## REACTI-VET - FOCUSED REQUIREMENT ANALYSIS – CONCLUSIONS

COUNTRY: **ALL COUNTRIES (ESTONIA, HUNGARY, ITALY)**

TARGET GROUP: **VET TEACHERS**

## O1-A2 FOCUSED NEEDS-ANALYSIS

In the first project phase (focused requirement analysis) the Consortium implemented a survey for VET teachers which will serve as a basis for the next outcome, the development of an upskilling training for teachers.

Our intention was to get data which can be used as input for elaborating the final version of the training package, and to detail possible differences among the needs in the respective partner countries.
The aim of the survey was to gather information about the ICT skills of VET teachers and the ICT-based methods and tools they use in teaching. We also wanted to know what efforts they have been making so far to reduce the skills gaps, and what type of contact they currently have with companies.

We established an online questionnaire (published on the project website), and we asked teachers from Estonia, Italy, and Hungary for collaboration. Initially, we intended to involve into the requirement analysis 30 partners/countries, but there are large differences between the size of Italy, Estonia, and Hungary.

In the first part of the survey we asked the respondents for general details, f.e. gender, age, country of origin etc.

In the second part we inquired about the qualifications, work experience, the applied teaching methods of the respondents. We also inquired if they have any previous corporate experience, do they or have they worked outside of education, if yes, what kind.

In the third part we studied their ICT qualifications: what level of digital competences they possess, how much of it they use in their daily practice and how often. We also considered it important to survey the demand/willingness for training as well.

In the fourth part we seeked the possibility to utter the steps of bridging the gap between the theoretical and practical parts of vocational education so far and in the future:

- *in what extent VET follows the needs of the practice*
- *by what we can reduce the difference between the two*
- *what kind of teaching material should be compiled and by whom*
- *how much experience the participants have concerning developing teaching material*
- *what kind of connections they maintain with companies to get to know their needs*

So we got different number of responses, as well:

- *In Estonia 29responsesfromVET teachers were received through the online questionnaire;*

| Male | 10 | 34% |
|--------|-----|-----|
| Female | 19 | 66% |
| Total | 29 | |

- *In Hungary 150 responses from VET teachers were received through the online questionnaire;*

| Male | 54 | 36,0% |
|---|---|---|
| Female | 96 | 64,0% |
| Total | 150 | |

- In Italy 85 responses from VET teachers were received through the online questionnaire.

| Male | 56 | 65,9% |
|---|---|---|
| Female | 27 | 31,8% |
| No answer | 2 | 2,4% |
| Total | 85 | 100,0% |

The ratio of male/female teachers reflects the general situation of secondary education in each country.

The ratio of women in secondary education is higher in Hungary and Estonia, while in Italy the involvement of men is more typical.

We got responses from other countries as well, which suggests that the topic raises wide range interest.

**Professional background**

The age of the respondents mainly ranges between 30- and 60 years of age, which means that the interest of the more experienced colleagues is significant.

| | Estonia | | Hungary | | Italy | |
|---|---|---|---|---|---|---|
| 20-29 | 1 | 3% | 4 | 2,7% | 11 | 12,9% |
| 30-39 | 6 | 21% | 17 | 11,3% | 24 | 28,2% |
| 40-49 | 7 | 24% | 55 | 36,7% | 24 | 28,2% |
| 50-59 | 10 | 34% | 52 | 34,7% | 21 | 24,7% |
| over 60 | 5 | 17% | 19 | 12,7% | 5 | 5,9% |
| No answer | | | 3 | 2% | | |
| Total | 29 | 100,0% | 150 | 100,0% | 85 | 100,0% |

Concerning qualifications, the qualifications of the teachers involved in education is in accordance with the system of requirements of the given country which are quite similar in the case of the three countries: Bachelor and Master degrees are typical, but there also are doctoral degrees among the respondents.

| | Estonia | | Hungary | | Italy | |
|---|---|---|---|---|---|---|
| secondary and post-secondary (ISCED 3, 4, 5) | 5 | 17% | 5 | 3,3% | 12 | 14,1% |
| bachelor (BSC/BA/BProf) in teacher (ISCED 6) | 6 | 21% | 17 | 11,3% | 2 | 2,4% |
| bachelor (BSC/BA/BProf) in other profession (ISCED 6) | 6 | 21% | 9 | 6,0% | 11 | 12,9% |
| master (MSC/MA) in teacher (ISCED 7) | 3 | 10% | 99 | 66,0% | 1 | 1,2% |
| master (MSC/MA) in other profession (ISCED 7) | 2 | 7% | 18 | 12,0% | 48 | 56,5% |
| Doctoral or equivalent (ISCED 8) | 7 | 24% | 1 | 0,7% | 10 | 11,8% |
| No answered/other | | | 1 | 0,7% | 1 | 1,2% |
| Total | 29 | 100% | 150 | 100% | 85 | 100% |

Respondents with a Masters degree were typically from Hungary and Italy, while the doctoral (or equivalent) degrees were typical for Estonia.

Masters degree is a minimum requirement in all three countries, but in some cases a bachelor's degree is also accepted.

It is assumable about the previous experience of the respondents, that in Hungary the typical years of experience is between 11-20, in Italy it was more the younger teachers (years 1-5)that were interested. In Estonia there were no respondents from the age group of 30 or more.

| | Estonia | | Hungary | | Italy | |
|---|---|---|---|---|---|---|
| 1-5 | 5 | 17% | 20 | 13,3% | 43 | 50,6% |
| 6-10 | 7 | 24% | 14 | 9,3% | 11 | 12,9% |
| 11-15 | 3 | 10% | 26 | 17,3% | 11 | 12,9% |
| 16-20 | 7 | 24% | 27 | 18,0% | 7 | 8,2% |
| 21-25 | 4 | 14% | 19 | 12,7% | 8 | 9,4% |
| 26-30 | 2 | 7% | 21 | 14,0% | 1 | 1,2% |
| 31-35 | - | - | 14 | 9,3% | 1 | 1,2% |
| 36, or more | - | - | 6 | 4,0% | 0 | 0,0% |
| No answered | 1 | 3% | 3 | 2,0% | 3 | 3,5% |
| Total | 29 | 100,0% | 150 | 100,0% | 85 | 100,0% |

In Hungary there were a number of respondents above the age of 30 ( over 13%) as well.

The respondents teach in the types of education below:

|  | Estonia | | Hungary | | Italy | |
|---|---|---|---|---|---|---|
| Primary school or grammar school | 0 | 0 | 2 | 0,7% | 0 | 0 |
| Vocational school on upper secondary level (EQF 4) | 11 | 26% | 192 | 70,8% | 19 | 16,8 |
| Post-diploma vocational technical institute (EQF 5) | 27 | 63% | 0 | 0 | 44 | 38,9 |
| Higher education (EQF 6, 7, 8) | 0 | 0% | 7 | 2,5% | 17 | 15 |
| Adult education / enterprise | 5 | 12% | 18 | 6,6% | 29 | 25,6 |
| Other, please specify: | 0 | 0 | 0 | 0 | 4 | 3,5 |
| There are several places to teach | 0 | 0 | 52 | 19,1% | 0 | 0 |
| Total | 43 | | 271 | | 113 | |

We can conclude that in Hungary the number of people teaching in vocational education is significant, whereas in Italy and in Estonia the post-diploma vocational education is more typical.

The majority of respondents were teacher in more types of school at the same time, including vocational education. That's true for each country.

We were interested if the respondents worked in a corporate field before teaching as well.

|  | Estonia | | Hungary | | Italy | |
|---|---|---|---|---|---|---|
| No, I've always been a teacher. | 5 | 0 | 69 | 46,0% | 6 | 7,1% |
| Yes, I worked before starting to teach. | 17 | 26% | 63 | 42,0% | 23 | 27,1% |
| Yes, even now I have a job in a company besides being a teacher. | 7 | 63% | 17 | 11,3% | 54 | 63,5% |
| No answer | 0 | 0% | 1 | 0,7% | 2 | 2,4% |
| Total | 29 | 100,0% | 150 | 100,0% | 85 | 100,0% |

In Hungary, nearly the half of the respondents worked only as a teacher or used to work at a company before teaching, and only less people are currently working actively for companies. Just the other way round with Estonia and Italy: they have a higher ratio of people who are working in a corporate environment and teaching at the same time.

How much the ones currently working for education (have) worked in corporate environment is an interesting detail.

|  | Estonia |  | Hungary |  | Italy |  |
|---|---|---|---|---|---|---|
| 1-10 | 7 | 24% | 37 | 46,3% | 25 | 32,5% |
| 11-20 | 8 | 28% | 15 | 18,8% | 23 | 29,9% |
| 21-30 | 5 | 17% | 9 | 11,3% | 19 | 24,7% |
| 31, or more | 3 | 10% | 11 | 13,8% | 7 | 9,1% |
| Not specified | 6 | 21% | 8 | 10,0% | 3 | 3,9% |
| Total | 80 | 0 | 80 | 0 | 77 |  |

Most of the respondents have experience of 1-30 years, Hungary exceeds of the countries with respondents having experience of 1-10, followed by Italy. Of respondents with 21-30 years of experience Italy excels, which also means that many of the respondents work for companies outside of teaching. In Estonia and Hungary there also are some cases like this, and in Hungary the experience of more than 30 years is also significant.

- *Estonia: 83% of the respondents had experience in other fields as well. 37% of those with other experience worked more than 20 years in industry.*
- *Hungary: A bit more than half of the teachers (53%) had experience in other fields as well. 25% of those with other experience worked more than 20 years in industry.*
- *Italy: Over 90% of respondents works or has worked in private companies in the past. This data will certainly affect the questions regarding the relationship with companies in the teaching practice and the use of practical "on-the-job" tools.*

Another interesting question was on what fields the respondents work in. The range is very wide:

|  | Estonia |  | Hungary |  | Italy |  |
|---|---|---|---|---|---|---|
| Foreign Languages | 1 | 3% | 27 | 18,0% | 6 | 4% |
| Natural Sciences (Mathematics, Physics, Chemistry, Biology, Geography) | 1 | 3% | 31 | 20,7% | 11 | 8% |
| Physical Education | 0 | 0% | 4 | 2,7% | 1 | 0,7% |
| Social Sciences (History, Literature) | 2 | 5% | 22 | 14,7% | 8 | 5,8% |
| Agriculture, Forestry and Fishing | 0 | 0% | 5 | 3,3% | 1 | 0,7% |
| Mining and Quarrying | 0 | 0% | 0 | 0,0% | 0 | 0 |
| Manufacturing | 3 | 8% | 2 | 1,3% | 8 | 5,8% |
| Electricity, Gas, Steam and Air Conditioning Supply | 0 | 0% | 9 | 5,3% | 3 | 2,1% |
| Water Supply; Sewerage, Waste Management and Remediation Activities | 0 | 0% | 0 | 0,0% | 2 | 1,4% |

| | | | | | | |
|---|---|---|---|---|---|---|
| Construction | 2 | 5% | 11 | 7,3% | 7 | 5,1% |
| Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles | 4 | 11% | 9 | 6,0% | 3 | 2,1% |
| Transportation and Storage | 2 | 5% | 4 | 2,7% | 0 | 0 |
| Accommodation and Food Service Activities | 4 | 11% | 3 | 1,3% | 2 | 1,4% |
| Information and Communication | 10 | 26% | 39 | 20,0% | 23 | 16,8% |
| Financial and Insurance Activities | 0 | 0% | 13 | 6,0% | 5 | 3,5% |
| Real Estate Activities | 0 | 0% | 0 | 0,0% | 2 | 1,4% |
| Administrative and Support Service Activities | 1 | 3% | 9 | 6,0% | 8 | 5,8% |
| Public Administration and Defence; Compulsory Social Security | 0 | 0% | 3 | 2,0% | 2 | 1,4% |
| Education | 1 | 3% | 15 | 9,3% | 13 | 9,5% |
| Human Health and Social Work Activities | 0 | 0% | 3 | 2,0% | 4 | 2,8% |
| Arts, Entertainment and Recreation | 0 | 0% | 7 | 4,7% | 2 | 1,4% |
| Service economy | 1 | 3% | 5 | 3,3% | 7 | 5,1% |
| Other, please specify: | 3 | 8% | 10 | 17,3% | 19 | 13,9 |
| Total | 38 | | 271 | | 137 | |

It's assessable that in all three countries the ratio of respondents working in the field of Information and Communication:

- *Estonia: Within the field of teaching, IT has a leading role with 26%. The number of general subjects (modern languages, sciences, humanities) and subjects among vocational branches vary between 1 and 4.*
- *Hungary: Within the field of teaching IT has a leading role with 39 persons (20%), as well the number of general subject teachers (modern languages, sciences, humanities). The amount of deviation is small among vocational branches, mechanical engineering with 7 persons should be noted among other fields.*
- *Italy: Within the field of teaching Information and Communication has a leading role with 23 respondents (16,8%). Other subjects covered by several respondents are natural sciences.*
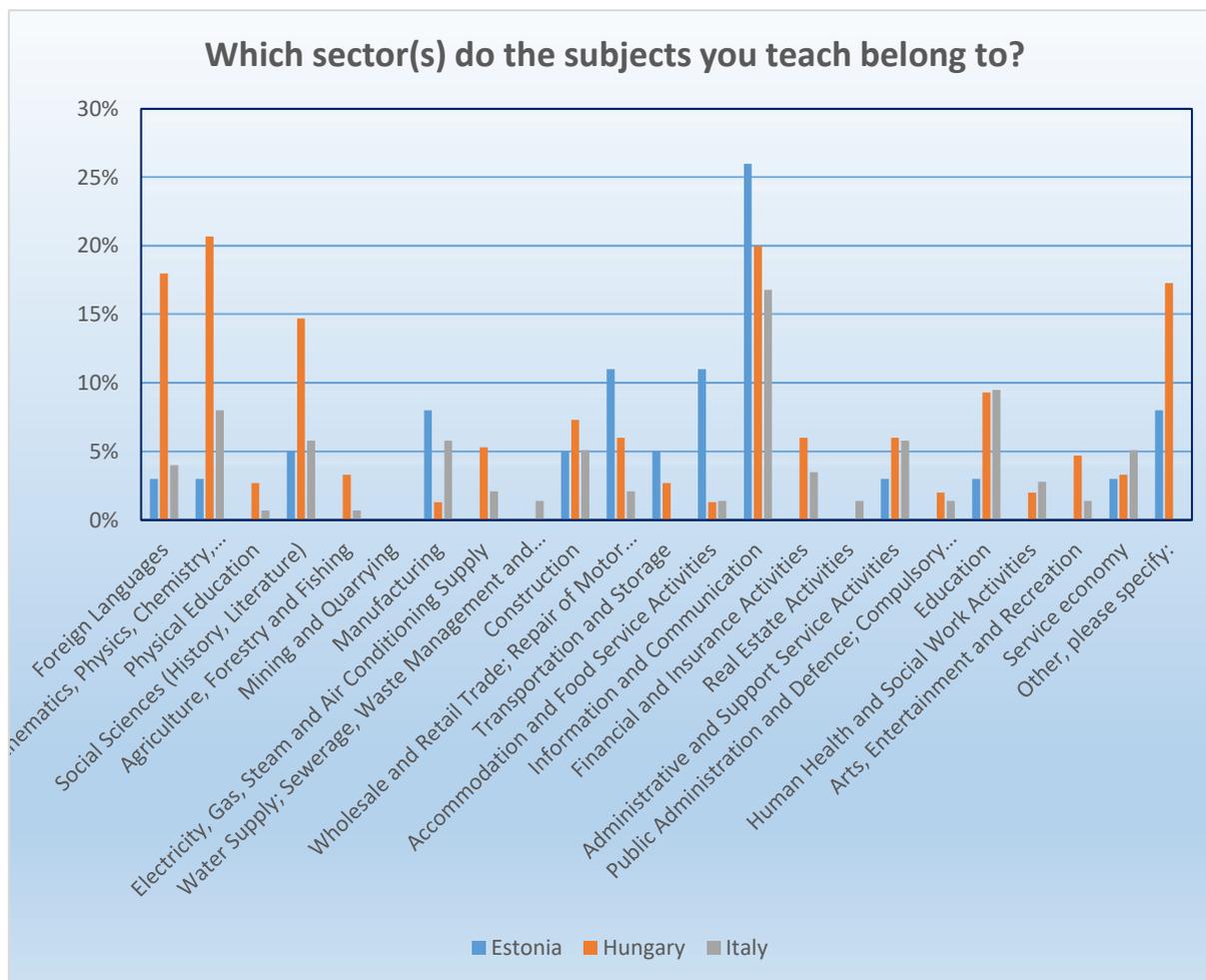
The respondents can be found in numerous roles during teaching:

|  | Estonia | | Hungary | | Italy | |
|---|---|---|---|---|---|---|
| Classroom teacher | 11 | 38% | 108 | 72,0% | 71 | 83,5% |
| On-the-job tutor (or equivalent role) | 3 | 10% | 2 | 1,3% | 3 | 3,5% |
| Both roles | 15 | 52% | 36 | 24,0% | 8 | 9,4% |
| No answer | 0 | 0% | 4 | 2,7% | 3 | 3,5% |
| Total | 29 | | 150 | | 85 | |

The chart reveals that the ratio of Classroom teachers is more significant in Hungary and Italy, while is's lower in Estonia. Whereas in Estonia both educational roles) are typical, just like in Hungary, too.

**ICT skills and ICT-based methods in teaching**

Respondents have different competences:

| | Estonia | | Hungary | | Italy | |
|---|---|---|---|---|---|---|
| beginner | 27 | 7% | 7 | 4,7% | 10 | 11,8% |
| basic | 4 | 14% | 51 | 34,0% | 38 | 44,7% |
| advanced | 13 | 45% | 70 | 46,7% | 24 | 28,2% |
| professional | 10 | 34% | 20 | 13,3% | 10 | 11,8% |
| No answer | 0 | 0% | 2 | 1,3% | 3 | 3,5% |
| Total | 29 | 0 | 150 | 0 | 85 | |

We can assess that:

- *In Estonia: 79% of the teachers have considerable knowledge of ICT, and the amount of beginner knowledge is low. It seems beneficial to the project.*
- *In Hungary: 80% of the teachers have considerable knowledge of ICT, the amount of beginner knowledge is insignificant. It seems beneficial to the project.*
- *In Italy: Despite the high number of people teaching Information and Communication subjects, only 40% of respondents declare to have an advanced or professional level of ICT skills. This is an important result as it shows that even in teaching contexts that are close to the job market and industrial world, ICTs are still not widespread in the teaching practice.*
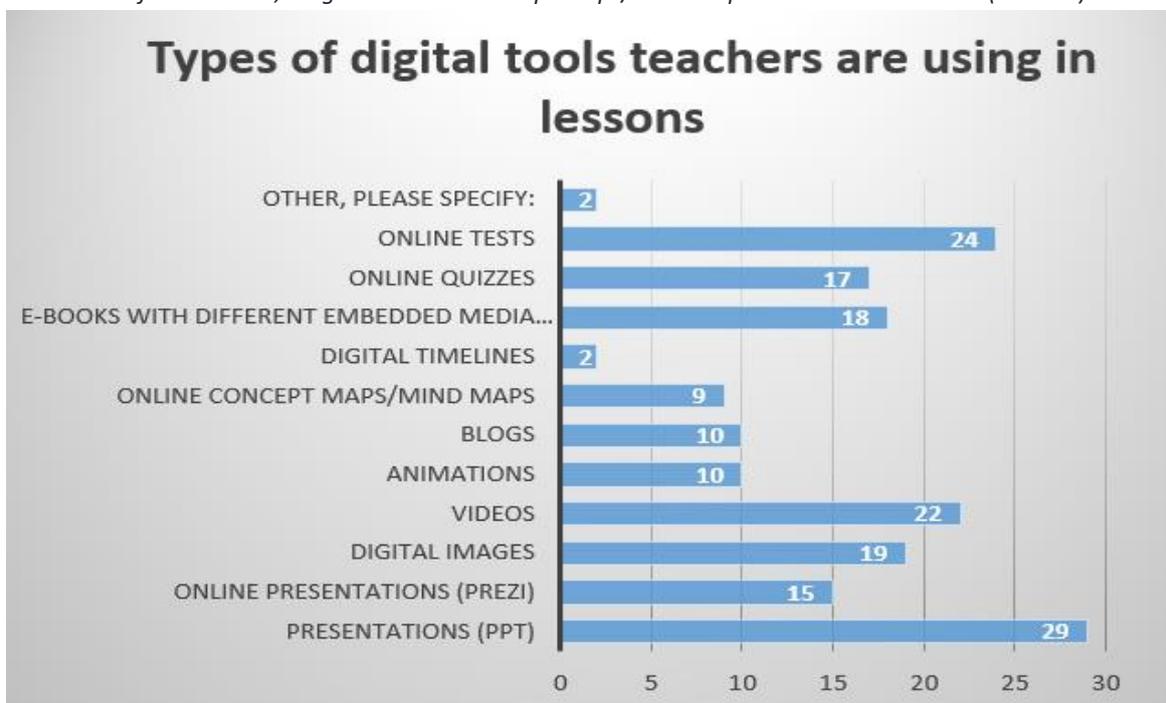
Our daily work means we are creating, using, sharing digital contents:

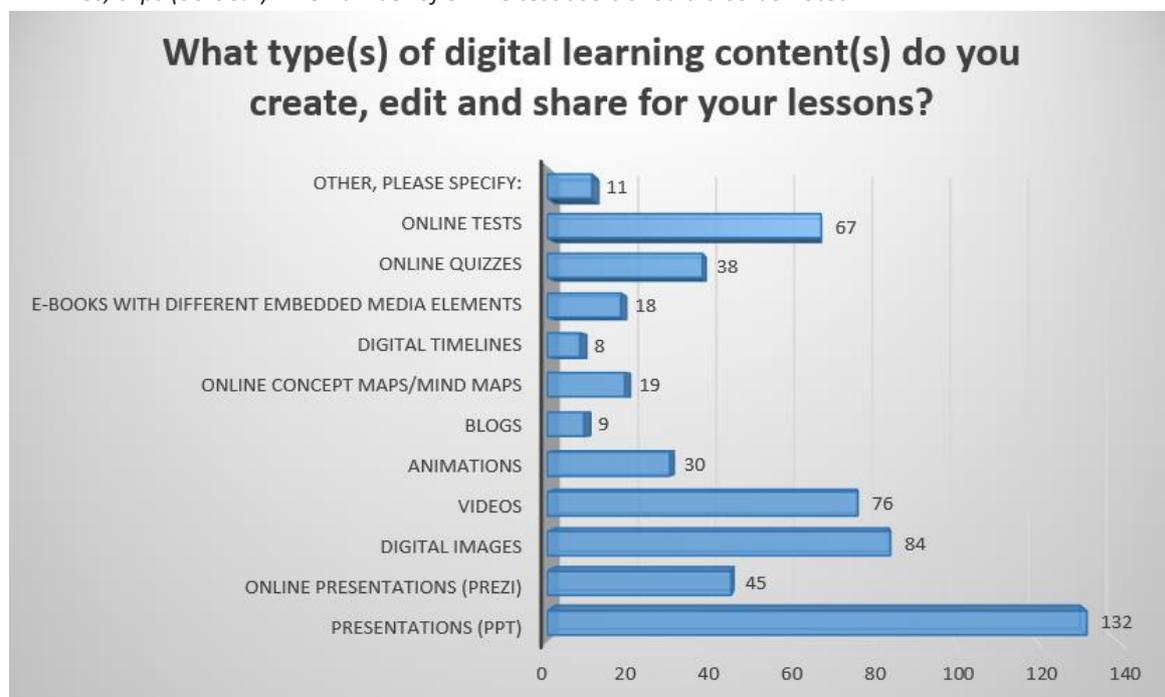| | Estonia | | Hungary | | Italy | |
|---|---|---|---|---|---|---|
| Presentations (ppt) | 29 | 100% | 132 | 88,0% | 75 | 88,2% |
| Online presentations (Prezi) | 15 | 52% | 45 | 30,0% | 11 | 12,9% |
| Digital images | 19 | 66% | 84 | 56,0% | 40 | 47,1% |
| Videos | 22 | 76% | 76 | 50,7% | 55 | 64,7% |
| Animations | 10 | 34% | 30 | 20,0% | 17 | 20,0% |
| Blogs | 10 | 34% | 9 | 6,0% | 8 | 9,4% |
| Online concept maps/mind maps | 9 | 31% | 19 | 12,7% | 12 | 14,1% |
| Digital timelines | 2 | 7% | 8 | 5,3% | 9 | 10,6% |
| E-books with different embedded media elements | 18 | 62% | 18 | 12,0% | 13 | 15,3% |
| Online quizzes | 17 | 59% | 38 | 25,3% | 11 | 12,9% |
| Online tests | 24 | 83% | 67 | 44,7% | 19 | 22,4% |
| Other, please specify: | 2 | 7% | 11 | 7,3% | 5 | 5,9% |
| Total | 177 | | 537 | | 275 | |

Of the digital tools, almost everybody uses presentations, and many options for static and dynamic images, clips. The number of online test users should also be noted.
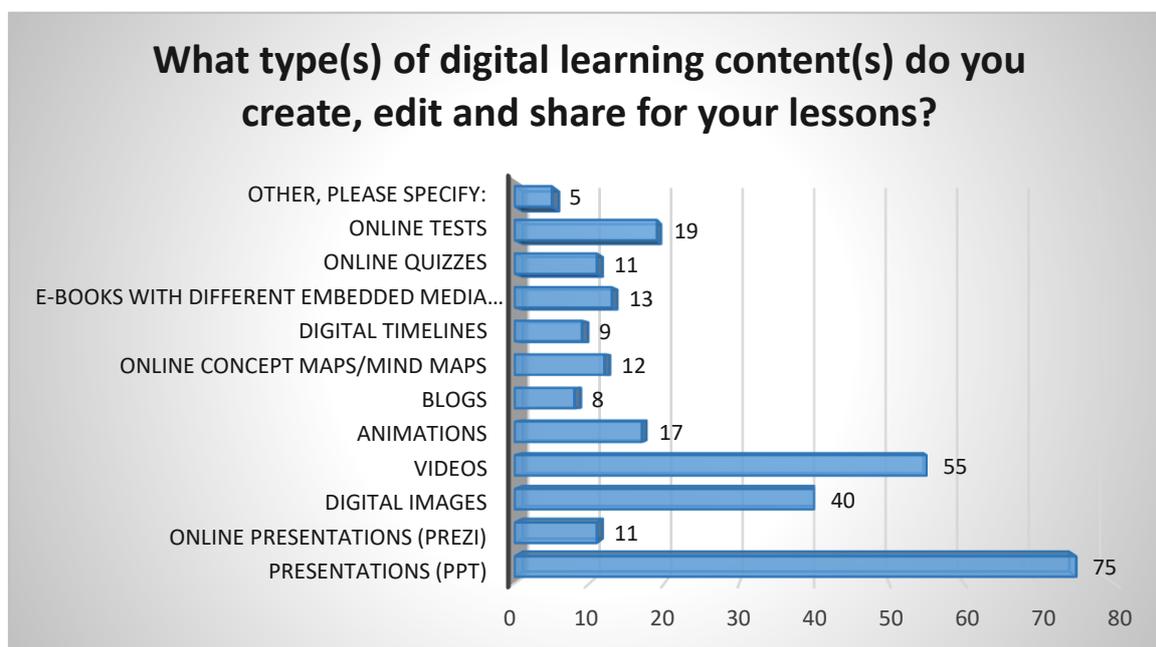
- *Estonia: everybody uses presentations, and 83% use online tests. The use of digital images, videos are far above 60%, and online presentations and quizzes also seem popular among the respondents. The use of animations, blogs and online concept maps/mind maps should also be noted (66-76%).*

## Types of digital tools teachers are using in lessons

| Category | Value |
|---|---|
| OTHER, PLEASE SPECIFY: | 2 |
| ONLINE TESTS | 24 |
| ONLINE QUIZZES | 17 |
| E-BOOKS WITH DIFFERENT EMBEDDED MEDIA… | 18 |
| DIGITAL TIMELINES | 2 |
| ONLINE CONCEPT MAPS/MIND MAPS | 9 |
| BLOGS | 10 |
| ANIMATIONS | 10 |
| VIDEOS | 22 |
| DIGITAL IMAGES | 19 |
| ONLINE PRESENTATIONS (PREZI) | 15 |
| PRESENTATIONS (PPT) | 29 |

- *Hungary: almost everybody uses presentations (88%), and many options for static and dynamic images, clips (50-56%). The number of online test users should also be noted.*

## What type(s) of digital learning content(s) do you create, edit and share for your lessons?

| Category | Value |
|---|---|
| OTHER, PLEASE SPECIFY: | 11 |
| ONLINE TESTS | 67 |
| ONLINE QUIZZES | 38 |
| E-BOOKS WITH DIFFERENT EMBEDDED MEDIA ELEMENTS | 18 |
| DIGITAL TIMELINES | 8 |
| ONLINE CONCEPT MAPS/MIND MAPS | 19 |
| BLOGS | 9 |
| ANIMATIONS | 30 |
| VIDEOS | 76 |
| DIGITAL IMAGES | 84 |
| ONLINE PRESENTATIONS (PREZI) | 45 |
| PRESENTATIONS (PPT) | 132 |

- *Italy: almost everybody uses presentations (88,2%), and many opt for static and dynamic images, clips (47-65%). Using online tests is less typical than in the cases of the other two countries.*



## What type(s) of digital learning content(s) do you create, edit and share for your lessons?

| Category | Value |
|---|---|
| OTHER, PLEASE SPECIFY: | 5 |
| ONLINE TESTS | 19 |
| ONLINE QUIZZES | 11 |
| E-BOOKS WITH DIFFERENT EMBEDDED MEDIA… | 13 |
| DIGITAL TIMELINES | 9 |
| ONLINE CONCEPT MAPS/MIND MAPS | 12 |
| BLOGS | 8 |
| ANIMATIONS | 17 |
| VIDEOS | 55 |
| DIGITAL IMAGES | 40 |
| ONLINE PRESENTATIONS (PREZI) | 11 |
| PRESENTATIONS (PPT) | 75 |

Indicated ICT tools used in teaching is also connected to the topic:

|  | Estonia | | Hungary | | Italy | |
|---|---|---|---|---|---|---|
| Online tools for communication and collaboration with stakeholders (students, parents, companies) | 17 | 59% | 93 | 62,0% | 18 | 21,2% |
| E-learning management system (such as Moodle) to support cooperative learning | 22 | 76% | 34 | 22,7% | 10 | 11,8% |
| Online survey tools to get feedback from stakeholders (students, parents, companies) | 14 | 48% | 30 | 20,0% | 9 | 10,6% |
| Open educational resources for your subject(s) | 4 | 14% | 20 | 13,3% | 12 | 14,1% |
| Web based application and platform for managing project work (eg. Trello, Microsoft Project) | 5 | 17% | 27 | 18,0% | 9 | 10,6% |
| Online tools for editing and sharing digital contents in teamwork with students | 11 | 38% | 214 | 62,0% | 31 | 36,5% |
| Total | 73 | | 271 | | 89 | |

- *Estonia: The use of e-learning management systems to support cooperative learning is very high, but more than half of the respondents tend to use online tools for communication and collaboration as well. Many also use online survey tools and online tools for editing. The other choices are moderately exploited. This must be kept in mind during curriculum development.*

- *Hungary: The use of online tools in communication is very high. The other choices are moderately exploited. This must be kept in mind during curriculum development.*

- *Italy: Online tools for editing and sharing digital contents in teamwork with students. The only widespread tool is represented by online tools for editing and sharing digital contents in teamwork with students (31 respondents uses these tools). It is worth noting that only 9 respondents declared to use OERs.*

The methods applied in the classroom are strongly connected to teaching. The questionnaire focussed on the methods below:

- Project-based learning

- Collaborative, cooperative methods based on group work

- Problem-based learning,

- Inquiry-based learning

- Frontal instruction

- Game-based learning

- Flipping the classroom.

We also studied the frequency these methods are used with during the daily teaching activity of the respondents. The answers reveal that the most frequently used methods are:
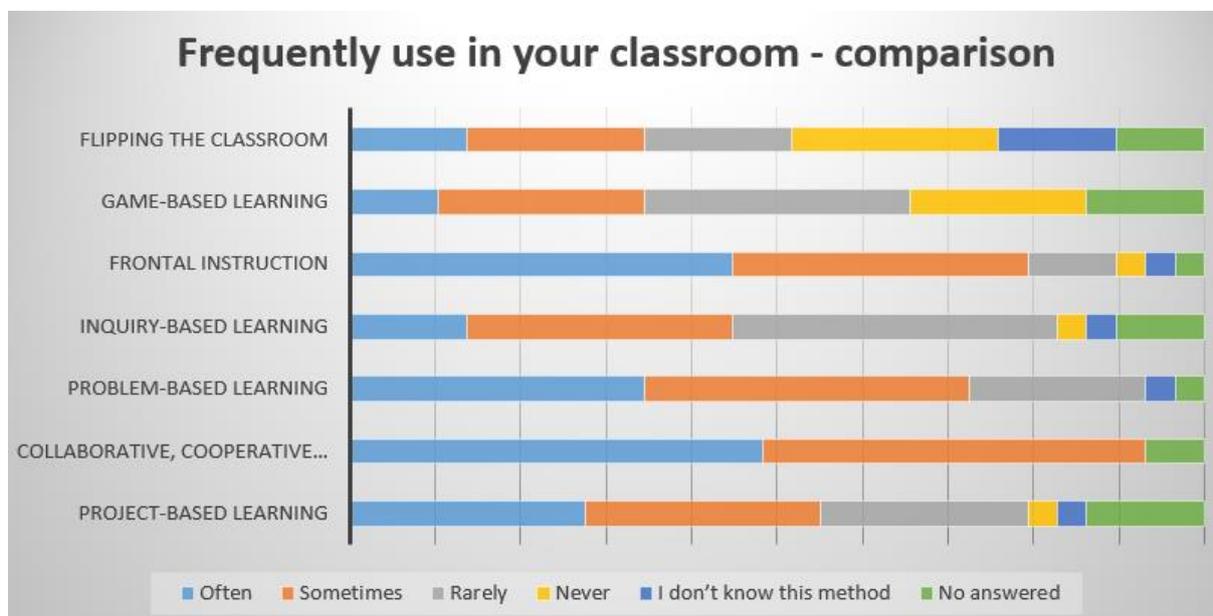
  o  Frontal instruction

  o  Collaborative, cooperative methods based on group work

  o  Problem-based learning

  o  Project-based learning

|  | Estonia | Hungary | Italy |
|---|---|---|---|
| Frontal instruction | 13 | 94 | 52 |
| Collaborative, cooperative methods based on group work | 14 | 82 | 28 |
| Problem-based learning | 10 | 48 | 19 |
| Project-based learning | 8 | 34 | 29 |

In Italy Game-based learning is rated high.

There are methods that are not known or very scarcely used in the country of the respondents, for example flipped classroom method.
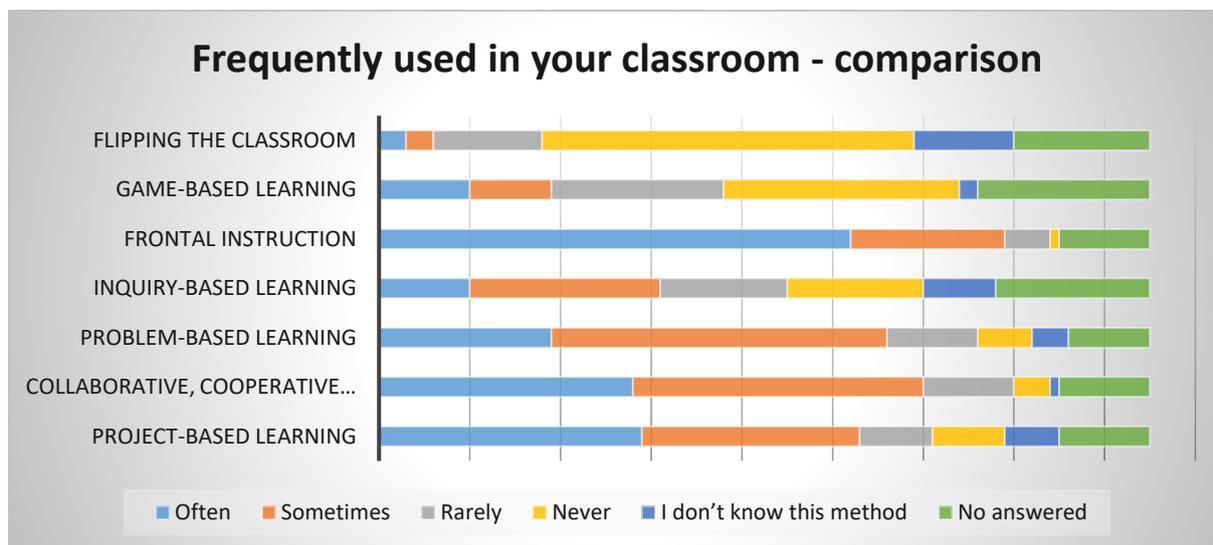
- *Estonia: The range of methodological opportunities used by the teachers shaped up nice. Collaborative and cooperative teaching methods are ahead of frontal teaching, and seem to be well-supported by inquiry- and game-based learning. The use of project- and problem-based learning is a bit lower. Interestingly, flipped classroom is rarely involved in classroom teaching:*



- *Hungary: Frontal instruction is still the leader, but collaborative and cooperative methods are also frequently applied. Some modern methods remain unknown or are rarely involved in classroom teaching.*
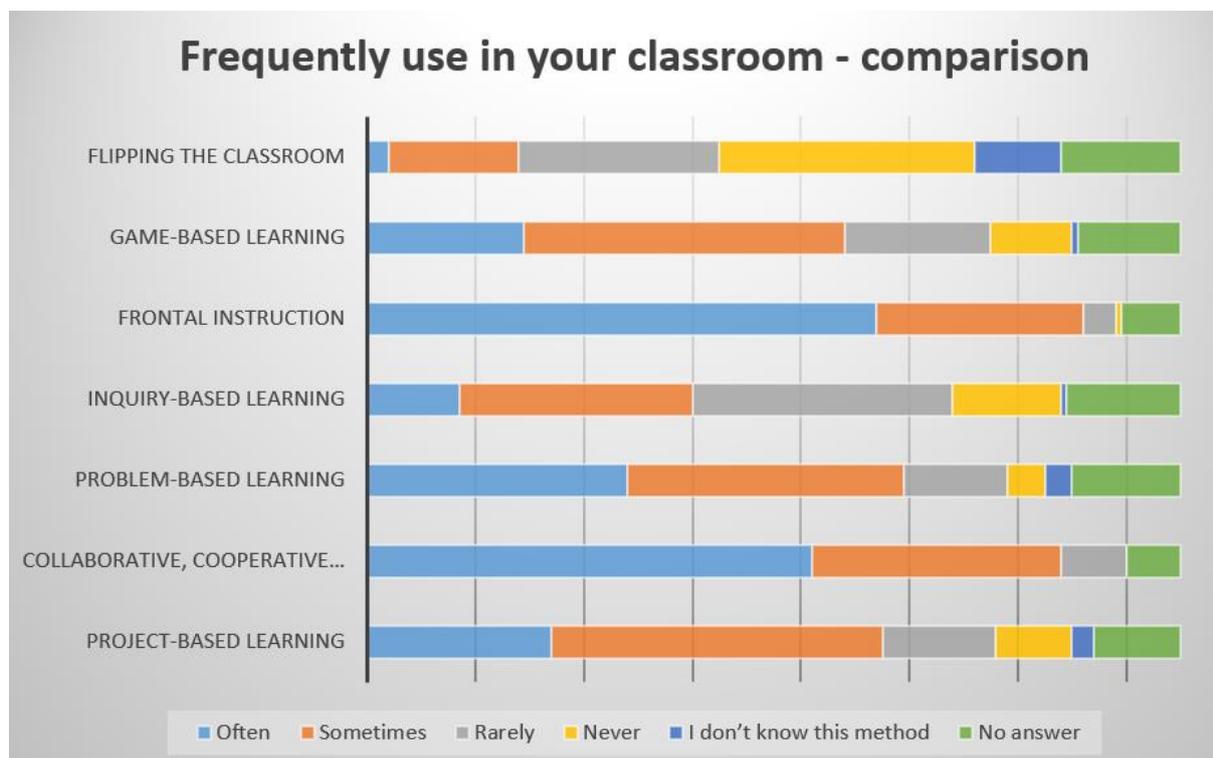
- *Italy: While some methods, such as game-based learning and flipped classroom are not known by a large portion of respondents, project-based, problem-based and collaborative learning are often used or sometimes by many respondents, which shows a strong interest in embedding practical elements in teaching. Frontal lessons are often used by 52 people and sometimes used by 17, scoring the 1st place among all teaching methods.*



## Frequently used in your classroom - comparison

Legend: Often, Sometimes, Rarely, Never, I don't know this method, No answered

Of the online tools used in the classroom respondents favour YouTube, Google Drive, Social Networks.

- *Estonia: the Google Drive is used by all the respondents. It is followed by the use of YouTube and some social networks, and Dropbox is also a popular choice. Some learning applications, Vimeo and the Google Classroom are also involved in teaching, while the other options are rarely used.*
- *Hungary: it is not surprising that the use of video sharing sites is frequent. It is followed by the use of social networks and Google Drive. The other options are rarely used.*
- *Italy: Most respondents only use 4 online tools: social networks, YouTube, Dropbox and Google Drive, while the other tools are almost never used.*

We also examined how willing the respondents are to improve their digital competences.

|  | Estonia |  | Hungary |  | Italy |  |
|---|---|---|---|---|---|---|
| No, because I'm a pro at ICT. | 5 | 17,2% | 4 | 2,7% | 8 | 9,4% |
| No, because I don't need it for my teaching. | 1 | 3,4% | 10 | 6,7% | 15 | 17,6% |
| Yes, because I am not skilled enough to match the needs of the new generation of students. | 8 | 27,6% | 53 | 35,3% | 17 | 20,0% |
| Yes, I always like to know the latest trends and improve myself accordingly. | 15 | 51,7% | 75 | 50,0% | 39 | 45,9% |
| No answer | 0 | 0,0% | 8 | 4,7% | 6 | 7,1% |
| Total | 29 |  | 150 |  | 85 |  |

Respondents are highly willing to develop their competences, most of them even if they already have the skills in question, because they are opened to novelties and renewing. We can consider this a great virtue.

- *Estonia: 19 of the 29 persons would like to take IT trainings. It is more than 65%. At the same time, only 48% gave their contact details.*
- *Hungary: 106 of the 128 persons would like to take IT trainings. It is more than 70%. At the same time, only 52% gave their contact details.*

- Italy: Only 58% of respondents is willing to take a course to update his/her ICT skills, and about 48% inserted a valid email address, so we can state that half of the respondents is a potential target for the REACTI-VET training course (O2).

The fourth part of the questionnaire focused on what activities are necessary to reduce the skill gaps.
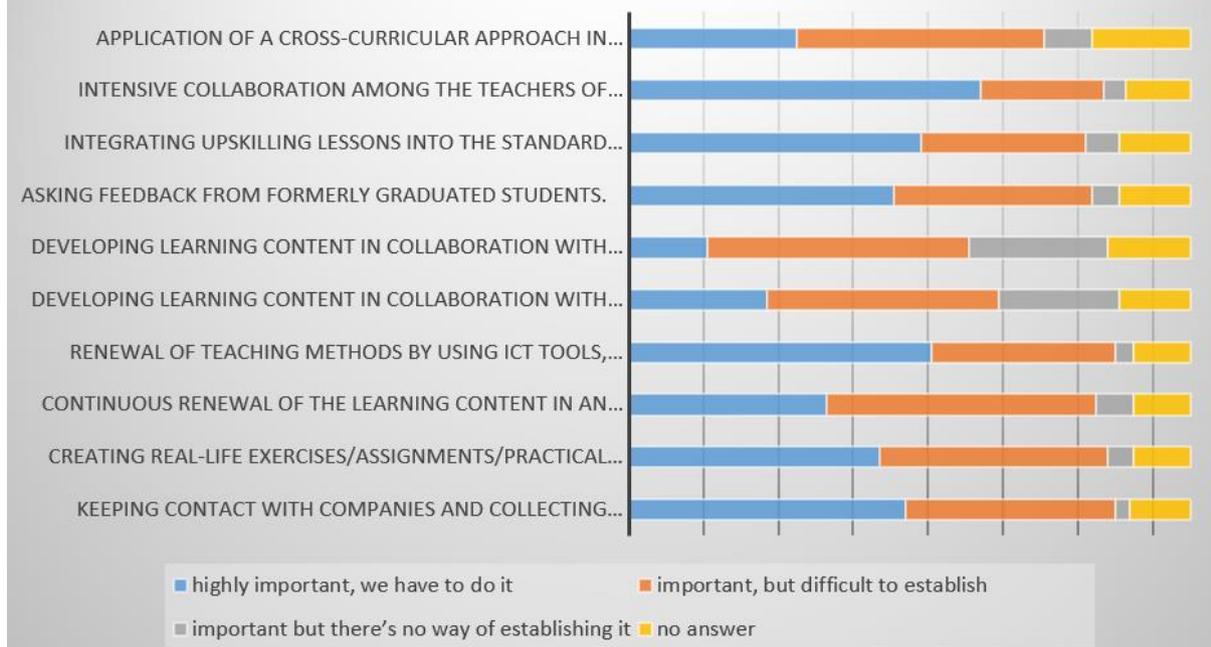
According to the survey the following results were found:

- *Estonia: According to the teachers, cooperation is important for overcoming skills gaps. It is true to all fields. The most difficult thing is to involve companies and parents into course material development.*
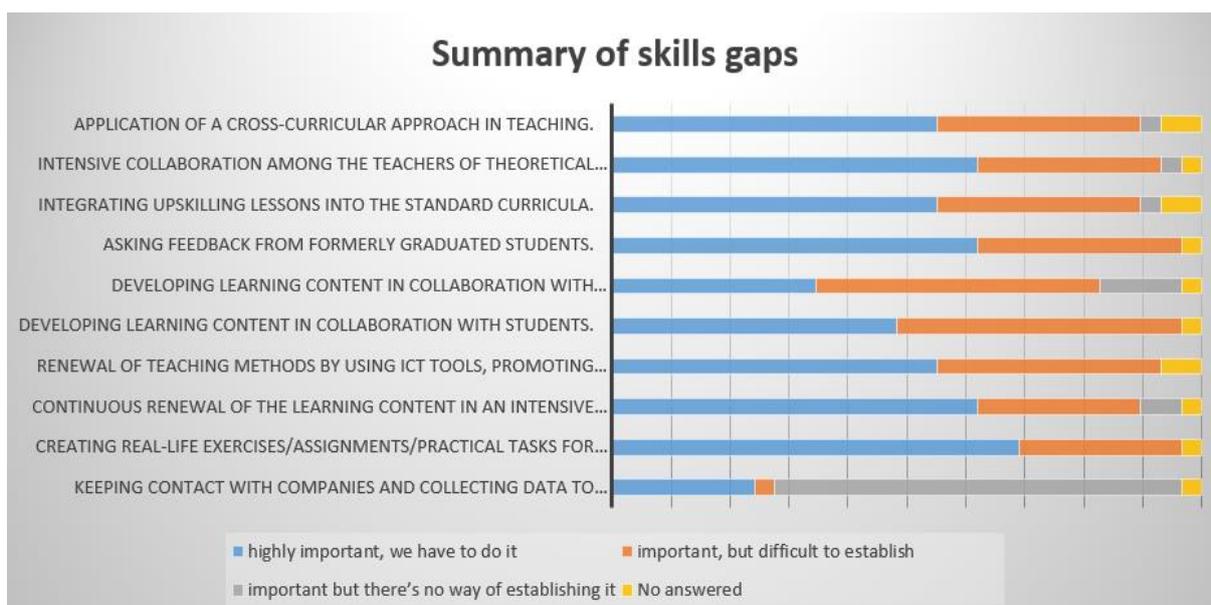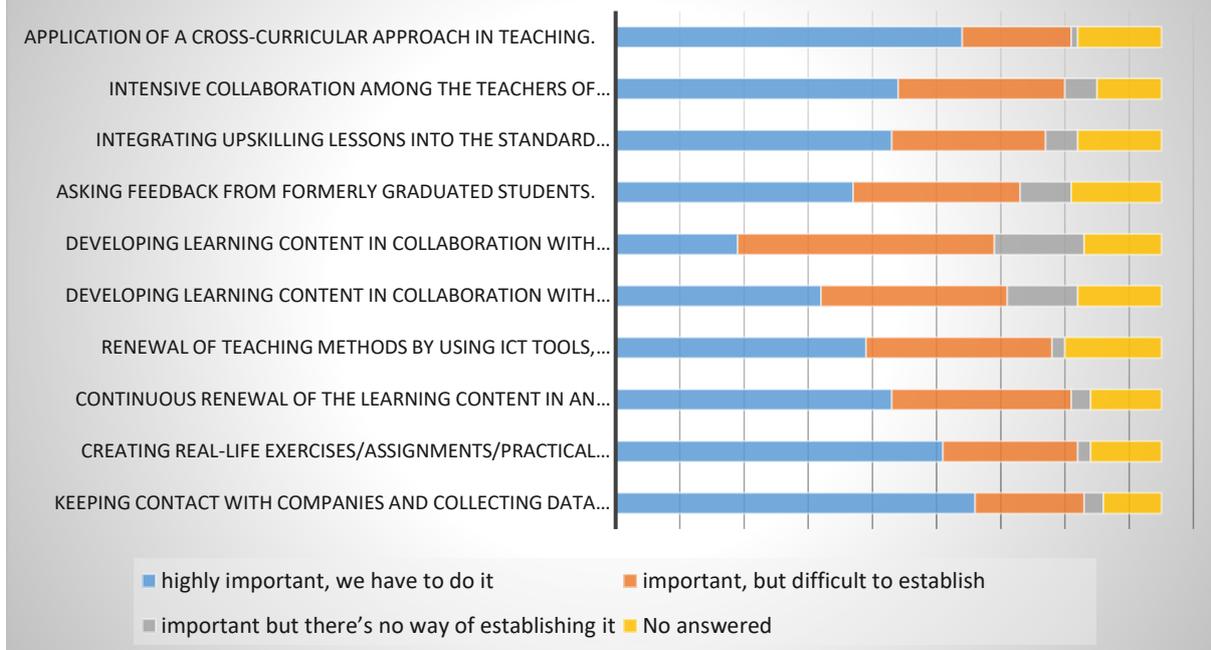


- *Hungary: According to the teachers, cooperation is important for overcoming skills gaps. It is true to all fields. The most difficult thing is to involve companies and parents into course material development.*

**Summary of skills gaps**

- APPLICATION OF A CROSS-CURRICULAR APPROACH IN…
- INTENSIVE COLLABORATION AMONG THE TEACHERS OF…
- INTEGRATING UPSKILLING LESSONS INTO THE STANDARD…
- ASKING FEEDBACK FROM FORMERLY GRADUATED STUDENTS.
- DEVELOPING LEARNING CONTENT IN COLLABORATION WITH…
- DEVELOPING LEARNING CONTENT IN COLLABORATION WITH…
- RENEWAL OF TEACHING METHODS BY USING ICT TOOLS,…
- CONTINUOUS RENEWAL OF THE LEARNING CONTENT IN AN…
- CREATING REAL-LIFE EXERCISES/ASSIGNMENTS/PRACTICAL…
- KEEPING CONTACT WITH COMPANIES AND COLLECTING…

■ highly important, we have to do it   ■ important, but difficult to establish
■ important but there's no way of establishing it   ■ no answer

- *Italy: The most important thing to do in order to reduce the skills gap is to "Keep contact with companies and collect data to identify the skill gaps" (it is also considered a feasible task), as well as to "Create real-life exercises/assignments/practical tasks for students in collaboration with companies".*

**Summary of skills gaps**

- APPLICATION OF A CROSS-CURRICULAR APPROACH IN TEACHING.
- INTENSIVE COLLABORATION AMONG THE TEACHERS OF…
- INTEGRATING UPSKILLING LESSONS INTO THE STANDARD…
- ASKING FEEDBACK FROM FORMERLY GRADUATED STUDENTS.
- DEVELOPING LEARNING CONTENT IN COLLABORATION WITH…
- DEVELOPING LEARNING CONTENT IN COLLABORATION WITH…
- RENEWAL OF TEACHING METHODS BY USING ICT TOOLS,…
- CONTINUOUS RENEWAL OF THE LEARNING CONTENT IN AN…
- CREATING REAL-LIFE EXERCISES/ASSIGNMENTS/PRACTICAL…
- KEEPING CONTACT WITH COMPANIES AND COLLECTING DATA…

■ highly important, we have to do it   ■ important, but difficult to establish
■ important but there's no way of establishing it   ■ No answered

The most difficult thing to put in practice is "Developing learning content in collaboration with companies or even parents", as well as "Developing learning content in collaboration with students". It is possible to say that collaborative development of contents is found to be difficult or impossible to put in practice by many respondents.

The next question that interest us, is do you have experience in curriculum and learning content development? The answers reveal that:

- *Estonia: Most of those teaching in vocational schools have contacts with companies or experts, and probably have up-to-date knowledge.*

  About 48% of the teachers keep regular contacts with companies, and more than 30% visit companies about once a year or a bit more rarely.

  More than 79% of the respondents had already taken part in curriculum development.

- *Hungary: Half of the respondents had already taken part in course material development.*

  Near half of those teaching in vocational schools have no contact with companies, and have no up-to-date knowledge.

  37% of the teachers have no appreciable contact with companies, but 41% gets to a company once a year.

- *Italy: Most respondents (63,5%) have experience in curriculum and learning content development.*

  A very high percentage of respondents have contacts with at least 1-2 experts. In fact, only 15,3% declare to have no contacts in private companies. This is encouraging as it is an asset that will be very useful for the development of upskilling curricula for students.

  48,2% of the teachers visited several times a year a corporate site for on-hand experience.

And finally, we got personal recommendations from the questionnaires.

Estonia: In the case of free suggestions, 41 persons answered, and 41% of the answers were substantive. The answers categories:

| |
|---|
| Conducting lessons in companies. Supervising and evaluating trainers hips at a trilateral placement. Less theory and more practice or practice. |
| Communication with employers and practice places. Feedback from trainees and alumni. |
| Modular curricula create great confusion; many grey areas between substances. |
| Entrepreneurs could go to school and definitely have more than one month. There have been benefits: entrepreneurs understand who we are doing at school today and usually don't want to come to school after teaching ... |
| Develop students' practical skills; create opportunities for this in schools, in cooperation with employers. |
| I feel a lack of cooperation. When students go to practice, they have an attitude- let, give. However, if you areas king people to take a practical day, you will find only a few. If people from companies are invited to a roundtable to discuss further, only a few will come. |
| Employers' attitudes towards today's learner and teaching. Improving cooperation and understanding. |
| "Schools must be flexible and responsive to the needs of the labour market. |
| Experts with business experience must teach. |
| Constant cooperation with companies and materials manufacturers. |

| | |
|---|---|
| cross-curricularspecialtyeducationcouldhelptoshapethebroaderprofile of the future employee; | |
| Learners attend internships in companies that give an overview of the real life in the labour market. | |
| An effective and fast response to labour market needs, not a stumbling block to law enforcement. Less commandment and greater teacher trust based on end result assessment. | |
| Keeping in touch with practitioners, we send pupils only to companies that work closely with the school, and we are confident that the students will be able to achieve the level they need when going to work | |
| Integrate more practical lessons into teaching. Leave the teacher more flexible (ie to mitigate rigorous curriculum monitoring), as the teacher in the field may have more insight into what needs to be learned, perhaps omitted from the curriculum or the curriculum includes outdated methodology. | |
| Organize student placements abroad to broaden their horizons | |

Hungary: In the case of free suggestions, 42 persons answered, and 40 of the answers were substantive. The answers grouped:

| | |
|---|---|
| Talks between companies and schools on more forums | 12 |
| Increasing the amount of practice by involving companies | 8 |
| Modern tools (ICT tools) into education | 8 |
| Guest teachers from companies to schools | 6 |
| ICT and methodological trainings for teachers | 6 |
| Involvement of companies into further teacher training | 5 |
| Reduction of load on teachers, increasing of teacher appreciation | 5 |
| Real language knowledge (jargon) | 3 |
| Involvement of teachers and students in company work | 2 |
| Self-knowledge of students | 2 |
| Change of attitude, 'trendy' curriculum | 2 |
| Interdisciplinary | 2 |
| Training enhancement (class 9, 10, 0) | 2 |
| Real exam tasks | 2 |
| Firm knowledge foundations | 1 |
| Involvement of students in course material development | 1 |
| Digital course materials | 1 |
| State subsidies for companies | 1 |
| Cooperative task solving | 1 |
| Teacher presentations at professional conferences | 1 |
| Gymnasium to every school | 1 |
| Quickly changeable course material modules | 1 |
| Lifelong guidance with companies | 1 |

Italy: Very few people wrote a free suggestion. Out of 9 answers only 8 are worth reporting and are listed below:

| | |
|---|---|
| Constant contact between teachers and companies | 1 |
| Internship designed by schools and companies together | 1 |
| Modern tools (ICT tools) into education | 1 |
| Transversal actions in educational paths to foster innovation | 1 |
| ICT and methodological trainings for teachers | 1 |
| Involvement of companies into further teacher training | 1 |
| More practical methodologies in class (project-based, etc. ) also involving companies | 1 |
| Encourage continuous update of teachers | 1 |

# Annex- Questionnaire for Teachers

Vocational schools have to meet two opposing requirements simultaneously: to remain true to tradition, delivering stable, tested knowledge approved by relevant parties in society and economy; and to equip students with a set of skills and competencies relevant to newly emerging demands of labor market.

How can we transform the strategies of vocational schools to be more labor market responsive? How could vocational schools prepare their students to meet the requirements of the rapidly changing technological environment in their future workplace?

These are the questions we want to answer in the Erasmus+ project of Reacti-VET. The Consortium will help teachers integrate a work-based, practice-oriented upskilling course into students' regular curriculum, in order to reduce the skill-gap.

We invite you to take part in our experiment by completing this questionnaire and later to join our online e-learning course as well. Thank you for assisting our work by answering the following questions.

## 1    PERSONAL DETAILS

### 1.1    GENDER?

- Male
- Female

### 1.2    COUNTRY?

- Estonia
- Hungary
- Italy
- Other: _____

### 1.3    HOW OLD ARE YOU?

- 20-29
- 30-39
- 40-49
- 50-59
- over 60

## 2    PROFESSIONAL BACKGROUND

### 2.1    HIGHEST LEVEL OF EDUCATION

- Upper secondary and post-secondary vocational non-tertiary education (ISCED 3 or 4)
- Short cycle tertiary education (ISCED 5)
- College: bachelor or equivalent (BSC/BA/BProf) in teacher education (ISCED 6)

- College: bachelor or equivalent (BSC/BA/BProf) in other profession (ISCED 6)
- University: master or equivalent (MSC/MA) in teacher education (ISCED 7)
- University: master or equivalent (MSC/MA) in other profession (ISCED 7)
- Doctoral or equivalent (ISCED 8)

## 2.2  HOW LONG HAVE YOU BEEN TEACHING (INCLUDING THIS SCHOOL YEAR)?

_____ years (numeric)

## 2.3  WHAT TYPE OF SCHOOL ARE YOU CURRENTLY TEACHING IN? (YOU CAN MARK MORE THAN ONE)

- Primary school or grammar school
- Vocational school
- Secondary technical school
- Higher education
- Adult education / enterprise
Other, please specify: _____

## 2.4  DID YOU WORK FOR COMPANIES IN THE FIELD OF YOUR SUBJECT/PROFESSION BEFORE STARTING TO TEACH?

- No, I've always been a teacher.
- Yes, I worked before starting to teach.
        years of work experience: _____
- Yes, even now I have a job in a company besides being a teacher.
        years of work experience: _____

## 2.5  WHICH SECTOR(S) DO THE SUBJECTS YOU TEACH BELONG TO?

- Foreign Languages
- Natural Sciences (Mathematics, Physics, Chemistry, Biology, Geography)
- Physical Education
- Social Sciences (History, Literature)
- Agriculture, Forestry and Fishing
- Mining and Quarrying
- Manufacturing
- Electricity, Gas, Steam and Air Conditioning Supply
- Water Supply; Sewerage, Waste Management and Remediation Activities
- Construction
- Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles
- Transportation and Storage
- Accommodation and Food Service Activities
- Information and Communication

- Financial and Insurance Activities
- Real Estate Activities
- Administrative and Support Service Activities
- Public Administration and Defence; Compulsory Social Security
- Education
- Human Health and Social Work Activities
- Arts, Entertainment and Recreation
- Other Service Activities

Other, please specify: _____

## 2.6   YOUR TEACHING ROLE IS

- Classroom teacher
- On-the-job tutor (or equivalent role)
- Both roles

## 3   ICT SKILLS AND ICT-BASED METHODS IN YOUR TEACHING

## 3.1   THE LEVEL OF YOUR ICT SKILLS IS

- Beginner
- Basic
- Advanced
- Professional

## 3.2   WHAT TYPE(S) OF DIGITAL LEARNING CONTENT(S) DO YOU CREATE, EDIT AND SHARE FOR YOUR LESSONS? (MULTIPLE CHOICE)

- Presentations (ppt)
- Online presentations (Prezi)
- Digital images
- Videos
- Animations
- Blogs
- Online concept maps/mind maps
- Digital timelines
- E-books with different embedded media elements
- Online quizzes
- Online tests

Other, please specify: _____

## 3.3   MARK THE ICT TOOLS YOU USE IN YOUR TEACHING

- Online tools for communication and collaboration with stakeholders (students, parents, companies)
  please specify: _____
- E-learning management system (such as Moodle) to support cooperative learning
  please specify: _____
- Online survey tools to get feedback from stakeholders (students, parents, companies)
  please specify: _____
- Web based application and platform for managing project work (eg. Trello, Microsoft Project)
  please specify: _____
- Open educational resources for your subject(s)
  please specify: _____
- Online tools for editing and sharing digital contents in teamwork with students
  please specify: _____

## 3.4   WHICH PEDAGOGICAL METHOD(S) DO YOU FREQUENTLY USE IN YOUR CLASSROOM?

- Project-based learning
- Collaborative, cooperative methods based on group work
- Problem-based learning
- Inquiry-based learning
- Frontal instruction
- Game-based learning
- Flipping the classroom

(Often, Sometimes, Rarely, Never, I don't know this method)

## 3.5   MARK THE ONLINE TOOLS YOU HAVE ALREADY USED

- Social networks (Facebook, LinkedIn)
- Google Classroom
- Google Drive
- Dropbox
- Redmenta
- LearningApps
- Infographic applications
- Youtube
- Vimeo
- Powtoon
- Symbaloo
- Protopage

Other, please specify: _____

## 3.6    ARE YOU OPEN TO IMPROVING YOUR ICT SKILLS?

- No, because I'm a pro at ICT.
- No, because I don't need it for my teaching.
- Yes, because I am not skilled enough to match the needs of the new generation of students.
- Yes, I always like to know the latest trends and improve myself accordingly.

In case of yes:

## 3.7    WOULD YOU JOIN A FREE ONLINE COURSE TO RENEW YOUR TEACHING METHODS?

- Yes, definitely.
- Possibly yes.
- No, thanks.

Please supply your e-mail address if you would like to be contacted by us once the enrolment to the training starts: _____
We will only use your e-mail address within the framework of the Reacti-VET project.

## 4    SKILL GAPS AND EFFORTS TO REDUCE THEM

## 4.1    DOES THE STANDARD CURRICULA FOLLOW THE TECHNOLOGICAL CHANGES IN PROFESSIONS?

- Not at all
- More or less
- The changes are too rapid to be followed by the standard curricula

## 4.2    WHAT ACTIVITIES ARE NEEDED TO REDUCE THE SKILL GAPS?

- Keeping contact with companies and collecting data to identify the skill gaps.
- Creating real-life exercises/assignments/practical tasks for students in collaboration with companies, instead of using exam papers from previous years for drilling.
- Continuous renewal of the learning content in an intensive collaboration of the teaching staff.
- Renewal of teaching methods by using ICT tools, promoting active learning in order to make teaching more effective.
- Developing learning content in collaboration with students.
- Developing learning content in collaboration with companies or even parents.
- Asking feedback from formerly graduated students.
- Integrating upskilling lessons into the standard curricula.
- Intensive collaboration among the teachers of theoretical and practical subjects
- Application of a cross-curricular approach in teaching

(1-highly important, we have to do it, 2-important, but difficult to establish, 3-important but there's no way of establishing it)

## 4.3 DO YOU HAVE EXPERIENCE IN CURRICULUM AND LEARNING CONTENT DEVELOPMENT?

- Yes, I have.
- No, I haven't.

## 4.4 HOW MANY COMPANY EXPERTS DO YOU KEEP CONTACT WITH TO BE UP-TO-DATE?

- I don't have contacts like this.
- I have 1-2 contacts like this.
- I co-operate with 3-5 experts.
- I regularly co-operate with 6 or more experts.

## 4.5 WHEN WAS THE LAST TIME YOU VISITED A CORPORATE SITE FOR ON-HAND EXPERIENCE?

- Several times a year
- At least once a year
- It happens very rarely
- Never
- Not relevant for me as I teach general subject

## 4.6 YOUR ADDITIONAL SUGGESTIONS ABOUT CLOSING THE GAP BETWEEN WHAT IS CURRENTLY OFFERED BY THE EDUCATION SYSTEM AND WHAT IS NEEDED IN THE JOB MARKET: