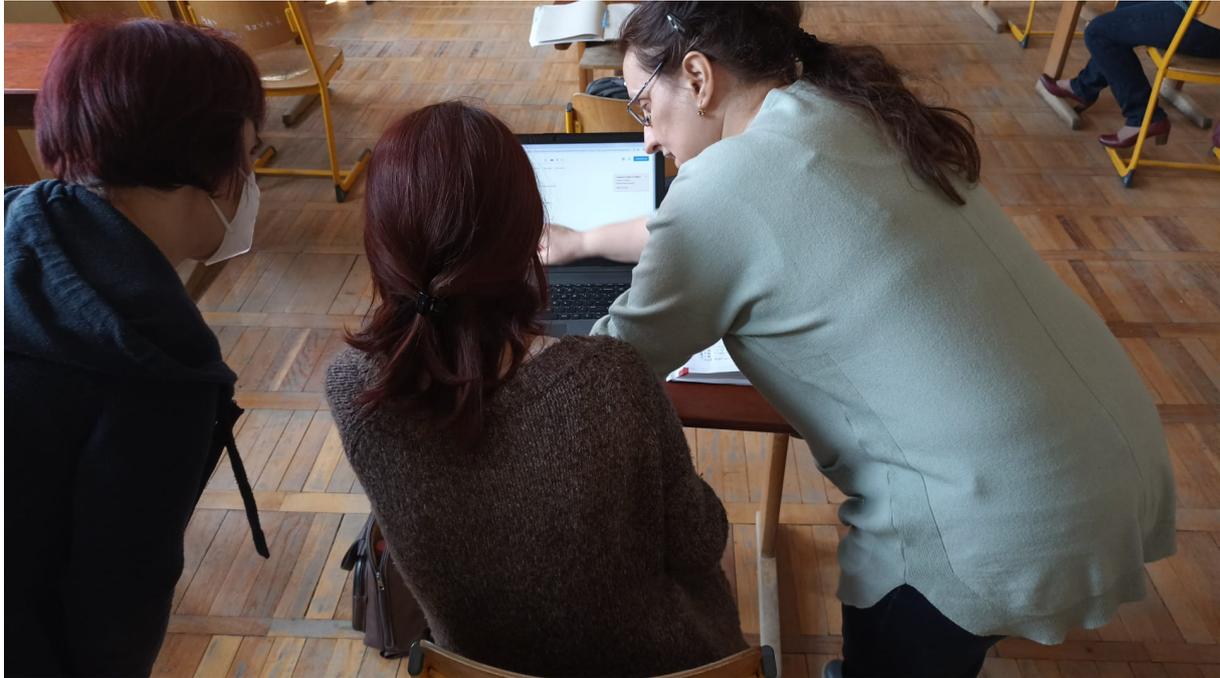
1. Staying credible and informed: keeping up with trends is a real challenge in the creative profession. Being professionally informed is essential for credibility. The profession and the expectations of the profession are constantly changing. Until the early 2000s, the term DTP (desktop publishing) covered a large part of the creative profession, which is now covered by the terms offline and online publishing. The former refers to the production of traditional paper-based publications, while the latter refers to the production of material for online platforms. My aim is to spend time weekly following current trends, watching Creative Cloud presentations and tutorial videos.

2 Delivering more marketable professional knowledge: I believe that students do not need abstract information, but knowledge that will help them succeed in their professional lives. Creative Cloud's services go a long way to meeting this need. My goal is to incorporate Adobe software into as many classroom assignments as possible.

Step 5: In-house learning – workshops – IMPLEMENTATION

Traditional training programmes end after the learning sessions, but in this model this is where the most important phases of the intervention begin. After the in-service training, which takes place within the school and mobilises internal resources, teachers develop an action plan adapted to their individual learning needs as outlined during the course. Now, around the selected themes and topics described in the action plans, the school plans collaborative learning sessions built around workshops.

The workshops are led by teachers who have more experience than their peers, but occasionally an external expert is invited. As the sessions are held in the school, teachers can test the applications on their own devices and get help from the experts on the spot if they encounter any problems.



A brochure, attendance sheet and evaluation questionnaire for the workshops. In the experiment, each school organised 10-15 in-house sessions, each session lasting 1-2 hours depending on the topic.

Examples: workshop plans

Name of innovative method or digital tool presented

Digital tool: Google Forms

Short description of the method or tool

Questionnaire builder application that also supports test creation

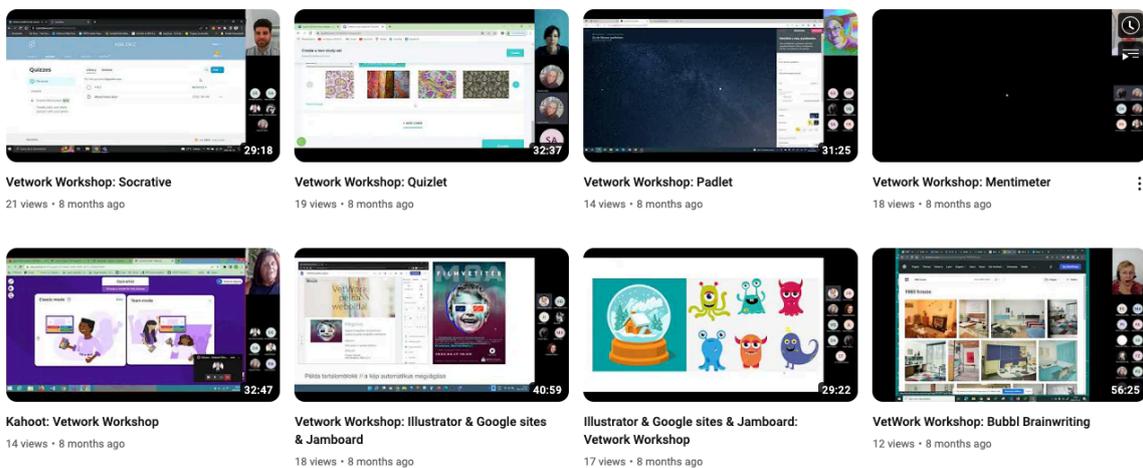
Outline of the tasks to be performed in the occupation

- complete the Google Forms test introducing the session
- monitoring the presentation of the application
- create a Google Forms questionnaire with 4 different types of questions following the steps described
- sending the completed test to 5 colleagues present
- completing tests given to you by your colleagues
- discussing experiences, answering questions

List of tools, aids and internet references used

DMC training materials
[Create a Google form, Google questionnaire quickly and easily](#)
[A test: What do you know about summer?](#)
 PPT — presentation

Teachers from the SZÁMALK-Szalézi Technikum és Szakgimnázium recorded the workshops on video, published the programme on the school's website and shared the videos on the school's YouTube channel.



Screenshot from the [YouTube channel of SZÁMALK-Szalézi Technikum és Szakgimnázium](#)

Step 6: Pedagogical planning – REVIEW, EVALUATION

In the third step, based on what they have learned, the teachers on DMC have drawn up the first outline for a lesson or project in which they will use the innovative teaching and assessment methods and digital tools they have learned in the online training. In the workshops, they deepened their knowledge through collaborative learning, further developed their digital skills and updated, refined and finalised the previously prepared outline.

These lesson plans are available on DMC: anyone can download them without registering, or copy them from the interface and create their own lesson plan adapted to their learning and pedagogical objectives. Copies are "noted" by DMC and the number of copies made of the material is displayed.

 <p>Művészetek és humán tudományok</p>	<p>Fenntartható divat A projekt végére divatbemutató/kiállítás létrehozása újrahasznosított... Másolások: 1</p>
 <p>Üzlet, közigazgatás és jog</p>	<p>Gazdasági ismeretek - Viszonyszámok Az óra végére a diákok képesek lesznek a viszonyszámok rendszerében eligazodni... Másolások: 1</p>
 <p>Szolgáltatások</p>	<p>Gazdasági ismeretek - Viszonyszámok Az óra végére a diákok képesek lesznek a viszonyszámok rendszerében eligazodni... Másolások: 1</p>
 <p>Művészetek és humán tudományok</p>	<p>Shooting a music video Az óra végére a diákok élményekkel gazdagodnak. Megérthetik egy általuk kedvelt... Másolások: 0</p>

1 2 3 4 5 6 [Következő >](#) [Utolsó >>](#)

Lesson plans on DMC

Step 7: Developing digital learning materials – REVIEW, EVALUATION

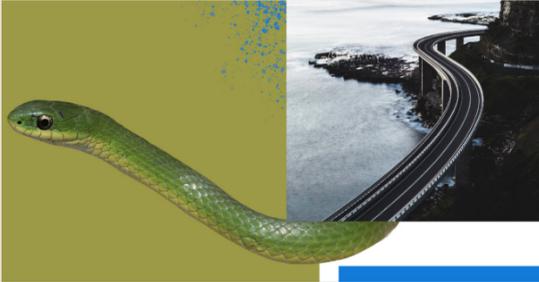
In this step, teachers were asked to choose free lesson materials for the lesson based on the lesson plan, or to create their own and share them with others for free use on DMC. The repositories published on DMC are available for searching, and the digital tools they had learned about in the training and workshops were available for editing the lesson materials.

 <p>#CodeWeek Európai programozási hét weboldala Kedvelések: 1</p>	 <p>Creative Commons Search Segítségével nyílt licenzű, köztulajdonban lévő képeket kereshetünk. Kedvelések: 7</p>	 <p>Digitális Témahét Tudásbázis Mintaprojektek a szakképzés „alapozó oktatásához” (minden ágazathoz kidolgozva). Kedvelések: 5</p>	 <p>DPMK Mintacsomagok Digitális pedagógiai módszertani csomagok. Kedvelések: 5</p>
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Free libraries on DMC

The experiment has so far categorised nearly 50 digital micro-learning contents on DMC, each with a link to the corresponding lesson plan in the description.

Example: [teaching material Montage and Collage](#) by György Varga Gábor

Make a Cutout Collage		<h3>KOLLÁZS</h3>  <p>Ezzel szemben a kollázs-technika arra törekszik, hogy kiemelje a saját "ragasztottságát". A kollázsokon feltűnően elkülönülő képelemek alkotnak egy képet. Ezek a képek közel sem egységesek, és egyáltalán nem valószínűek. A technika lényege az, hogy megmutatja, hogy az eredeti képek bár különböző forrásból valók, mégis van valami kapcsolat közöttük. Így az összevisszaság ellenére a kollázsok mégis van valamilyen mondanivalója. A kollázs a dadaista művészek kedvelt eszköze. A két műfaj közötti határvonalat nehéz pontosan meghatározni, hiszen vannak olyan képek, amelyeknél nem tudjuk megítélni, hogy a határok elmosása hangsúlyosabb-e, vagy pedig a különböző források kiemelése. Ma egyébként montáznak nevezik az olyan képeket is, amelyek több fotóból állítják össze egy adott tárgy képét, és kollázsoknak hívják azokat a képeket, amelyeken az egységes látvány sok kicsi, különböző dolgokat ábrázoló képből áll össze.</p>
Photoshop Collage Templates		

Extract from the lesson plan to which the lesson is linked:

Design assignment for photographers using Creative Cloud

Institution: SZÁMALK-Szalézi Technikum és Szakgimnázium

Brief description: The framework curriculum for the creative photographer treats design competences as three separate subjects (visual design basics, design basics theory and design basics practice). There is an overlap between the three subjects, so I will show the topics in context through practical exercises in the lessons. The Creative Cloud and Adobe programs provide an excellent opportunity to combine theoretical knowledge with practical experience in the classroom. The time frame of 3×45 and 1×45 minutes is just enough to introduce the use of the programs and the repository, the basics of design theory, colour theory and typography through a creative task in each lesson. Assignments are uploaded by the end of the class and I share the completed work with the group (Adobe Lightroom). In the shared album, students have the opportunity to self-assess. It is not possible to get a job in the creative professions without knowledge of Adobe software, so the information given does not seem superfluous to the students. Those who are serious about school and their future will actively participate in the lessons.

Step 8: Deliver digital lessons and projects – REVIEW, EVALUATION

This step is the core of the process. Teachers deliver a lesson in the classroom that has been carefully planned with the learning objectives, the students' learning habits in mind, using the possibilities of technology, but focusing on teaching effectiveness and pedagogy. It was in this lesson that all the work they had put in was put to good use and they were able to see for themselves how far they had achieved the learning objectives they had set out in their development plans.

Almost 1500 students in the five schools took part in the pilot lessons. At the end of the lessons, the teachers asked the students for feedback using a questionnaire developed together. The results of the questionnaires filled in by 201 students in the Hungarian-language classes were aggregated.

Excerpts from students' free text responses

These classes are great and I'm looking forward to the next one.

It is much better to learn this way because it is more exciting. ♥

I am glad that oszi (class teacher) is so enthusiastic, I would like to do it again.

At the word cloud, I was able to assert myself and work as part of a team.

It was much better than a normal lesson, you can pay much more attention, it is much more useful and interesting!

I don't like digitalisation. I am a conservative and I would not like to see digitalisation suppressing traditional things in schools.

Evaluation questionnaire completed by students

1. School:

2. My teacher's code:

3. How was this lesson compared to the others?

- | | |
|--|--|
| <input type="checkbox"/> We worked with interesting methods and tools that had not been used before. | <input type="checkbox"/> Digital devices have made it difficult to keep the clock running. |
| <input type="checkbox"/> Basically, it was the same as usual. | |

4. How would you describe your own class work compared to other classes? (You can mark more than one answer.)

- | | |
|--|--|
| <input type="checkbox"/> I've done more | <input type="checkbox"/> It did not arouse my interest |
| <input type="checkbox"/> I paid more attention | <input type="checkbox"/> I stayed in the background |
| <input type="checkbox"/> I learned more | <input type="checkbox"/> I didn't learn new things |
| <input type="checkbox"/> I was bored | <input type="checkbox"/> It was confusing because things didn't work |

5. What was different about the lesson? (You can mark more than one answer.)

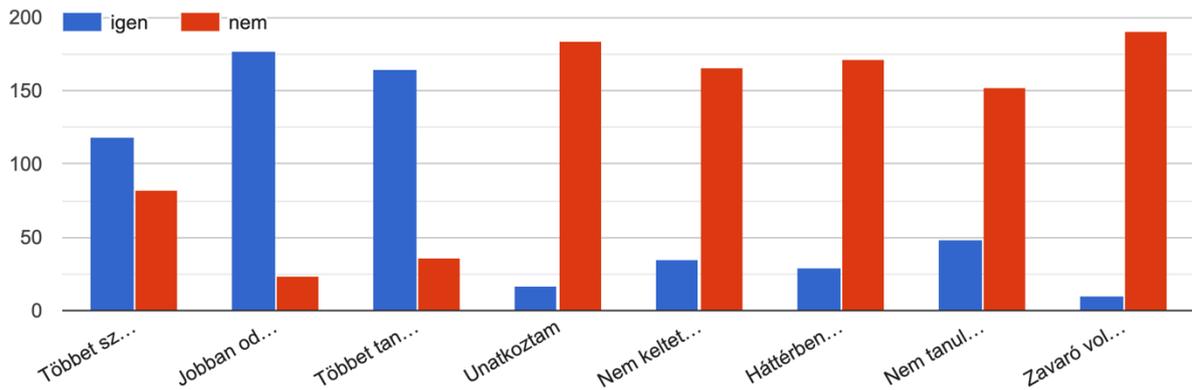
- | | |
|--|---|
| <input type="checkbox"/> The teacher explained less. | <input type="checkbox"/> Digital materials have enriched the lesson, we have paid more attention. |
| <input type="checkbox"/> You could talk about what you don't understand. | <input type="checkbox"/> It was easier to understand the course material. |
| <input type="checkbox"/> Our lessons are always just as interesting. | <input type="checkbox"/> Technical problems took a lot of time. |
| | <input type="checkbox"/> He was free to talk, which is not the case at other times. |

6. What do you think about the digital learning material used in the class? (You can mark more than one answer.)

- | | |
|--|--|
| <input type="checkbox"/> It was interesting and eventful | <input type="checkbox"/> It did not help me understand the material better |
| <input type="checkbox"/> It was new | <input type="checkbox"/> It was boring |
| <input type="checkbox"/> It helped me understand the material better | <input type="checkbox"/> It was average |

7. Would you like to have more lessons like this in the future?

- Yes No Indifferent



201 students' answer to question 4

Step 9: teachers' reflections, feedback – REVIEW, EVALUATION

The ninth step following lessons delivered using digital tools is post-lesson analysis and evaluation. Teachers rarely have time for this. In the process of lesson planning, delivery and evaluation, organised on the basis of the VETWork model and linked to institutional intervention, is an integral part of the teacher training programme and an input to the formative post-training evaluation.

At the end of the training, participating teachers have a digital teaching portfolio, which consists of the following elements:

- Assessment of input digital literacy knowledge and skills (1st SELFIE survey)
- Lesson or project plan demonstrating the pedagogical use of digital tools
- Digital microtutorials for classroom work, created by the students themselves or collected from free sources
- Analysis of students' evaluations after the lesson
- Feedback, professional, pedagogical self-evaluation
- Sharing digital education-related content in the online community as a free-to-use resource
- Assessment of digital literacy skills and competences in digital education output (2nd SELFIE survey)

The portfolio allows the participating teacher to see whether he or she has achieved the goals set in his or her individual development plan, and the school management can also see the teacher's performance in digital education.

Teachers' self-reflections will be an input to the institutional evaluation that the school leadership will develop at the end of the process, in Step 9.

Suggested questions for professional and pedagogical self-evaluation:

- Has the active learning-teaching method chosen worked?
- How active were the students?
- If there was no such lesson before, how did the students respond to the change?
- How was the monitoring of knowledge and assessment of pupils' progress?
- Did you have to deviate from the original timetable? If so, why?
- Have you achieved the learning objectives you set (transfer of new knowledge, understanding, development of skills)?
- Is the watch better than an average, "less digital" one?
- Were the conditions right for using digital tools?
- Any technical, scheduling problems?
- Was there a measurable pedagogical benefit from the digital curriculum? (Did it motivate students? Did it help their understanding?)
- Was the investment worth it, was the extra work worth it?
- Have you had a successful educational experience? Do you consider the work (lesson planning, workshops, pilot lesson) successful in terms of your own professional development?
- Will you be able to use the content (lesson plan, digital learning material) later on?
- Has cooperation with colleagues, students, contractors (trainee company) started in curriculum development?
- What is the most important lesson you would highlight from the experiment? What was the best and least successful of the lesson(s)?

In the VETWork experiment, a total of 51 teachers from four countries produced a portfolio of these elements and received the "Innovative Teacher" certificate awarded by the consortium. Almost 1500 pupils participated in the pilot lessons.

Examples of teachers' feedback on the lessons

In this subsection, we present some of the lesson plans and evaluation feedback from teachers in the schools participating in the experiment.

The importance of the senses in the sensory analysis of foods

Maja Markič

Biotehniški Izobraževalni Center Ljubljana, Živilska šola

Basic information about the lesson/project

Topic	Organoleptic testing of foods
Subject	Food quality control
Grade	14.
Competences to be developed	ICT skills Communication and cooperation Critical thinking, problem solving Flexibility and adaptability
Learning and development objectives	By the end of the lesson, students will know the importance and function of the senses in the sensory analysis of a sample.
Teaching method	Research-based learning
Evaluation method	Diagnostic assessment

Evaluation of the lesson

The chosen active learning method has proven to be successful. The students were highly active and engaged during the lesson, as it was designed to encourage their participation and included practical work such as sensory analysis. Students reacted positively to the lesson, expressed satisfaction and a desire for more similar enriching experiences. However, some students mentioned that the lesson didn't feel significantly different from their usual experiences because they were already familiar with the content.

Assessment and evaluation of students' progress were facilitated by the Plickers digital tool, providing immediate indications of the knowledge gained.

In order to address technical difficulties with sound in the classroom, deviations from the original curriculum were necessary. I provided some explanations through recordings.

We achieved the learning objectives, including the transfer of knowledge, understanding, and skill development. Compared to average "less digital" lessons, this active learning approach worked better.

Using digital learning materials had measurable pedagogical benefits, as students were notably motivated for active participation in the lessons. The investment in incorporating digital tools and the extra work were worthwhile. The lesson became more interesting, without significantly increasing difficulty. Additionally, integrating digital tools allowed for experimentation, and enriched the learning experience.

The lesson was a pedagogical success, and it contributed to the teacher's professional development in lesson planning and workshops. Experimenting with new methods is seen as a valuable personal contribution. The content can be used in the future, both within the curriculum and digital curriculum.

The most important finding from the experiment is that the lesson was interesting, but in the future, it would be advisable to incorporate fewer digital tools into a single lesson. Active learning is particularly effective for reinforcing familiar material, while new material may require a balance of traditional teaching methods, note-taking, and digital tools.

Introduction of the teacher

I teach in the NPI programme (Biotechnical and Care Assistant), in the SPI programmes (Butcher and Confectioner), and in the SSI and PTI programmes (Food and Nutrition Technician). I teach professional subjects: IPS (Manufacturing of Bakery and Pastry Products), PPO (Meal Preparation Support), TPS (Technological Processes in Pastry), TPM (Technological Processes in Butchery), PŽ (Food Processing), POG (Food Establishments and Gastronomy), KKŽ (Food Quality Control).

I have been teaching for three years, and throughout my career, I have gained valuable insights into digital teaching. I have actively participated in various trainings and integrated digital tools and teaching materials into my lessons. However, I limited myself to certain tools that proved useful and received positive feedback from students.

I strongly believe in the significance of presenting study subjects in diverse ways to enrich lessons. Students are open to using digital materials and are happy to incorporate their mobile phones into the learning process. They find that this way, the lessons go by faster, and aren't boring.

[View the lesson plan on DMC](#)

Transport of substances through the cell membrane

Rok Demič

Biotehniški Izobraževalni Center Ljubljana, Gimnazija in veterinarska šola

Basic information about the lesson/project

Topic	transport across membranes
Subject	microbiology
Grade	12.
Competences to develop	ICT skills Communication and cooperation Creativity and innovation Productivity and responsibility Flexibility and adaptability
Learning and development objectives	Students will learn about the different forms of active transport of substances across the cell membrane.
Teaching method	reverse classroom
Evaluation method	Not specified

Evaluation of the lesson

Based on the survey responses, the majority of students (80%) preferred the active learning type of lesson to traditional methods, 20% were indifferent, and no one indicated a desire to discontinue this approach. The answers to the survey overwhelmingly claim that students were more active than otherwise or that they learned more.

From the past experiences, I conclude that students have gone into the details of the material, but they have no idea how it relates to the rest of the knowledge. So, I dare say that the specific learning objectives have been met, ie., they understand and can explain how the Na⁺-K⁺ pump works, but I doubt that they have any idea what it means for a membrane or a cell.

The students should have completed the task when we had an "assignment" on the timetable but only 3 students in the class (out of 30 students) did so. The others then did the lesson in the next regular lesson in school. They were supposed to do one part of the lesson on their own, and at least some in pairs. Watching videos in class and then talking in pairs would have made too much noise in the classroom, so I allowed them to find a place around the school.

How much was really independent work and how much was group work is hard to say. When a group of students are involved in the same activity, one part of the group might be waiting for the other part to complete the task, or there might be a student could do everything on his/her own, without the collaboration of his/her classmates. This means that it is possible that some students were extremely active, while others did practically nothing at all — except for clicking/typing answers on Google Forms.

The students have generally taken the different lesson plan well, less supervision is likely a good thing for them. They are young, skilful, intelligent and enthusiastic people who are not afraid of change and new things.

The work itself was nothing really new for students — they are familiar with YouTube, 3D animations, Google Forms, the topic was in line with the material we had in class, and they are no strangers to working in pairs.

As far as the teacher's workload is concerned, I wouldn't say that the preparation is more extensive than it would otherwise be. The lesson is pretty much set up in such a way that the teacher doesn't need to be actively involved during the lesson, but it does take some time to gather resources, write up the instructions and check at the end if and how students have solved the quizzes.

In case the teacher has the same lesson in several parallel classes (A, B and C), he has even less work than in regular lessons where he has to actively work/explain, check, etc. Even though the lesson is set up in such a way that the teacher does not need to be involved much, students need some "supervision / push" to get the work done. Most of the time the students have only done the work at school.

At the end of this lesson or at the beginning of the next one, it makes sense to do a joint reinforcement exercise, where the newly acquired knowledge is linked to what is already known.

Introduction of the teacher

I am a Microbiology and Laboratory Exercises teacher, currently instructing 3rd and 4th year students. I have been teaching here for four years now. Prior to this, I taught for four years at a vocational secondary school.

I wanted to develop digital materials before, and COVID-19 gave me the impetus to make it happen. I created simple videos for complex parts of the material, handling the graphics and animation myself, and recording with a screen recorder. I heavily relied on Google Forms, which is still part of my lessons today, even for assessment purposes. Now, when I want to distance students a bit from screens during class, we use the Plickers app instead of Google Forms.

[View the lesson plan on DMC](#)

Am I seeing it right? Optical instruments in practice

Andrea Kovács

Szakkay József Műszaki és Közgazdasági Szakközépiskola

Basic information about the lesson/project

Topic	Reflection of light
Subject	Physics
Grade	10.
Competences to be developed	ICT (information, communication, technology) Initiative and self-management Communication and cooperation Creativity and innovation Critical thinking and problem solving Flexibility and adaptability Leadership and responsibility
Learning and development objectives	By the end of the lesson, students will be able to solve optical problems graphically. They will learn the basis of some optical illusions and how some optical devices work.
Teaching method	Research-based learning
Evaluation method	Self-assessment, oral assessment

Evaluation of the lesson

The class was held after minor problems were solved. The students' homework was to make a mind map to review and summarize the concepts and properties of light reflection and mirrors. Not all students completed the homework, so we started the lesson with a quick review. Since most of the students had not worked with GeoGebra before, a quick GeoGebra tutorial was needed. We watched the motivational video together and then the students had the opportunity to watch the video again. After that, the students brainstormed how it was made. Some of them were very quick to uncover the "secret". They had to be a little patient to give others a chance to express their views.

After that, the students studied the interactive booklet and completed the task independently. Everyone was working at his/her own pace, so there were one or two students who finished the compulsory task long before the end of the lesson. They also started the supplementary task. Of course, there were also some who were slower and needed help. We tried to finish the task with them at the blackboard.

While completing the task, the students competed who could guess the solution correctly. When they got to the geometric solution of the problem, they were surprised to find that their guess was wrong.

Based on the few minutes of self-evaluation and evaluation discussion at the end of the lesson, the students' feedback was positive. They found the method used in the lesson and especially the booklet interesting and highly unusual. They liked the fact that they could go at their own pace. There were also students who found this method demanding, as they had to learn the material independently by solving problems and they found the explanations insufficient. Others felt that they learnt a lot in the lesson despite the lack of explanation.

All in all, the class went well, the goal — to learn what some optical illusions are based on and how some optical devices work — was achieved.

Lessons learned: students should be taught how to use GeoGebra as soon as possible.

Introduction of the teacher

In 1999 I graduated as a teacher of Mathematics and Physics at the University of Constantine the Philosopher in Nitra. In 2016 I graduated in Computer Science as well, at the Pavol Jozef Šafárik University in Košice.

I have been teaching for 23 years, first at a primary school, and from 2001, at the Szakkay József Technical and Economical Secondary Vocational School, better known as "Ipari", in Košice. Besides mathematics and physics, I also teach robotics and other IT subjects.

I often create digital teaching materials. When I have the opportunity, I also like to use ICT in my lessons. Students are open to it, but they get bored of it quickly, so the digital materials must be varied and creative.

[View the lesson plan on DMC](#)

Application of virtual technologies in the production of machine parts

Válent Vojtech

Szakkay József Műszaki és Közgazdasági Szakközépiskola

Basic information about the lesson/project

Topic	Complex programming task
Subject	CNC
Grade	11.
Competences to develop	ICT (information, communication, technology) Initiative and self-management Communication and cooperation Critical thinking and problem solving

Learning and development objectives	Learning to prepare a complex task.
Teaching method	Group work
Evaluation method	Self-assessment, peer evaluation

Evaluation of the lesson

The class was held in the 4th class of mechatronics students. Most of the material was successfully covered.

During the presentation of the new material, the students followed the explanation, were interested and asked questions about the techniques to be used.

During the lesson, they were active and attentive. They cooperated and helped each other to overcome problems, so there was not much lag in the lesson.

The assessment of the exercise was smooth and clear, based on the table provided. The majority of the results hit the upper level.

There were some shortcomings that negatively affected the results. An example was the incorrect interpretation and application of technical drawing standards. The program also stopped working — it is advisable to save it at the beginning and during working as well. The technological sequence of steps was not always correct, and that resulted in the prolongation of the work.

The evaluation discussion at the end of the lesson showed that the students' feedback was positive. They found the lesson interesting and understandable. They enjoyed the immediate simulation of the program the most. The practical objective was achieved. The use of the program was successful. The students learned the first basic techniques for programming a CNC lathe.

Introduction of the teacher

I graduated from the Technical and Military Aviation University in Košice (Slovak: Vyššia Vojenská Letecká Škola — Vojenská letecká Akadémia v Košiciach) as a kite engineer.

I have been teaching at the Hungarian "Ipari" (Szakkay József Műszaki és Közgazdasági Szakközépiskola) for 19 years. Most of my subjects are related to mechanical engineering.

The use of digital tools in these classes is common. This has been heavily influenced by online teaching.

[View the lesson plan on DMC](#)

Örkény: Thoughts in the cellar

Enikő Rázmán

Szent László Római Katolikus Teológiai Líceum

Basic information about the lesson/project

Topic	The short stories of István Örkény
Subject	Mother tongue and literature
Grade	9.
Competences to be developed	Communication and collaboration, critical thinking and problem solving, media literacy
Learning and development objectives	By the end of the lesson, students will be able to: recognize and distinguish between the absurd and the grotesque; recognize the characteristics of the one-minute short story; understand and interpret the worldview of the short story Thoughts in the Cellar
Teaching method	Reflection, group work, gamification
Evaluation method	Digital assessment

Evaluation of the lesson

The class was for ninth graders, whom I've only known for a month and a half, and I'm still learning their names. We have three lessons a week, and in this short time I tried to encourage them to be open, to think with me, to dare to speak up, to express their opinions, to discover the hidden content of texts, to adventure bravely in the many created worlds of literature. To this end, we have read, discussed, characterised and mindmapped a lot, but not enough. I've used digital materials with them — I haven't created these, as there are so many great educational videos and interactive exercises available with a click or two on the web. But perhaps the group work lesson was the most exciting, where students had to recreate a Radnóti poem or a new poem from the scrambled words. They produced fascinating texts, and immersing themselves in the agony of writing poetry made them really curious about the original texts.

I created the lesson plan for the Örkény short story last year, when I haven't known the class yet, I didn't know where I would be with the curriculum, so it felt like a very bold undertaking to jump into it this October and teach a lesson that, if it wasn't for this project, I would not have taught now and not in this way. But I definitely wanted to try out what I had come up with five months ago, because I was curious to see if it would work, despite the fact that the ninth graders were in the middle of freshers' week, doing rehearsals at recess, more in the mood for the freshers' dance and vacation than for some absurd and grotesque visionary short story.

There was not enough time beforehand to delve deeper into the world of Örkény's short stories, so the chosen text proved more difficult to absorb, and I feel that it was only partially achieved.

I would like to state my conclusions here at the outset:

1. The students loved the lesson, they had fun, they experienced it as a game.
2. I felt both euphoria and a sense of lack, as the many playful tasks were well done, but I did not manage to drill down and get closer to the essential understanding of the text.
3. Probably too many digital tools in one classroom. Games, crosswords, puzzles are an end in themselves, they lead nowhere, at best they entertain, create a sense of competition and a sense of achievement. I had the feeling that I was hurrying this very impatient generation, always in a hurry to get somewhere, even pushing them with my task dumping towards some kind of momentary sense of pleasure... When all we should do is stop, rest, slowly chew on the text, just talk. Because in a literary analysis class, we don't learn in the classical sense anyway, we don't pass on knowledge, but develop competences, we form a world view, a view of values. At the end of this lesson I did not feel that I had managed to get closer to Örkény's vision.
4. I will use the digital teaching materials in introductory and summarising lessons, as I have done so far, rather than in text analysis.
5. The digital materials worked, the feedback is positive, the 2007 generation loves playing on their phones.

At the beginning of the lesson, I told the students that they would be taking part in an experimental lesson and then projected the word cloud I had prepared beforehand. They were delighted to discover the titles of the short stories they knew, as well as those they hadn't heard of. The first technical problem arose here, as the projector on the smartboard was no longer working properly, so the colours were not clearly visible, and the letters were not the right size and could not be seen from the middle rows. It was not possible to zoom in, so they could also watch from their smartphones.

The next phase was the animated film, which again ran into problems: the sun was shining, so the screen was not visible, and the film lost a lot of its enjoyment value.

From their reactions, I concluded that they found very strange what they had seen and did not fully understand the text. So, although it was not planned, I read the short story aloud and, using my classic method of questions and answers, we briefly discussed what we had seen and heard, but not as exhaustively as I would have liked, as there were still a lot of digital tasks to be solved.

In groups, they solved the task of putting the lines of the short story in the right order, using their phones. This is where the level of attention paid beforehand really became apparent, and the speed of solving the task varied considerably between groups. Some solved it very quickly, others were so slow that I had to help, and there were some who, instead of thinking, used the tried and tested method of computer games: dragging the lines at a very fast pace until the task was completed.

I really had to speed up the T-table, as I wanted them to work together on the next learningapps task, and I also wanted to show them the Livresq interface. The solution for this learningapps task was similar to the first one, but there was a technical problem, as the form master did not send them the link, they got it from Livresq. Here, however, I had to show almost each group separately which tab to find the task in. That was the end of the lesson, and I gave them the last

three minutes to fill in the feedback questionnaire while they were still under the influence of the experience.

The questionnaire confirmed what I felt: the class was interesting, stimulating (90.9%) and unconventional (86.4%), the digital materials "enlivened" the class (90.9%), they were more attentive (81.8%), the material was better understood (86.4%), 86.36% of the students would like to have more similar classes in the future, and despite all this, four were still bored.

Their text feedback was also very positive, with only one specifically negative comment ("Meh"), which is nothing like the four bored people. 11 said that the class was good or interesting, others elaborated on this:

"For me it was very interesting, we didn't really work this way in the classroom, so I was able to pay more attention and learn new things."

"I think the class is much more useful and interesting this way, we could have more of them!"

"I think it's much better to learn this way because it's more exciting."

"I think it was much better than a normal class, you can pay much more attention."

But it is worth reflecting on what one student wrote: "Personally, I don't like digital everywhere!" Maybe there are students who really want to talk in literature class?

The other interesting thing I noticed is that 50% of students think that we always have just as interesting lessons, which I would like to interpret as meaning that you can have good lessons without digital tools.

It's becoming clear to me that the world is going through a huge change, and with it, education as well. It is hard for us digital immigrants to keep up with the digital natives, but we have to.

And although I'm used to having a projector or a smartboard at my fingertips, to be able to show something interesting at any time, and I know that these tools are there for us, to help us, to make things clearer, more transparent, easier to follow, I think the most important thing is communication, not between machines, but directly between people.

Introduction of the teacher

I'm Enikő Rázmán, I've been a teacher of Hungarian at Saint Ladislaus Roman Catholic Theological High School in Oradea for more than twenty years. I teach in Economics, Public Alimentation and Church Tourism classes, as well as being a form master for students of Public Alimentation. I therefore have some insight into the functioning of vocational education classes.

I have never thought of the teacher as a source of information and knowledge, nor that the teacher should know everything. But I did think, and still think, that a teacher can distinguish between good and bad, appropriate and inappropriate, right and wrong information. Even in the happy, pre-online days of peace, I considered my most important task to help my students understand the world and themselves through literature.

The era of online and digital learning has also made it clear to me how important it is for the teacher to be the mediator of information, because only his/her competence and expert explanation can add value. Otherwise the teacher becomes completely superfluous. Anyone can

find any information on the Internet. What is needed is expertise, professionalism, competence and intelligence on the part of the teacher, all the extras that no platform, short film, quiz game, smart phone, etc. will provide.

At the same time, it was a period that awakened my thirst for experimentation, as I needed to come up with more and more interesting teaching materials to keep the students' attention. So I created some materials myself, but I was very happy to see digital lessons, textbooks and tutorial videos created by others, because I still think that this is a separate profession that requires the combined efforts and expertise of IT professionals and education professionals. But we can also, if necessary, enrich lessons with digital learning materials that we produce ourselves.

In conclusion, I would say that frontal teaching should somehow incorporate the experience gained in digital education, but I would not give up the teacher, whose personality remains, in my opinion, the most important factor.

[View the lesson plan on DMC](#)

Measuring the characteristics of simple circuits

Klementina Harácsek

Szent László Római Katolikus Teológiai Líceum

Basic information about the lesson/project

Topic	Simple circuits
Subject	Physics
Grade	10.
Competences to be developed	ICT (information, communication and technology), information literacy, initiative and self-management, communication and collaboration, creativity and innovation, critical thinking and problem solving
Learning and development objectives	By the end of the lesson, students will be able to build circuits according to the given requirements, use the measuring instruments, verify Ohm's law by calculations on the basis of the measured data.
Teaching method	Research-based learning
Evaluation method	Oral assessment, digital assessment

Evaluation of the lesson

The part of electricity that deals with simple electrical circuits is the favourite subject of most students. They hope to be able to assemble electrical devices after a lesson or two, but at least they see practical applications.

The research-based method offers an excellent opportunity to capitalise on this interest. The PhET site of University of Colorado, including the circuit design lab, is a great help, offering free simulations. It is possible to build circuits without any accidents, suitable circuit elements are always available, and no measuring instruments are needed for studying them. Here, students can really try their hand without getting hurt or damaging the equipment.

The simulation can be used on smartphones, online or offline. This way, it is possible to set a wide range of tasks, according to the level of knowledge of each student.

I have used it before, but only in frontal teaching and in the context of a lesson, but it has always been useful in achieving the learning objectives I set.

Compared to the previous lessons, the difference was in the review and revision part, when Kahoot questions were used to check how much of the material had been covered. Most students enjoyed this part a lot, especially the opportunity to be the first if they answered quickly and well enough.

Another of the busier parts of the lesson was the Quizizz task set, which tested the mastery of the day's skills. Obviously, this was not as successful, because not everyone had absorbed the new information.

The LearningApp homework is linked to the simulation, so it is likely that more students will do it, or at least try it. Experience has shown that if the answer is not completely obvious, students will not bother to complete further tasks. In the introductory part of the next lesson, I will use the Quizizz task set again and we will do the LearninApp homework together.

Overall, the lesson was a success, perhaps it is a little confusing if someone got a little lost in thought, they didn't always know what they were using: their own digital tool, notebook, frontal presentation? A lesson like this requires a constant heightened, active presence from both the students and the teacher.

In my opinion, there is a need for such digital lessons, but if used on a permanent basis, they will be just as monotonous as the less digital ones. A proper tone has the same attention-grabbing nature as a digital moment, only for a shorter period of time, and with no tangible consequences. Digital tasks are more memorable for students, especially when their opinions are sought on a particular session.

Introduction of the teacher

I started teaching Physics in 1992, and in 2004 I added computer science to the timetable. As a consequence, the "digital revolution" was not a problem, but the increased demand for help did not always fit into the daily work.

Even though students are born with gadgets, they are not able to use them in a way that helps their own development and well-being, but they like to have them built into their lessons.

[View the lesson plan on DMC](#)

Construction and operation of the four-stroke Otto engine

Péter Wimmer

Közép-magyarországi Agrárszakképzési Centrum Magyar Gyula Kertészeti Technikum és Szakképző Iskola

Basic information about the lesson/project

Topic	Structure and operation of the Otto engine
Subject	Technical basics
Grade	10.
Competences to be developed	ICT (information, communication, technology)
Learning and development objectives	By the end of the lesson, students will have learned about the structure of internal combustion engines and the basics of their operation.
Teaching method	Demonstration
Evaluation method	Completing online tests. Working in groups to collect and present material on a given topic.

Evaluation of the lesson

To complete the lesson, students need to have a digital device and an internet connection. A smartphone is sufficient for this purpose.

I have used online tests in my classes several times. The novelty for the students was rather the multiple types of tasks used at the same time to process the material.

When completing the online tests, there were several problems connecting to the programme, which in this case was made completely seamless with the QR code.

The students were visibly more engaged by the variety of visualisations, so that they could see the parts in the pictures in real life and in action, with the help of animations.

The level of difficulty of the tasks in the lesson was set so that all students of different abilities could experience success.

As the lesson was more animated and offered more visualisation than a traditional frontal lesson, the students were more active and it was easier to keep their attention.

They said that the animations made it easier for them to observe details that are not possible or difficult to imagine in reality.

The group work was attractive for them, everyone had something to contribute to the task.

In summary, the lesson proved to be more effective than the traditional frontal approach and brought the students closer to not only learning but also understanding the material.

Introduction of the teacher

I have been teaching technical skills at the Magyar Gyula Hungarian Horticultural Technical and Vocational School of the Central Hungarian Agricultural Vocational Training Centre for 5 years. I teach both theoretical and practical classes.

I have long been interested in new methods and their technical implementation. I think it is important to capture the attention of students with interesting and varied methods that allow them to learn a more difficult subject, sometimes a subject that is far from their own.

[View the lesson plan on DMC](#)

Japanese gardens

Sára Ekert

Közép-magyarországi Agrárszakképzési Centrum Magyar Gyula Kertészeti Technikum és Szakképző Iskola

Basic information about the lesson/project

Topic	Garden history, Japanese gardens
Subject	garden design
Grade	13.
Competences to be developed	ICT (information, communication, technology) Information literacy Communication and cooperation Creativity and innovation Social and intercultural skills
Learning and development objectives	By the end of the class, students will be able to identify the elements of a Japanese garden, the plant material that can be used, the role and meaning of garden aesthetics and garden

	techniques, and learn about Japanese gardens in their home country.
Teaching method	Flipped classroom, group work, game-based teaching
Evaluation method	Innovative evaluation

Evaluation of the lesson

The chosen method worked and the students really enjoyed it — even the 2 who had not watched the video beforehand. They had the opportunity to watch it during the break before the lesson, so they were able to actively participate in the lesson. No one was bored, they were very active, cooperative, not a single complaint or negative comment. I explained to them in a few sentences beforehand what it was all about. I told them about the flipped classroom method only after the lesson and the assessment. Kahoot! assessment was not unknown to many of them, everyone enjoyed playing. There was a bar of chocolate to be won. Where there were wrong answers, we corrected and discussed them during the test. I hardly had to correct, the students corrected each other.

I didn't deviate from the original timetable, I was able to keep to the planned timetable, and I achieved the learning objectives I had set.

In my opinion, the class was better than an average class, it was more fun, we laughed more. We were also louder than average, but at least no one was bored. Everyone was moved on their own level.

The digital conditions were there, and I have long been solving the conditions myself in case of shortages. I always have an extra cable or converter with me, I've never had a technical problem. I have been using my own mobile network for years, the school wifi is overloaded.

As I have been using digital tools for years, I don't feel the extra work. I enjoy doing new things, teaching more interesting lessons and the feedback from students always encourages me to create more learning material.

I also enjoyed the workshops. Almost everything was familiar, but I was able to help my colleagues understand it, so everyone improved. I think there is no shame in learning, you should take every opportunity to improve. If we can't improve, we don't expect students to want to do better. I've been able to use my teaching materials for years, but I'm constantly creating new ones.

During the project, we tried to involve colleagues who were not familiar with digital learning materials. Over the months we helped each other, cooperation started and increased, joint curriculum development e.g. in German lessons.

The most important lesson is that it's never too late to learn, it's always worth evolving, changing and moving away from the usual, tried and tested teaching methods. The success of the project is DMC, which is an excellent opportunity and collection platform to offer teachers as many methods and options as possible, where even colleagues who are just getting acquainted with the digital teaching-learning world can easily find their way around.

I wouldn't say that there were some unsuccessful parts, we tried to make the lessons enjoyable for everyone, both colleagues and students. Maybe what I would highlight is that we have a lot

of lessons, we have to substitute a lot, so it was difficult to motivate the teachers to start on a different path together, but once we started, everyone got into it.

Our long-term plan is to always introduce new apps to the whole teaching staff on non-teaching days, to give everyone the opportunity to develop. We receive maximum support from the management. My personal plan, which I am continuing as in previous years, is to teach the students how to use these applications.

Feedback from students is excellent. Some examples:

"Did the teacher really make this video?"

"The teacher is a real influencer, she already has 20,000 views!"

"The thing I liked most was that the animations matched the story of the video."

"It would be nice to have more of these lessons, I think I learned more today than I did all last week."

"Will the teacher teach you how to make a video like this?"

"Can we find an easier way to learn about plants?" (This is the bogey subject in our profession.)

Introduction of the teacher

This is my tenth year in education, currently teaching garden design, horticulture, garden history, plant science and maintenance to park construction and maintenance technicians. In previous years, I also taught florists and floral decorators in a variety of subjects.

I was introduced to digital education in 2015 through another project, Flip-IT!, and fell in love with it almost immediately. That's when I started creating learning materials and my enthusiasm has been undiminished ever since. Today's students are visual, they read almost nothing. We need to present them with content for teaching that engages them, that they are willing to put effort into. The easiest way to do this is with videos of 5 minutes or less. Anything longer than that will get poorer viewing. I think it's important to find the gateway to the students, and for that we teachers need to improve.

[View the lesson plan on DMC](#)

Sharing and evaluating designing tasks using Creative Cloud

György Varga Gábor

SZÁMALK-Szalézi Technikum és Szakgimnázium

Basic information about the lesson/project

Topic	Design task for photographers
Subject	Design practice
Grade	13., 14.
Competences to develop	ICT (information, communication, technology) Information literacy Initiative and self-management Communication and collaboration Creativity and innovation Critical thinking and problem solving Productivity and accountability
Learning and development objectives	Use of the basic elements of visual communication (space, form, colour, letter, text, image) and the means of expression (composition, proportion, contrast).
Teaching method	Problem-based and experiential methods
Evaluation method	Practical work evaluation and self-assessment

Evaluation of the lesson

The framework curriculum for creative photographers treats designing-related competences as three separate subjects (visual designing basics, theory of designing basics and practice of designing basics). The topics of the three subjects overlap, so in the lessons I show the topics in context through practical tasks. Creative Cloud and Adobe programs provide an excellent opportunity to combine theoretical knowledge with practice in education. The timeframe of 3×45 + 1×45 minutes is just enough to introduce the use of programs and storage space, the theoretical basics of designing, and the basics of typography and colour theory through a creative task. The assignments must be uploaded by the end of the class and I share the completed work with the group (Adobe Lightroom). In the shared album students have the opportunity to evaluate themselves. You cannot get a job in the creative professions without the knowledge of Adobe programs, so the information given is considered essential. Those who take their studies and future seriously will actively participate in lessons.

This academic year I started to use compulsory classwork consciously to increase students' attention. Classwork keeps the students busy and seeing their work in the Lightroom album at the end of the class is a sense of achievement for everyone. In the album students can rate each other's work (by clicking on the heart emoji). The work that receives the most hearts will be rewarded with praise and a good mark for the achievement. I provide the information students need to complete the assignments through classroom presentations and tutorial videos, as well as Creative Cloud tutorials. The background materials for the work are shared via a folder

synchronised to the Creative Cloud user accounts (Creative Cloud Web), which downloads the files directly to the students' computers in the Creative Cloud Files folder. This folder is only accessible as long as you are logged in to your account, and is automatically deleted from the computer when you log out. The biggest benefit of the system is that students learn to use cloud hosting.

Introduction of the teacher

I graduated from MOME as a visual communication designer. I identify myself as a visual artist, a photographic and graphic artist. After graduating, I worked for different graphic design studios and in my own business. Within the profession, I was able to try my hand in many areas. I have already been a DTP operator, a graphic designer and a photographer. I have been using computers, digital cameras and graphics software in my work for twenty-eight years. I was able to support my family financially from my own business alone until 2013. I will have been teaching for 10 years by next year. Within the first month of teaching, it became already clear that my decades of professional and computer experience would be of great use in teaching. As a photographer, I teach studio shooting and post-production, photographic techniques, professional drawing for photographers, designing fundamentals: theory and practice, visual designing fundamentals, visual designing software and digital image and text processing. Since 2019, our school has been providing Creative Cloud subscriptions for our art colleagues and students. Subscriptions for students are given for two years, while they are students in our school. From a professional point of view, this is a great opportunity for continuous development for students and teachers alike. Adobe is a multinational company that provides its subscribed users with state-of-the-art software for the creative professions and also the background and learning materials, tutorials and online presentations needed to learn the use of the software. It is easy to see what qualities, skills and programmes are needed to succeed in the creative professions. The Creative Cloud subscription includes Behance, a community site of creative art. On Behance, everyone has the opportunity to create their own profile (personal brand), get inspired, and learn about the latest creative trends and look for work.

I think it is not necessary to further emphasize the importance of the above. To get a job in this field, you need to be familiar with Adobe Photoshop, InDesign, Illustrator, Lightroom and be able to create an online portfolio (Adobe Portfolio). My experience shows that in a group of 25-28 students, there are 8-10 students watching and working in the classroom. You can count on their activity throughout the school year. This also corresponds to the ratio of more talented to less talented students.

[View the lesson plan on DMC](#)

The history and characteristics of Hungarian gastronomy

Ágnes Szántó

SZÁMALK-Szalézi Technikum és Szakgimnázium

Basic information about the lesson/project

Topic	Hungarian gastronomy
Subject	Tour guiding
Grade	13.
Competences to be developed	ICT (information, communication, technology) Initiative and self-management Communication and cooperation Leadership and responsibility
Learning and development objectives	Students should be able to describe the history of the development of Hungarian gastronomy and the characteristics of Hungarian cuisine.
Teaching method	Flipped classroom
Evaluation method	Peer evaluation

Evaluation of the lesson

The flipped classroom method has worked very well for me and I think my students have got to like, too. The students worked in groups on the assigned material, so everyone got an assignment despite the size of the class: 39 students. The groups were formed by the students themselves and each group had a leader who coordinated the work of the team.

Kahoot was used by each team to check and see how well their peers had done in the class and had mastered the material.

Students faced a peer review of the reception and evaluation of their own presentation.

This method motivated the students and helped them to acquire and deepen their knowledge of Hungarian gastronomy. They had the courage to stand up in front of the class to give their presentations and the Kahoot questions were also interesting and entertaining. The evidence of the Kahoot results also confirmed the effectiveness of the lesson. According to the students, they deepened their knowledge in a class with a good atmosphere.

The class has proved to be successful and effective and I am willing to use this method again because it was worth the time spent. Moreover, I will be able to use the materials I have prepared in advance also next year. The applied methods develop not only the knowledge of the students, but also their presentation and collaboration skills, and the use of digital tools makes the work to be done more engaging.

clear to them, so that they answered the questions more deliberately and consciously in the second measurement.

Questions for the institutional assessment

There are three questions to be answered in the institutional assessment and a brief summary of the lessons learned at the end. The following questions provide a guide for the preliminary institutional assessment:

Teaching methods, pedagogical planning, use of digital tools

Has there been an improvement in teachers' individual professional development since the project started in terms of pedagogical planning (lesson and project planning), active learning, teaching, assessment methods and the use of digital tools in the classroom?

- Lesson planning and project design
- Teaching/learning methods
- Using digital tools

Cooperation, knowledge sharing

Has there been a measurable change in the quality and intensity of cooperation and knowledge sharing between teachers? Have the workshops promoted peer learning, do teachers use each other's lesson plans, projects, digital learning materials published on DMC?

- Collaboration and knowledge sharing by teachers
- Peer learning among teachers
- Reuse content uploaded to DMC

Digital culture at school

Can improvements in methodology and digital culture at school level be identified based on feedback from teachers and students? Does the school plan to renew its previous digital strategy?

- Institutional level improvements
- Review of the existing institutional digital strategy

A brief summary of the results at individual, school level, including the results of the repeated SELFIE survey, compared to the survey carried out at the beginning of the project.

Excerpts from the experiment evaluations

Teaching methods, pedagogical planning, use of digital tools

The professional development of teachers and the enrichment of their digital toolbox is evident and demonstrable. Thanks to their participation in in-service training, their lesson planning has already produced high quality professional results. They have also learned a lot from each other in the workshops, learning about new digital tools and their applications. In the third phase, they applied what they had learned and shared their self-reflection when designing the curriculum and the assessment of student performance. Throughout the project, they have learned about digital tools and innovative methods that improve and enrich the quality of education and help to continuously innovate and improve the effectiveness of the institution's teaching. They were open to workshops and indicated that they would be happy to participate in further internal training.



The period of the epidemic has been difficult for everyone, with students and teachers alike having to adapt to the use of digital tools in their daily teaching. We believe that the training of teachers has been useful. They have also learned many new methods for knowledge acquisition and self-development, and have learned about and used a number of digital tools — which they are still using in their teaching and learning work and would like to continue to use. Lesson planning went smoothly and produced high quality professional results for all.

Cooperation, knowledge sharing

A number of good practices — methods, techniques and tools — have been incorporated into everyday practice. The use of online tests is commonplace, as they greatly facilitate evaluation. In addition, the use of these test tools for other purposes has become more common, in particular for practice, revision, summarisation, self-assessment, peer assessment, teacher assessment, direct feedback. The use of mind-maps has become a regular feature — all our students are familiar with the concept and have discovered several of the tools themselves. Project-based teaching is not uncommon.

The change in methods has also brought with it the need to renew the physical learning environment. Some progress has been made in this area too. The school's wifi network has been upgraded, so that students' own devices (smartphones, tablets, notebooks) can be used for teaching. In addition, 6 classrooms have been renovated, partly with our own resources and partly by using other grants, where the variability and layout of desks is a striking feature of the school, with a strong emphasis on group work.

The school management plans to involve all its teachers in regular workshops, not only for teachers but also for educators.



Half of the colleagues attended the workshops — some more than once. The teachers who gave the workshops were well prepared and gave clear, high-quality presentations. They were well-run, reflective sessions where anyone could ask questions, try out tools and applications, and not feel "clumsy": they were part of a supportive community. Small working groups from the different professions and specialisations taught at our school became more active in sharing knowledge, exchanging experiences, talking about good solutions. Of course, there are still cases where there is no exchange of learning materials, but as most of the video material is available online, communication about each other's work has become more open. When I walk into a teacher's room, I often hear things like, "I'm just about to get to this part of the material — do you mind if I show them your video?" Many times we have seen one colleague explaining to another how to use an app during a break between lessons.

DMC gives you a good opportunity to reuse your own or others' lesson plans, one by one or with modifications. This can save a lot of work when planning your lessons for the next day or week. Colleagues are taking advantage of this opportunity and we are working to make the DMC platform as widely known as possible.

Digital culture at school

The most commonly chosen methods are project-based teaching-learning, group work and flipped classrooms. In terms of assessment methods, the choice of innovative techniques was predominant, with self-assessment and group assessment appearing in many places.

The trainers have chosen digital tools from a wide repertoire. The most popular were the collaboration space, the mind map and the presentation tools, as well as the online test as an assessment tool, as it allows students to practise and helps the teacher's assessment work.

We want to promote a creative pedagogical approach that enables all stakeholders (providers, pupils, teachers, head teachers, parents, professional or other partners outside the school) to experience the positive impact of a creative atmosphere and creative processes on their learning and working ability.



The digital culture of the institution was "in its infancy" before the outbreak. Since then, we have made great progress in many areas, and the VETWork project has contributed a lot to this development. Many teachers have been involved in the project, both directly and indirectly (through workshops), and have made professional, digital progress in many areas. At the same time, the institution (also taking into account the recommendation of Expansion) has used other sources of funding to equip all classrooms with smartboards, multifunctional devices, so that teachers can apply the methods and digital tools they have learned and selected in their lessons, thus stimulating the interactive nature of the lessons, and attracting and retaining the attention of students.

The most commonly used methods were group work, project-based teaching-learning, the cooperative method and the flipped classroom; in addition to these, a number of new methods have been/are being used effectively by the institution's teachers. Among the assessment methods, the use of innovative techniques in self-assessment and group assessments has become a feature of the institution.

Based on the evaluations and feedback, the trainers used many digital tools such as Geogebra, presentation tools (PowerPoint, Prezi, Canva, etc.), quiz apps (Redmenta, Quizlet, Google Forms, Kahoot!), tools for student interaction (Mentimeter, Padlet). Among these, online test-taking as an assessment tool and several image and film editing apps, digital applications have become popular.

Summary

The vision and the goal (modern, learner-centred education) have been achieved, and the use of digital tools and the digital professional skills of teachers not only develop key competences, but also create an active and successful workforce of students.

It is this creative, evolving, modern pedagogical approach that the institution wants to apply to the education of all ages, so that all stakeholders (pupils, teachers, head teachers, parents, professional or other partners outside the school) can experience creativity and development through the incorporation of innovative methods. Progress in this area improves the quality of education in our country, the results of the institution, the success of the students and inspires the participants in education at all levels.

The institution aims to continue to develop the skills of its teachers, continue to use digital project work in education, seek additional funding for upgrades and acquisitions (fund-raising), and develop students' digital skills to meet the needs of the labour market.



Some teachers had wanted to create digital materials before the project, and the COVID period gave them the impetus to start. Therefore, participation in the VETWork project was timely and useful, and some digital tools and methods are still used by teachers as part of their lessons, including for assessment. The project encouraged teachers to add something extra to their lessons and to do so more often. When students use digital tools in one subject, it is usually easier for them to use digital tools in other subjects. Our school generally encourages teachers to be creative in their teaching — this project has helped us in that endeavour. We had some non-teaching staff involved in the project. Our librarians were also introduced to new teaching methods and digital applications. The long-term impact of the project is certainly to update their existing knowledge. The platform is useful and stimulating because it combines different teaching approaches and encourages us to innovate.

Recognitions and certificates

The 10-step process is about collaboration, sharing knowledge, getting to know each other's work, and discovering previously unknown skills and abilities within the teaching staff. In developing the concept, we have made it clear that the quality of digital education cannot be improved without the support of school leadership and formal recognition of teachers' hard work and individual performance.

The detailed description of each step also made it clear that work is not evenly distributed within the teaching staff, as participants do not necessarily start from the same level, and that teachers at the forefront of digital education (pioneers) have more work to do than others. But one thing is certain: recognition is due to all, if not equally.

We have had useful and interesting experiences in working on the wording of the diplomas, and the differences between the participating countries. For example, the Slovenian colleagues could not accept the first version because it did not list the skills and competences that the holder of the diploma should have.

In the end, the experiment produced three sets of diplomas, recognising the achievements and activities of 89 teachers in the four countries. The feedback was very positive when they received them at one of the end-of-year meetings.

The three types of diploma are designed to recognise three different types of activity:

Innovative Teacher

The certificate holder has contributed to the renewal of digital education in her school by:

- participated in the analysis of the current state of digital education in schools,
- assessed their level of digital literacy entry using the EU SELFIE framework,
- joined the community learning on dmc.prompt.hu and participated in exchanges on digital tools, innovative teaching and assessment methods,
- actively participated in workshops organised at school to promote the use of digital tools and innovative teaching methods,
- prepared a lesson plan to test the chosen teaching/assessment method and digital tool,
- shared its lesson plan and digital teaching materials developed for the pilot lesson on DMC,

- ran a pilot lesson and then modified the lesson plan based on his experience and feedback from the students,
- checked whether the above steps had resulted in a higher level of digital competence by repeatedly completing the SELFIE.

Digital Mentor

The holder of the diploma contributes to the renewal of digital education in schools by supporting, advising and contributing to the preparation of digital lessons with an innovative pedagogical approach.

- It shares its knowledge with fellow teachers, produces teaching materials on digital tools, innovative teaching and assessment methods and techniques, and publishes them on the "Digital Menu" platform created by the VETWork consortium.
- Inspire teachers to innovate their teaching practice by using digital tools and innovative learning/teaching methods.
- Organises in-service and online workshops for faculty members to improve the quality and effectiveness of digital education.

Competences of a Digital Mentor:

Cognitive and metacognitive skills

- critical thinking
- creativity
- innovation orientation
- continuous self-improvement

Social skills

- empathy
- self-efficacy
- self-reflection or self-reflective behaviour
- Cooperation.

Digital Change Manager

The holder of the diploma will contribute to the development of the school's digital culture through progressive attitudes and leadership, innovative interventions, as follows:

- coordinate a situation analysis to identify the current level of digital education in schools;
- take the lead in developing the school's digital strategy;
- support learning at organisational level to improve the quality of digital education and develop digital culture.

Competences of a digital change manager:

Leadership skills

- Strategic thinking.
- Stimulating digital change, supporting innovation.

Collaboration skills

- Motivating and encouraging teachers to use technology.
- Working with teachers, administrators and other stakeholders to identify needs and develop solutions.
- The ability to build strong relationships and work effectively in a team.

Communication skills

- Excellent communication skills to articulate the benefits of technology and engage stakeholders.

Summary

The piloting of this model has confirmed our idea that it can have a stronger and more lasting impact on the quality of digital education than traditional teacher training programmes. Evaluations at the end of each step showed measurable improvements in teachers' individual professional development and at the institutional level.

We are confident that the method presented is viable and can help teachers and vocational training institutions to better adapt to 21st century expectations. In many respects, the procedure is in line with the quality assurance system for VET institutions recommended by the European Union. The European Quality Assurance Reference Framework for Vocational Education and Training (EQAVET) has already been introduced in several European Member States, including Hungary.

The model is in line with the view of educational researchers that the digital age and the globalizing economy put teachers under pressure that is impossible to respond well to at the individual level (Radó, 2022). The adaptability of education and vocational training can only be improved through institutional strategies and can also be a real opportunity.

In the book, we have tried to provide suggestions, examples and concrete tools to help schools to apply and test the method. Of course, at the end of the experiment, we identified a few new possibilities that would be worth incorporating. We could have promoted peer learning, for example, by including a reciprocal classroom visit in the eighth step.

There was no mention of how long the experiment took overall. This is difficult to say precisely because the experiment was not continuous but intermittent over the three years of the project. It is a good estimate that the whole process will take at least one semester, and that the renewal of the school's digital strategy, planned for the tenth step, may be postponed to the next academic year.

We warmly recommend the book to any vocational training institution that would like to try the model. We welcome any questions about the method and welcome any suggestions for further development.

Finally, we would like to thank the staff of the Tempus Public Foundation, the leaders, teachers and staff of the schools participating in the experiments for their support.

VETWork consortium

Guide to SELFIE

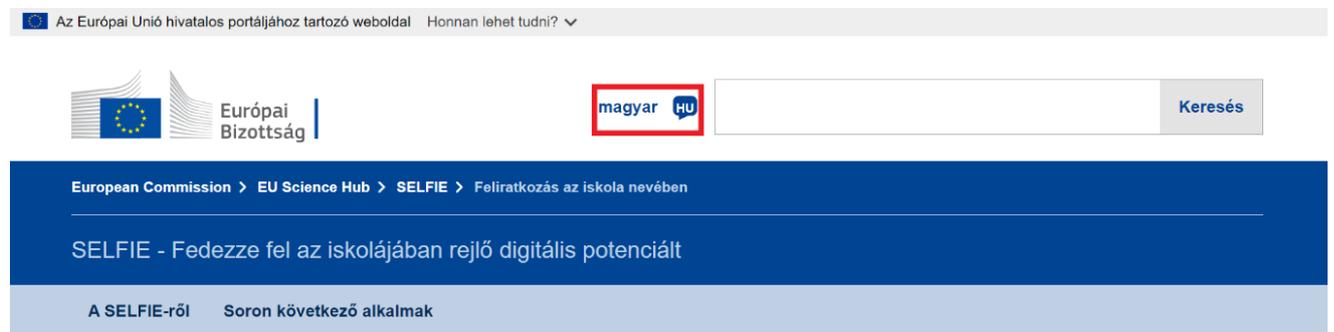
Registration

Only schools can register, SELFIE cannot be used by students or teachers individually.

You can register the institution here:

<https://schools-go-digital.jrc.ec.europa.eu/school/registry>.

You can set the language of the registration by clicking on the language selector to the left of the search box:



Access

After registration you can log in here:

<https://schools-go-digital.jrc.ec.europa.eu/coordinator/login>.

After logging in, you will be taken to the School Profile page where you will be asked to enter information about the school.

Generate questionnaires

Three target groups can be measured:

- school management,
- teachers,
- students.

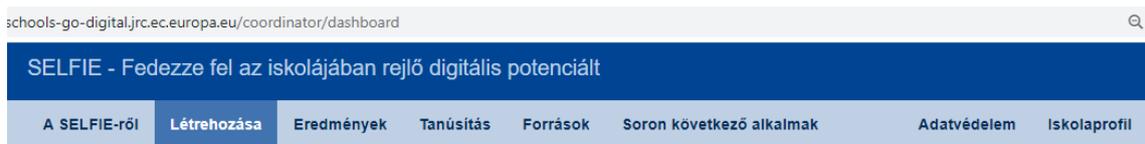
Once the questions have been customised, the system generates links to the questionnaires for the groups. The coordinators invite students, teachers and school leaders to complete the SELFIE.

When creating a questionnaire, you must specify the period of measurement under Create.



(EU Science Hub - Joint Research Centre, 2019)

It is worth thinking about this carefully, so that colleagues have enough time not only to fill in the form, but also to mobilise students. Completions can be tracked until the deadline.



Saját önértékelések

> SELFIE 2020-2021, session 2
📅 Sze, 6 jan. 2021 – P, 2 apr. 2021

Lépések

- 1 Oktatási szint kiválasztása
- 2 Kérdőívek testreszabása
- 3 Válassza ki a dátumokat
- 4 Aktiválás / Hivatkozások megtekintése

Selection of participants

The guidelines make recommendations on the number of staff in each group, depending on the number of staff in the institution.

It is also important to have a similar representation of students from all grades.

We can also ask a mixed group of teachers to fill in the questionnaire, as if only colleagues with experience in ICT use express their views, we will not get a realistic picture of the school as a whole.

Iskolavezetők

Részvételre jogosult iskolavezetők száma oktatási szintenként	Minimális részvételi arány %-ban kifejezve
Legfeljebb 5 iskolavezető	80%
Legfeljebb 6–10 iskolavezető	70%
Legfeljebb 11–30 iskolavezető	60%
Több mint 30 iskolavezető	50%

Tanárok

Részvételre jogosult tanárok száma oktatási szintenként	Minimális részvételi arány %-ban kifejezve
Legfeljebb 10 tanár	80%
11–30 tanár	60%
31–45 tanár	50%
46–125 tanár	33%
126–200 tanár	25%
201–500 tanár	20%
több mint 500 tanár	10%

Diákok

Részvételre jogosult diákok száma oktatási szintenként	Minimális részvételi arány %-ban kifejezve
Legfeljebb 50 diák	60%
51–150 diák	50%
151–250 diák	40%
251–500 diák	30%
501–750 diák	25%
751–1000 diák	20%
Több mint 1000 diák	10%

Processes

1. Selecting the level of education to be surveyed;
2. customising the questionnaires;
3. create links to the questionnaires;
4. view and download the results;
5. download the certificate of participation of the school coordinator(s) and the digital badge obtained by the school.

The questionnaire can be completed on a computer, tablet or smartphone. Internet access is required — if you lose your connection, you can reload it.



(EU Science Hub - Joint Research Centre, 2019)

Questions, self-assessment

The response is anonymous and no personal data is collected.

The SELFIE report is the property of each school and cannot be accessed by third parties unless the school has agreed otherwise.

The SELFIE questionnaire can be customised: questions and statements can be selected and added to the questionnaire according to the specific needs of your school, and different questions can be set for students, teachers and school leaders.

Mostly short statements, questions should be answered on an agreement scale of 1 to 5 — 1 being the lowest and 5 the highest.

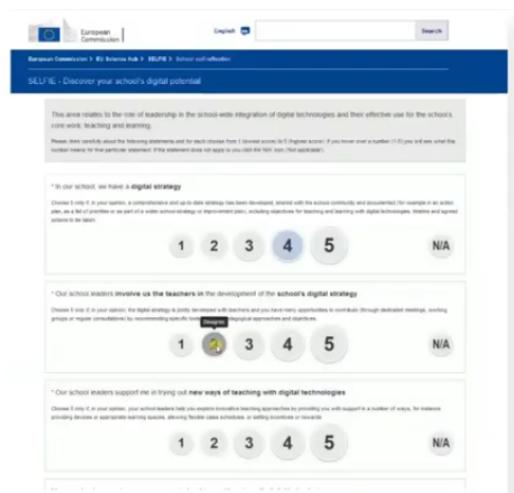
SELFIE uses a number of different scales depending on the wording of the question. It also includes one or two questions that users have to answer in their own words.

The main set of questions can be supplemented with optional questions (also known as pre-defined questions) to tailor the questionnaire to the school's needs. You can also create your own 8 questions (specific to your school).

Please allow 20-40 minutes to complete the questionnaire.

Questions will be asked in six areas:

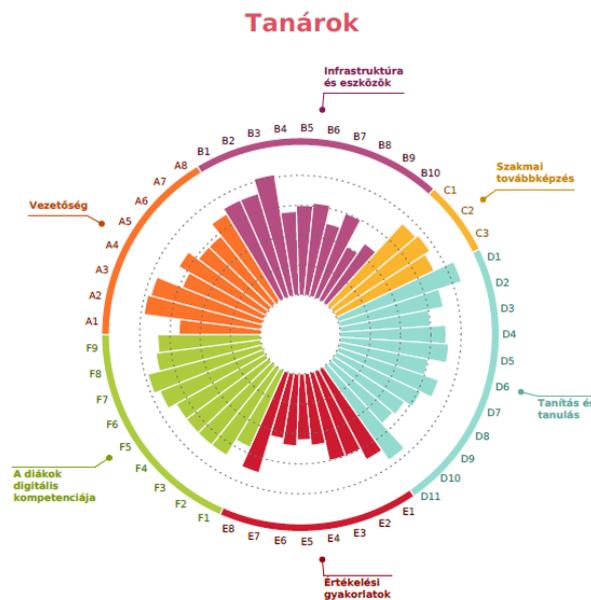
1. school management,
2. infrastructure and tools,
3. professional training,



4. teaching and learning,
5. evaluation exercises,
6. students' digital literacy.

Based on the responses, the tool generates a report — a "selfie" — that highlights the strengths and weaknesses of the school's use of technology.

The clear graphical representation makes the data easy to analyse and the target groups are clearly visible for each result. Each chart can be saved as an image or PDF. Placed side by side, they also show what the survey groups agree on and which areas are worth discussing.



(Compost, 2020)



(EU Science Hub - Joint Research Centre, 2019)

The results from SELFIE can be used to start a dialogue on how technology can support teaching, learning and assessment of students in our schools. The SELFIE results will help school leaders and teachers committed to digital pedagogy to develop a digital improvement plan and set priorities.

The report is the property of the school and only the school has access to it.

The assessment can be repeated periodically to monitor progress and identify further steps needed.

The full guide in [English can be downloaded](#) from Europa.eu.

Using DMC

The platform is available at <https://dmc.prompt.hu/en/>.

Registration

Some features are only available after you have logged in. Only registered users can log in.

To register, click on the **Log in** link in the top left corner of the screen.



Log in



DMC

On the page that opens, go to the **Create a new account** tab, fill in the form and click the **Create new account** button.

Create new account

[Home](#)

Log in **Create new account** Reset your password

Email address *

The email address is not made public. It will only be used if you need to be contacted about your account or for opted-in notifications.

Username *

Several special characters are allowed, including space, period (.), hyphen (-), apostrophe ('), underscore (_), and the @ sign.

Last name *

First name *

School

Sector

CREATE NEW ACCOUNT

The site redirects you back to the home page, where you will see a confirmation message saying "A welcome message with further instructions has been sent to your email address."

✓ A welcome message with further instructions has been sent to your email address.

Open the email, click on the link inside and on the **Log in** button on the page that opens:

Set password

[Home](#)

This is a one-time login for *minta*.

Click on this button to log in to the site and change your password.

This login can be used only once.

LOG IN

On the next page, in the **Password** and **Confirm password** fields, you will need to enter the password you have chosen to log in with later:

✓ **Status message**

You have just used your one-time login link. It is no longer necessary to use this link to log in. Please set your password.

Email address *

The email address is not made public. It will only be used if you need to be contacted about your account or for opted-in notifications.

Password

Finally, click on the **Save** button at the bottom of the page.



If you no longer want to edit your profile, navigate back to the home page, for example, by clicking on the **Home** link in the breadcrumb menu:



You can then browse the site while logged in.

Logging in

When you visit the site again and need to log in again, click on the **Log in** link in the top left-hand corner of the page.

[Log in](#)

DMC

Enter your username and password, then click the **Log in** button.

Log in

[Home](#)

Log in

Create new account

Reset your password

Username *

Enter your DMC username.

Password *

Enter the password that accompanies your username.

LOG IN

Forgotten password

If you forgot your password, on the Login page, click on the **Reset your password** tab, enter your username or the email address you used to register, and click on the **Submit** button.

Reset your password

[Home](#)

[Log in](#)

[Create new account](#)

[Reset your password](#)

Username or email address *

Password reset instructions will be sent to your registered email address.

[SUBMIT](#)

The site redirects you back to the home page, where you'll see a confirmation message saying "If {username} is a valid account, an email will be sent with instructions to reset your password."

✓ If *mintatanar* is a valid account, an email will be sent with instructions to reset your password.

You can enter your new password by clicking on the link provided in the email and then clicking on the **Login** button on the page that opens, in the same way as you would for registration.

User profile

Once logged in, click on the **My account** link at the top left of the screen to view your profile.



The profile shows your username, first and last name, any lesson plans you have created and their public or draft status, as well as links to lesson plans, tools, methods and content sources marked as favourites.

minta-tanar

[Home](#)

View

Edit

Last name

Minta

First name

Tanár

My lesson plans

[Copy of Desert Island](#)

Draft

[Copy of The development and validity of ethical rules - Code of Ethics](#)

Published

Favourites

[#CodeWeek](#)

[Anchor](#)

[Bandicam](#)

Delete profile

If you want to delete your profile, go to User Profile and click on the Edit tab.

minta-tanar

[Home](#)

View

Edit

Scroll down to the bottom of the page and click on the **Cancel account** link next to the Save button.



 **Cancel account**

Finally, click **Confirm** on the next page.

Search the site

If you want to find out whether a specific topic is being discussed on the site, type your search term in the search box and press Enter or click on the magnifying glass.

Search

Downloadable lesson plans and project plans

In the main menu, you can access the page by clicking on **Download... > lesson plans**.

The drop-down lists on the left side of the page allow you to filter and narrow down the list of hours and projects on the right side according to the following criteria:

- sector,
- teaching method,
- subject,
- grade,
- competences/skills.

To do this, open the corresponding drop-down list, select the value you are interested in and click on the **Apply** button.

Sector

Teaching method

Subject

Grade

Competencies / skills

If you want to change the filtering conditions, you can set the values in the drop-down lists to the default by clicking on the **Reset** button.

Above the list of lesson and project plans, you can create a completely new lesson plan by clicking on the **Create** button (see Lesson Planning).

Lesson and projec

[Home](#)



In the lesson plan list, for each list item you can see how many times it has been copied (see Cloning Lesson Plans). If you are logged in, filled in heart icons will indicate if you have marked a lesson plan as a favourite (a list of links to favourite lesson plans is available in your User profile).



The development and validity of ethical rules - Code of Ethics

Be able to distinguish between: 1) industry ethical standards and local,...

Clone count: 1



Desert Island

Students revise and practise the grammar material they have previously learned

Clone count: 1



To view each lesson and project plan, click on the underlined title of the plan.

On the left side of the page that opens, you will find the usual search box, and below it, a summary table of the most important data of the lesson or project plan, provided by the author and relevant to the lesson/project.

Profession	
Subject	-
Grade	14th grade
Likes	1
Number of copy	1

On the right hand side you will find the lesson or project plan itself.

When logged in, you will see the breadcrumb cookie under the title, **View** and **Clone** tabs below it, and the author's name and submission date underneath. Click on the PDF button to download the lesson or project plan to your computer as a PDF file.

The development and validity of – lesson / project plan

[Home](#) » [Lesson and project plans](#)

View Clone

Submitted by Jónás Diána on Wed, 06/15/2022 - 11:57



Cloning Lesson Plans

At the top of the lesson plan page, click on the **Clone** button under the breadcrumb menu to open an editable copy of the lesson plan.

[Home](#) » [Lesson and project plans](#)

View

Clone

Submitted by Jónás Diána

On the form, anything can be changed or rewritten.

If you want to save the modified plan not only to your own account, but also to be included in the downloadable lesson/project plans, check the **Submit for examination** checkbox at the bottom of the page.

Submit for examination

Save

If you do so, administrators will be notified that a new lesson/project plan has been submitted, which will be made public after approval.

When you're done editing the lesson/project plan, click the **Save** button at the bottom of the page.

Save

You can edit, delete or clone your own lesson plans and create new versions of them by clicking on the tabs below the breadcrumb menu.

Ethics – lesson / project

[Home](#) » [Lesson and project plans](#)

View

Edit

Delete

Clone

Submitted by Minta Tanár on Wed, 06/07



Commenting on lesson/project plans

When logged in, scroll down to the bottom of a lesson plan page to add comments to it. Others can reply to your comments.

Hozzászólások

Hartyányi Mária, 2022. 03. 22., k – 21:33

Szép munka, de sajnos a...

Szép munka, de sajnos a Google dokumentumokat nem lehet megnézni, nem fogod megosztani?

Válasz

Kele Tünde, 2022. 04. 27., sze – 14:53

Válasz

Megosztottam, remélem, mostmár megnyitható.

Válasz

Új hozzászólás

Tárgy

Hozzászólás *

B I |   |   |   | Formátum - |  Forráskód

[A szövegformátumokról](#) 

MENTÉS

Creating Lesson Plans

You can create a lesson/project plans in two ways: by copying and editing an existing one (see Cloning Lesson Plans) or by creating a completely new one.

To create a completely new lesson plan (as opposed to cloning an existing one), click on **Create... > lesson plans** in the main menu or click on **Create** above the list of downloadable lesson plans.

Lesson and projec

[Home](#)



Fill in the fields of the form.

Content fields of the "Create Lesson / project plan" form

Name of lesson / project plan (required)

One-line free-text field (maximum length: 255 characters).

In order for your lesson plan to be found easily, make sure the name clearly describes the topic and content of the lesson plan.

Type of lesson / project plan (required)

A drop-down list from which one value should be selected. You can choose whether the plan is for a project or a lesson.

Lesson plan list image

This will be the thumbnail image on the lesson plans page.



Arts and humanities

The developme
 Be able to dist
 and local,...

Clone count: 1



Arts and humanities

Desert Island
 Students revis
 previously lea

Clone count: 1

If no image is uploaded, a default image is displayed here.

To upload an image, click on the Choose File button, then either browse the image from your computer or simply drag and drop the image file into this field.

^ Lesson plan list image

Add a new file

Choose File No file chosen



Sector (required)

Checkboxes, at least one of which must be checked.

If the lesson plan is for vocational training, the sector to which the profession belongs should be selected, otherwise (in a lesson plan for public education) the checkbox "Not applicable" should be checked.

Topic, learning area (required)

One-line free-text field (maximum length: 255 characters).

There are several lessons per topic/learning area. Enter the broader subject area to which the lesson/project belongs. For example, if the subject of the lesson is accounting analysis, the topic is Accounting.

General subject(s)

Autocomplete field: start typing the subject name, and when it appears in the list, select it by pressing the arrow keys and hitting Enter, or by clicking on it. Separated by a

hyphen, you can enter/select more than one item (if a project plan is being created, it will involve more than one subject).

General subject(s)



Vocational subject(s)

Autocomplete field (for how to use it, see here: General subject[s]). To add a subject that is not in the list, type it in the box and press Enter. The next time, the new item will be selectable.

Grade (required)

Checkboxes, at least one of which must be checked.

Competences, skills to be developed (required)

Checkboxes, of which any number can be checked.

Here, we can select so-called [transversal skills](#), i.e. competences and skills that are not related to a specific profession, discipline or field of knowledge, but can be applied in a wide range of workplace situations.

Professional competences, skills to be developed

One-line free-text field (maximum length: 255 characters).

Of the competences required to work in the given occupation, enter the one(s) that the lesson/project is related to the development of (e.g. "car mechanics").

Digital tools used

Checkboxes, of which any number can be checked.

You can choose from a list of digital tools stored in the platform's database. If the one you want to use is missing, you can add it in the next field.

Other tool not included in the previous list

One-line free-text field (maximum length: 255 characters).

If the tool you want to use is not listed in the previous step, enter its name here.

Teaching method

Autocomplete field (for how to use it, see here: General subject[s]).

The platform provides a detailed description of modern teaching methods. You can choose from these.

Concepts

One-line free-text field (maximum length: 255 characters).

List the most important concepts related to the lesson.

Learning and development goals (required)

One-line free-text field (maximum length: 255 characters).

Describe the aim of the lesson/project, the learning outcome you want to achieve by the end of the lesson/project: 'By the end of the lesson/project, the student will be able to...'. At the end of the sentence, you should put an action word. For example: solve a system of equations, calculate an average, list the varieties of flower seeds, etc.

Required tools

One-line free-text field (maximum length: 255 characters).

A list of the tools used during the lesson.

Duration

One-line free-text field (maximum length: 255 characters).

Enter the duration of the lesson or the project in minutes or weeks, respectively.

Materials released before class or for a project

Content editor field, with the usual text editor features, for creating text, image, table content of any length, with source code editing option.

Materials released before class or for a project



Enter the reference to the source materials that you give to the students before class or for the project. With the link icon , you can insert links as well. The usefulness of the lesson plan will be improved if you also enter the purpose of the materials provided in advance.

Tip: When embedding videos, include their links as well, so that the resource will be preserved for those who download the PDF.

Introductory part and preparation of the lesson / project plan

Content editor field.

You can insert a table if you want to keep the usual tabular format of lesson plans. However, according to the DMC concept, each lesson is different and its structure depends on the type of lesson (introduction of new material, application of knowledge, summary, etc.), the method chosen and the working methods. For this reason, it is very difficult to standardise the form of lesson plans in a template, but above all because it is difficult to incorporate teacher creativity into a template.

The didactic objectives of the lesson, the individual methods to get the attention of the students, to motivate them, etc. can already be listed here.

Please provide a detailed description of the start of the lesson/project, how to prepare the essential elements of the lesson, which will be set out in detail in the following sections.

Implementation of the lesson / project plan

Content editor field.

Please provide a detailed description of the lesson schedule. It is useful to have a table here with an estimate of the time allowed for each part (which can rarely be kept). Free text or a table — it doesn't matter; the main thing is that it shows thorough pedagogical planning!

Evaluation plan

Content editor field.

What evaluation method do we use? This is important to describe even if it is not a "debriefing" lesson in the traditional sense. How do we ask for feedback on whether the learning objectives have been achieved?

Differentiation

Content editor field.

There is no class, not even a traditional frontal class, where there is no differentiation. There are as many creative ways as there are teachers to pay attention to the student who is slower. How does this happen in this class? Here are the solutions!

Homework, project task

Content editor field.

In this section, you can describe the homework, but you can also attach the worksheet or provide a link if it is to be submitted online. It is also a good idea to describe the purpose of the assignment and how it relates to the lesson or project.

Attached file

Attach a file or files in TXT, PDF, XLS, XML, DOC, DOCX, JPG, JPEG and PNG formats.

To attach a file, click on the Choose Files button, then either select the file or files from your computer or simply drag them into this box.

^ **Attached file**

Add a new file

Choose Files No file chosen

Unlimited number of files can be uploaded to this field.
 1 GB limit.
 Allowed types: txt pdf xls xml doc docx jpg png jpeg.

One of the most important ways of sharing knowledge between teachers is to share the tasks and resources. Give and take is a win-win situation!

Saving options

If you want to save the modified plan not only to your own account, but also to be included in the downloadable lesson/project plans, check the **Submit for examination** checkbox at the bottom of the page.

Submit for examination

Save

Administrators will be notified that a new lesson/project plan has been submitted, which will be made public after approval.

When your lesson or project plan is finished, click the **Save** button at the bottom of the page.

Save

Downloadable micro-learning contents

From the main menu, you can access the page by clicking on **Download... > digital educational materials**.

Use the drop-down lists on the left side of the page to filter and narrow down the list of micronutrients according to the following criteria:

- name of the creator,
- type,
- tool used for creation,
- sector.

To do this, open the corresponding drop-down list, enter the creator's name or select the value you are interested in, and click on the **Apply** button.

Name of the creator

Type

Tool used for creation

Sector

APPLY

If you want to change the filtering conditions, you can set the values in the drop-down lists to the default by clicking on the **Reset** button.

APPLY

RESET

Above the curriculum list, click on the **Upload digital curriculum** button to create a new curriculum (see Uploading digital educational materials).



Click on the underlined title to view the individual lessons.



On the left side of the page that opens, you will find the usual search box, and on the right side you will find the course material itself.

Uploading micro-learning contents

To create a new digital educational material, click on **Create... > digital educational materials** in the main menu, or click on the **Create** button above the list of downloadable digital educational materials.



Fill in the fields of the form, then click on the **Save** button at the bottom of the page.



Digital tools for lesson and project plans

From the main menu, you can access the page by clicking on **Ingredients > Digital tools**.

The drop-down lists on the left side of the page allow you to filter and narrow down the list of tools on the right side of the page, according to the following criteria:

- tool type,
- interface language,
- pricing,
- difficulty,

and you can sort the list in three ways.

To do this, open the corresponding drop-down list, select the value you are interested in and click on the **Apply** button.

Tool type

Interface language

Pricing

Difficulty

Sort by

Order

APPLY

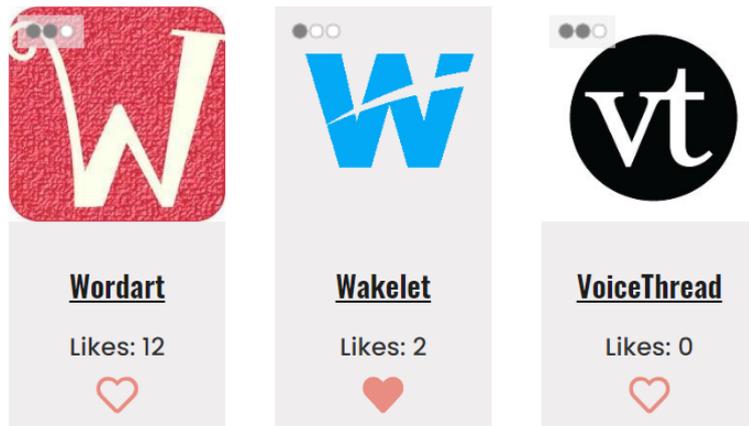
If you want to change the filtering conditions, you can set the values in the drop-down lists to the default by clicking on the **Reset** button.

APPLY

RESET

Above the list of devices, you can create a new device page by clicking on the **Add an application** button (see Add an application).

For each item in the list of tools, there is a three-point scale in the top right-hand corner of the card. This indicates that, according to the page's author, how difficult it is to use the app. Below the name of the app, you can see the number of likes, and if you are logged in, filled in heart icons indicate that you marked a tool as a favorite (a list of links to favorite tools is available on our user profile).



To view a description of each tool, click on the underlined name of the tool.

On the left side of the page that opens, you will find the usual search box, on the right side you will find the tool description itself.

You will find the breadcrumb menu under the title, and a PDF button underneath it. Clicking on the PDF button downloads the tool page contents to your computer as a PDF file.

Adobe Illustrator

[Home](#) » [Ingredients](#) » [Digital tools for creating lesson plans](#)



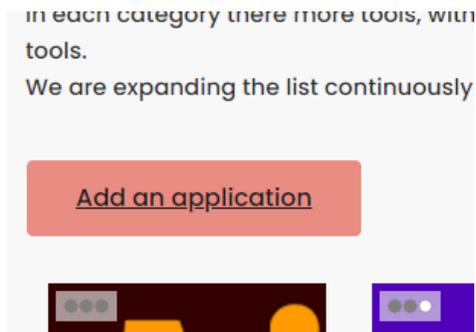
Tip: When embedding videos, include their links as well, so that the resource will be preserved for those who download the PDF.

Commenting on tool pages

When logged in, scroll down to the bottom of each tool's page to comment. Others can reply to your comments — just like with the lesson plans.

Add an application (available for mentors)

To create a new tool description page, click on the **Add an application** button above the tool list.



Fill in the fields of the form.

When you are done, click on the **Save** button at the bottom of the page.



Methods

From the main menu, you can access the page by clicking on **Ingredients > Methods**.

Use the drop-down list on the left to filter and narrow the list of methods on the right by method type. Select the value you are interested in from the drop-down list, then click on the **Apply** button.

Type of method



You can set the value in the drop-down lists to the default by clicking on the **Reset** button.

Assessment methods ▼

APPLY

RESET

In the list of methods, the cards show how many people liked each method. If you are logged in, a filled in heart icon on the card indicates if you have marked a method as a favourite (a list of links to favourite methods is available on our user profile).

<p><u>"From Sources to a Star"</u></p> <p>Systematic inventive thinking. In the case of innovation from resources we are dealing with existing products as opposed to customers and their needs.</p> <p>Likes: 2</p> <p style="text-align: right;"></p>	<p><u>Brainstorming</u></p> <p>A method for generating ideas that will provide a solution to a problem</p> <p>Likes: 14</p> <p style="text-align: right;"></p>
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To view a description of each method, click on the underlined title on the method card.

On the left side of the page that opens, you will find the usual search box, and on the right side you will find the method description.

By clicking on the PDF button, you can download the method description to your computer as a PDF file.



Tip: When embedding videos, include their links as well, so that the resource will be preserved for those who download the PDF.

Commenting on method pages

When logged in, scroll down to the bottom of each method's page to comment. Others can reply to your comments — just like with the lesson plans.

Add a new method (available for mentors)

To create a new method page, click on the **Create method** button above the methods list.

that also influence effectiveness. The re
recommended to enrich teachers' met

[Create method](#)

"From Sources to a

Fill in the fields of the form.

Tip: You should not only embed the videos, but also include a link to them, so that the downloaders will have the link in the PDF.

When you are done, click on the **Save** button at the bottom of the page.

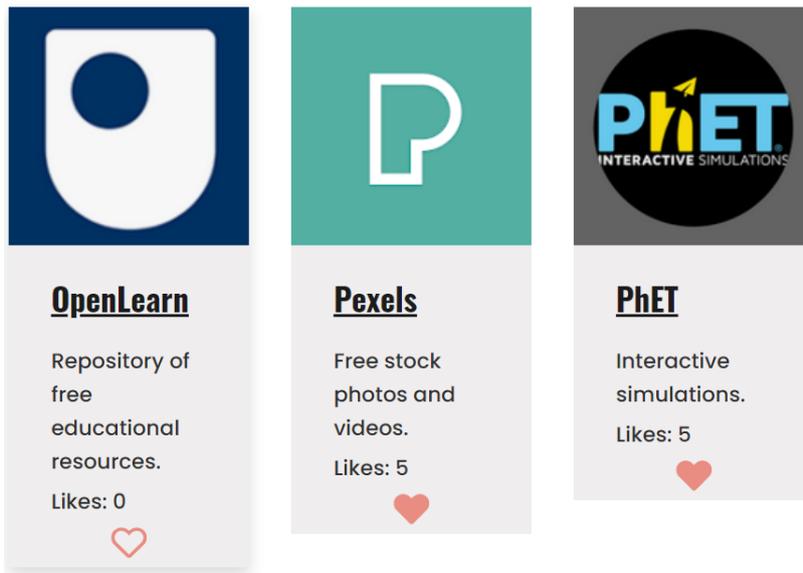
Save

Repositories / content resources

From the main menu, you can access the page by clicking on **Ingredients > Resources**.

Above the list of repositories, click on the **Add a repository** (see Add a repository).

In the list of repositories, the cards show how many people liked a particular repository. If you are logged in, a filled heart icon on the card indicates if you marked a repository as a favourite (a list of links to liked resources is available on your user profile).



To view a description of each content source, click on the underlined name of the repository.

On the left side of the page that opens, you will find the usual search box, and on the right side you will find the description of the repository.

When logged in, you will find a breadcrumb menu under the title, below that, a button that scrolls down to the comment section below it, and a button with the title PDF underneath it, which you can click to download the content source description to your computer as a PDF file.

#CodeWeek

[Home](#) » [Ingredients](#) » [Repositories](#)

Add new comment

PDF

Commenting on repositories

When logged in, scroll down to the bottom of each repository page to comment. Others can reply to your comments — just like with the lesson plans.

Add a repository (available for mentors)

To create a new content source page, click on the **Add a repository** button above the repositories list.



Fill in the fields of the form.

Tip: When embedding videos, include their links as well, so that the resource will be preserved for those who download the PDF.

When you are done, click on the **Save** button at the bottom of the page.



Annexes

Interview questions

Management

- What is the school's room for manoeuvre? What autonomy does it have to plan its development?
- Formulate a 3-5 year vision for the school. What positive changes do you want to achieve?
- Tell us about your transition to online education from March 2020! Where are you now?
- If normal education returns in March 2021, is there anything you would retain from what you learned in 2020?



- Have you had any national or international projects where you have worked with external partners to develop the school?

Teachers

- How was your transition to online education? Where are they now?
- How has the digital switchover improved them the most?
- Do you have a favourite app?
- What help do they need in the future?
- If 'normal' education is restored in March 2021, is there anything that would be retained from what was learned in 2020?

Administrator

- How was your transition to online education? Where are they now?
- How do you see online teachers?
- How do you see online students?
- If 'normal' education is restored in March 2021, is there anything that would be retained from what was learned in 2020?

Students

- How was your transition to online education? Where are they now?
- How has the digital switchover improved them the most?
- Do you have a favourite app?
- What help do they need in the future?
- If 'normal' education is restored in March 2021, is there anything that would be retained from what was learned in 2020?
- How would you describe online learning? Are you learning less or more? Is your understanding deeper or shallower than with traditional classroom learning?

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About the VETWork project

Aim of the project

The project aims to embed the traditional digital pedagogy teacher training program in a broader context by organizing customized school-based contact training sessions, linking it to organizational development components that enhance institutional digital competence and quality culture.

Objectives

- Institutional level intervention will begin with getting commitment from the management of partner schools. In each school, a management representative — so called “change agent” — will be selected to closely work on the project with a group of teachers.
- Partner VET schools will perform an initial self-assessment on digital pedagogy at institutional and individual (teacher) level, using the SELFIE tool and the DigCompEdu framework.
- Groups of teachers will participate in an online learning experience on the Digital Menu Card platform, for developing their digital competences based on DigComp 2.1 and the DigCompEdu framework.
- Partner schools will create their own digital pedagogy strategy and related action plans, broken down to individual level.
- On-the-job workshops will be organized for teachers who can put their new skills into practice and develop digital learning content for their classes with assistance from facilitators.
- Lessons will be delivered to students, using the newly developed materials and active learning methods.
- Finally, based on the experiences, a Digital Pedagogy Training and Intervention Model will be created that can easily be applied by other educational institutions as well, to support institutional level changes and continuous improvement of teaching practices.

Project details

Title: Digital Culture for the 21st Century Vocational Education

Acronym: VETWork

Project ID: 2020-1-HU01-KA202-078760

Program: Erasmus+ KA2, Strategic partnership

Target group: VET teachers, trainers, managers

Beneficiaries: VET students

Partner countries: Hungary, Slovakia, Slovenia, Romania

Duration: 1 Sep, 2020 – 31 May, 2023

Partners

Prompt-H Számítástechnikai Oktatási, Kereskedelmi és Szolgáltató Kft. (coordinator, Hungary)

Expanzió Humán Tanácsadó Kft. (Hungary)

Univerza na Primorskem, Fakulteta za Management (Slovenia)

Biotehniški Izobraževalni Center Ljubljana (Slovenia)

Országos Magyar Továbbképző Központ (Romania)

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