Erasmus+

SECONDARY SCHOOL OF COMMERCE, SERVICES AND CRAFTS AND LANGUAGE SCHOOL CERTIFIED FOR STATE LANGUAGE EXAMINATIONS, TÁBOR

NATIONAL EVALUATION REPORT

Developing the digital competences of VET teachers KA202-2018-008

Created by:

Marta Němečková

Jitka Kubů

2021, CZECH REPUBLIC

Content

1 Digital teaching materials and their description

A team of eight educators were supported within the project, the activity ´Development, testing and evaluation´. From September to December 2019, they intensively studied ICT, strengthening their digital competencies and digital literacy. An integral part was the preparation for the creation of digital teaching tools. The creation of new digital teaching aids was started in January 2020. In the environment of MS Eurekos, the educators created a new teaching material, a professional theoretical and practical course Confectionery Production. The course contains 22 professional lessons, which cover the content of the subject Confectionery Production including the educational syllabus from the 1st to the 3rd year of the vocational specialisation of a Confectioner.
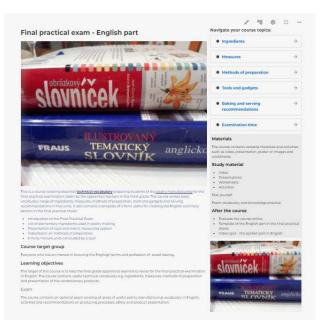
The lessons are

- content providers – offering interpretation of a new subject content, practice and consolidation of the curriculum, teaching aid, very good orientation for pupils),
- complementation of the sensory, physical and mental abilities of pupils,
- strengtheing agents of interdisciplinary relations,
- testing tools,
- supplement to teaching, currently a fully usable tool of distance education.

Structure of a lesson

- lesson content
- instructional video
- worksheet
- presentation
- H5P activity

CONFECTIONARY PRODUCTION – listing of lessons

LESSON NAME	LESSON CODE
Hygiene, sanitation, safety and health protection at work.	CU1
Terminology in the field of confectionary production.	CU2
Professional calculations of confectionary recipes.	CU3
Sugar processing.	CU4
Toppings.	CU5
Fillings.	CU6
Solid fat pastries.	CU7
Rubbed linzer pastries.	CU8
Cream puff pastry.	CU9
Puff pastry.	CU10
Whipped batter.	CU11
Rubbed batter.	CU12
Nut pastry.	CU13
Shortcrust-style and tea pastries.	CU14
Cream fillings and products.	CU15
Decorations in confectionary production.	CU16
Honey and gingerbread dough.	CU17
Yeast and plunder dough.	CU18
Restaurant desserts.	CU19
Quality assessment of confectionary products.	CU20
Storage and shelf life of products.	CU21
Final exam.	CU22

2 Evaluation of the quality of the created digital learning materials

The created digital teaching materials have undergone quality evaluation by teachers.

A group of five teachers evaluated the quality of the created digital teaching aids according to the following criteria:

- the text is legible, intelligible from a linguistic point of view,
- the course is created according to the appointed structure,
- the content of the course is relevant,
- the course is purposeful and usable in the field which it has been designed for,
- the product includes an innovative, comprehensive approach to the topic.

The most frequently mentioned comments on the created materials:

- corrections of spelling and stylistic mistakes,
- extension of specific information,
- simplification of a complicated professional text into a form acceptable for school pupils.

Relevant recommendations given by the collaborating team were incorporated by the author of the particular lesson.

The team of supported teachers evaluates the use of the Eurekos Management System for the developing of quality teaching tools, the creation and management of courses very positively.

3 Use of educational digital materials

At the end of 2019, an epidemic of a new coronavirus causing COVID-19 broke out in Wuhan, China. During the spring of 2020, the disease began to spread around the world and the World Health Organization began to classify it as a pandemic. In connection with the spread of the virus and the increase in patients, the Ministry of Health of the Czech Republic decided to ban the personal presence of pupils and students at primary, secondary and higher vocational education in schools and school facilities, as well as at universities and conservatories.

Gradually the newly developed digital teaching materials have been actively validated and used in teaching since March 2020, when due to coronavirus pupils could not be physically present in schools and all teaching was converted into a distance form of learning.

Currently, the course of Confectionary Production is actively used in educational process by 94 apprentice students at our school.

The developed digital learning materials are shared with other teachers at our school.

4 Project evaluation

The project enabled the school

- to open education to new methods and ways of learning through digital technologies,
- to improve students' competences in working with information and digital technologies,
- to develop students' computer literacy,
- to ensure non-discriminatory access to digital educational resources, students have access to the school laptops and a free internet connection,
- to provide conditions for the development of digital literacy and computer skills of teachers,
- to support innovative practices, monitoring, evaluation and dissemination of results of this project,
- to provide a system supporting the development of the school in the sphere of integration of digital technologies into teaching.

The school will:

- regularly upgrade the equipment of ICT technology for teachers and students,
- actively search for opportunities to bring financial resources for improvement of the ICT technology,
- develop the use of ICT technologies in teaching process,
- integrate ICT into the School Educational Curriculum,
- plan the systematic development of the use of ICT technologies in education,
- support further education of teachers and continuous education of pedagogical staff and strengthen their competences in the field of ICT,
- digitize the educational process of general as well as vocational subjects.

The evaluation of the project is based on the reflection of teachers who were supported to develop digital competencies, the reflection of teachers of vocational subjects and the feedback of students who used digital teaching materials, especially during online distance learning.

The questionnaire survey was conducted in two ways; in the first one there were 8 respondents of teachers (creators of the material), in the second one - 21 pupils (recipients / users of the material).

ERASMUS - KA2O2 dotazník 1/2

dotazník pro pedagogy/tvůrce materiálů

Jak celkově hodnotíte proces tvorby, včetně informací o tom, kde jste čerpali inspiraci a vybírali svá odborná témata? *

Text dlouhé odpovědi

Jaké to bylo pracovat s digitálními materiály? *

Text dlouhé odpovědi

The questionnaire for teachers contained in total 14 questions concerning the process of developing, reflection of personal development, cooperation with other creators, evaluation of digital teaching materials and their use in the future. Then there were questions considering potential threats for students with different learning abilities and technical equipment.

The teachers answered the question evaluating the process of creation and sources of inspiration coincidently – in a highly positive way; they consider the project to be successful and beneficial for both, the students and especially for themselves, They claimed their personal development in the field of skills and knowledge of modern digital technologies. They drew inspiration from many different sources - they chose professional topics complying with the content of the curriculum for the field of a Confectioner according to the national educational programme and the consequential school educational programme. An integral part of the preparation for creators´ own work were professional experience gained from teaching experience, reference books and the Internet.

Working with digital materials was a new experience, most respondents stated primarily the benefits in the field of personal development and a great step forward in the use of IT technology in many areas. One third of the respondents commented mainly on the process of creating materials – improvement of the use of PCs, better work with the camera, camcorder, mobile phone and operating a special programme for audio recording. There is also a positive experience of a teacher with help from the students - the students ´know how´ helped a teacher solve a technical IT problem.

All respondents evaluate the creation of materials decidedly as an excellent experience, especially due to the fact that they could create independently; using their knowledge and former practical experience, being allowed to choose topics and procedures, which are beneficial from their point of view, and being allowed to implement topics which were new to the students. The digital materials themselves offer an opportunity to highlight curricula that are useful for students' practice and will be used by the students throughout their professional careers. When creating one's own materials, it is especially appreciated that in such a material orientation of the creator is quick. And if he learns to work with a unified concept of editing, all materials are clear. And this aspect of the material is beneficial for the students too. The teaching material

can be modified and updated so that it is clearly understandable to different types of students. And another interesting idea was mentioned in the feedback of the teachers - the material personally developed may also show the learners mistakes in the method of preparation and present possible ways of improvements.

The biggest difficulty in creating materials was the initial shortage of know-how and absence of personal experience with video creation, time demanding nature of the project, or the choice of the right topics for one's digital material. The teachers spent many hours on training, preparation of ingredients, manufacturing pastries, and also on setting the environment for recording, photographing details, presenting finished products etc. For some educators, it was difficult to achieve the personal goal of making the educational materials interesting to students.

The biggest challenges from the perspective of a professional teacher were, for example, the fact that students would see in the video the teacher they know in person, the need for more professional video production - the commentary on the video should contain a detailed description of what is happening in the video (the teacher should create a detailed scenario).

Colleagues who were not involved in the project looked at the work with interest, occasionally got actively involved with their opinions, experiences, criticism. Everyone agrees that they are convinced of the usefulness of developing digital materials, which was confirmed by the compulsory form of distance learning due to the pandemic. There is also a lonely opinion of a teacher that the reactions of other colleagues were negative - colleagues viewed the work with contempt and distrust.

The teachers who were participating in the project agree that they certainly do wish to continue creating digital materials in the future, provided that the composition of subjects will be suitable, they will be able to improve competencies for creating educational videos at a higher level, expanding the register of modular activities, sophisticated video phasing and more advanced functions). The decisive factor would be the time for creation and closer cooperation with other colleagues in the process, mutual help and constructive feedback.

The biggest challenge of working with digital teaching materials is the possibility of remote access of the student and external implementation of the teaching module as a complementary material or an additional material for blended learning.

From an organizational point of view, it is considered positively that teaching students with various learning abilities the digital teaching tools allow the teachers to refer a more advanced learner to use the digital material individually and to supervise a weaker student more intensively.

Teachers' answers to the question whether there are areas/subjects for which this form of teaching is not suitable vary - some have expressed their opinion directly saying that no - there is no area/subject in which this form cannot be implemented, because in all subjects there are topics that are appropriate to learn in the form of digital materials. However, some educators mention vocational training as an area that cannot be replaced by the study of digital materials. The most important part of vocational education is the student's gained practical skills – the training of implementation of the right production

processes, which cannot be replaced by virtual insight into the production process. In any case, there is a common opinion that digital materials are suitable for strengthening the theoretical part of the vocational training and an invaluable tool at the times of mandatory distance learning.

On the contrary, the school subjects that are seen as the most suitable for this form of teaching include - theory of raw materials, IT, economics and civics. Some teachers did not mention a particular subject, they say that in distance teaching every subject can contain a particular area that can be studied digitally and this is currently being proved in mandatory distance learning due to the pandemic.

The teachers are aware of the differences in benefits of this teaching method for individual students. Weaker students need far more time and peaceful environment to concentrate, which may be an advantage of working with digital material, but at the same time they are more endangered by not having a sufficient knowledge in working with a PC, and that can cause fundamental problems while using digital materials . In addition, a weaker student might lack immediate feedback from the teacher and miss the possibility of face-to-face communication with the teacher. An important factor of success when this method is applied is the individual internal motivation of the student.

When asked whether the use of digital teaching materials would increase the number of students who would drop their studies before finishing the programme, teachers agree that no.

The last question was aimed at the numbers of students leaving school early. Statistics show that 10% of students drop out early in the period of the last 3 years; 6% of students from postgraduate programmes following vocational courses, 2% of students in four-year graduation courses and 2% of students in vocational courses.

The questionnaire for students contained 7 questions and there were 21 respondents. Everyone agrees that learning with digital teaching materials was something new and interesting for them. Most of these materials worked well, the curriculum seemed easy and understandable, also because there was a teacher on the video demonstration that the students knew. Among the students' reactions was the opinion that learning was more fun and the programme worked well. The opinion that it was not the same as learning at school and that the student had not learned much new was very rare.

Students see the advantage of digital materials in that they can learn at their own pace, they can take notes slowly and are not disturbed. Some of the students appreciated the diversity and clarity of the examples from the professional workplace, which was familiar and which they knew themselves, and they mentioned that they enjoyed it more. Interesting were various forms of quizzes, puzzles or memory games, e.g. the game where two identical products were looked for. Other responding students praised the organization of the presentations and mentioned that digital learning was easier than studying from a textbook and an exercise book.

Most students do not see any disadvantages in working with digital learning materials, but there is a rare opinion that a student cannot ask when he or she does not understand something and does not receive an answer from a teacher immediately.

Some students had difficulties with starting some of the online activities due to old technical equipment.

When the students were asked about areas / subjects for which digital learning is not a suitable form of teaching, there is agreement with teachers opinion - it is certainly not possible to replace practical training and consolidation of their practical skills without supervision of the teachers.

It is appropriate to use digital teaching materials primarily in vocational subjects, namely in the subject of raw materials and technology, machinery and equipment. Some students mentioned also other subjects, for example mathematics, Czech, science or foreign languages.

Students reflect various benefits of this form of education depending on different abilities of individuals, depending on their motivation and intensity of studying.

The Project Developing the digital competences of VET teachers KA202-2018-008 opened up new possibilities for teachers and students to actively involve ICT in teaching. The questionnaire survey showed that teachers and students evaluate the experience gained in the project and the work with the newly developed materials positively. Trial testing of the materials showed that the personalized digital materials are interesting, clear and their content maximally corresponds with the school curriculum. Moreover, the students also appreciated the diversity of activities and the familiarity of environment where the educational videos were created. For students with different learning styles, digital materials offer opportunity to work at their own pace, study anywhere and use materials in the conditions of distance learning without any limitations. At the present time, the newly developed digital materials have become fully used teaching material. In conclusion, it can be said that the project has opened our school, participating teachers and students the door to successful introduction of modern educational methods in the field of digital technologies and their implementation in vocational programme for the specialization of Confectioner.