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## **BREATHE THE FUTURE-HYBRID EDUCATION IN VET**

**Project No: 2021-2-PL01-KA220-VET-000050664**

### **Hybrid Teacher Competence Questionnaire (HTC)**

**Diagnosis of competences of vocational education  
teachers conducting education in a hybrid form**

## **Manual**

**2024**



## Introduction

The project "Breathe the Future – Hybrid Education in VET – hVET" (project no. 2021-2-PL01-KA220-VET-000050664) is implemented under the Erasmus+ programme in the Vocational Education and Training sector. The hVET project is a response to emerging challenges and changing teaching paradigms – implementing hybrid learning in vocational education and training (VET), maintaining students' engagement and motivation, as well as replicating experiences in online classes. The aim of the project is also to support schools in planning future periods of remote or hybrid learning, structuring teaching practices, developing competences necessary to implement remote and hybrid learning and to close the digital divide. It is crucial to provide a structured VET learning environment in order to increase the digital skills of people in the sector.

The hVET project involves 6 partners from 5 European countries (Poland, Turkey, Cyprus, Portugal and Greece) – OIC Poland Fundacja Akademii WSEI (project leader) in partnership with: Instituto Politécnico de Santarém (Portugal), PROGRESS Kalińska, Talik spółka jawna (Poland), G.G. Eurosuccess Consulting Limited (Cyprus), Antalya İl Milli Eğitim Müdürlüğü (Turkey) and C.M. Skoulidi & Sia E.E. (Greece). These are organizations both within and outside the education sector, which ensures that the project brings together a variety of experts, organizations with diverse perspectives and resources to address complex educational challenges more effectively.

The project consortium focuses on innovation in the VET sector, improving the quality of vocational education, introducing a sensible approach to hybrid education in the VET sector, and provides the knowledge, skills, attitudes and values that VET teachers and students need to succeed at work and in society.

One of the results of the hVET project is the Hybrid Teacher Competence (HTC) Questionnaire - a tool for assessing the competences of VET teachers conducting hybrid education. This manual contains a detailed description of the rules for using this tool, which has been devised to support the development of VET teachers. It discusses methods of effective use of research results that can contribute to the improvement of pedagogical skills and substantive competences of teachers. In addition, the procedure for creating the questionnaire was presented, including the stages of its design and validation, which aimed to ensure its high quality and usefulness in educational practice. All the content has been developed to facilitate the implementation of the tool in the daily work of teachers and its effective use in the professional development process.

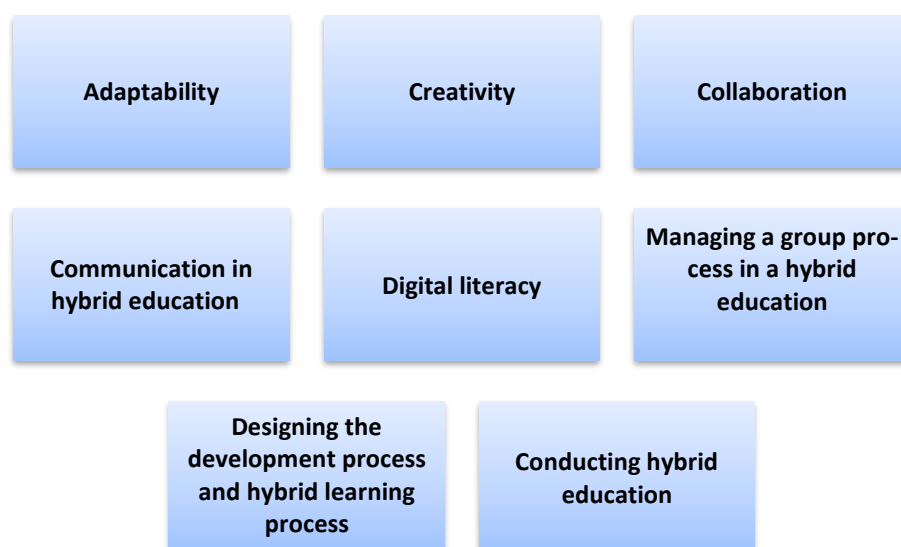
## I. Procedure of Testing with HTC Questionnaire

The Hybrid Teacher Competence (HTC) questionnaire is used to diagnose eight competences of vocational education teachers conducting classes in a hybrid form and is available only in the online version at:

<https://htc.oic.lublin.pl/>

in five language versions: Polish, Greek, Portuguese, Turkish and English. The questionnaire is intended for VET teachers and educators conducting or intending to conduct classes in a hybrid form. A hybrid learning environment means that some students receive instruction in the classroom, face-to-face, while others, at the same time, receive instruction outside the classroom, online.

The questionnaire diagnoses eight competences of a hybrid vocational education teacher, which have been distinguished on the basis of a literature review and the results of a survey of vocational education teachers.



Completing the test and receiving feedback is free of charge. After completing the test, the teacher receives a free, detailed report describing the level of competences along with tips to support their further development. The condition for obtaining reliable results and reliable feedback is to provide honest answers.

The Questionnaire homepage contains information about the tool:



The screenshot shows the homepage of the Hybrid Teacher Competence Questionnaire (HTC). The header includes the HYBRI logo, a European Union flag with the text 'Co-funded by the European Union', and a Creative Commons BY-SA license. Below the header, there are flags for Finland, Turkey, Greece, Poland, and the United Kingdom. The main content area is titled 'Hybrid Teacher Competence Questionnaire (HTC)' and 'Competence assessment tool for hybrid VET teacher'. It includes a welcome message, a description of the tool, and a button labeled 'I want to diagnose my competences'. Below this is a login section with a 'Token' input field and a 'Login' button. The footer contains logos for OIC, FUNDACIA ACADEMIE WSEI, PROGRESS, POLITÉCNICO DE SANTARÉM, and EUROSCIENCE.

A teacher who wants to take part in the survey should click on the icon: I want to diagnose my competences. Then a new window appears asking for basic information about the surveyed (name and surname – it will later appear in the automatically generated feedback on the test results, as well as the country and gender, which will be used to select the appropriate standards). At the same time, a token (a string of numbers and letters) appears in the upper right corner of the page, which can be used to sign in again and continue completing the test from where it was left off, or to display feedback again. You can enter the token on the home page in the bottom left corner of the page.



Save your token!

Your token: 1a531e24c083c769566a Logout

In order to generate the final report and to relate your results to norms, it is necessary to provide basic sociodemographic data:

\* Name

\* Country:

☐ Cyprus

☐ Greece

☐ Poland

☐ Portugal

☐ Turkey

☐ Other, which one?

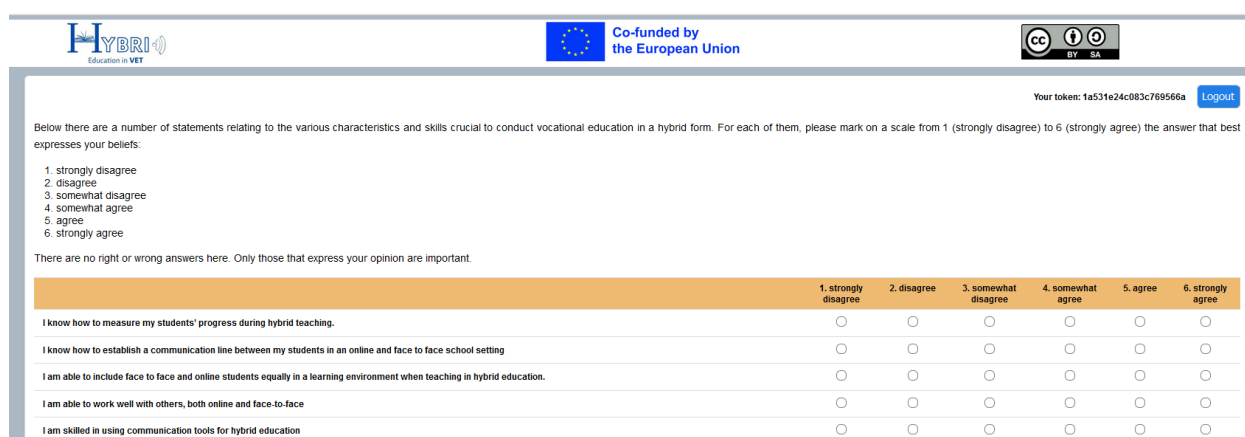
\* Gender:

☐ female

☐ male

Back Next

After filling in the data and clicking on the icon: Next, instructions for completing the questionnaire and the statements appear. For each of them, the respondent marks on a scale from 1 (strongly disagree) to 6 (strongly agree) the answers that best express his/her beliefs.



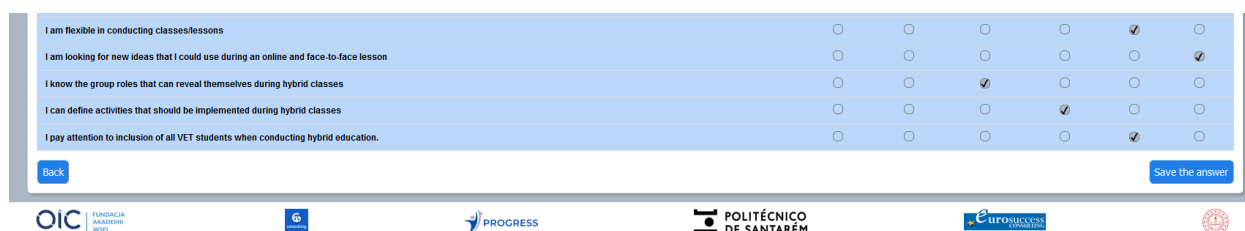
Below there are a number of statements relating to the various characteristics and skills crucial to conduct vocational education in a hybrid form. For each of them, please mark on a scale from 1 (strongly disagree) to 6 (strongly agree) the answer that best expresses your beliefs:

1. strongly disagree  
2. disagree  
3. somewhat disagree  
4. somewhat agree  
5. agree  
6. strongly agree

There are no right or wrong answers here. Only those that express your opinion are important.

	1. strongly disagree	2. disagree	3. somewhat disagree	4. somewhat agree	5. agree	6. strongly agree
I know how to measure my students' progress during hybrid teaching.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I know how to establish a communication line between my students in an online and face to face school setting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to include face to face and online students equally in a learning environment when teaching in hybrid education.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to work well with others, both online and face-to-face	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am skilled in using communication tools for hybrid education	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

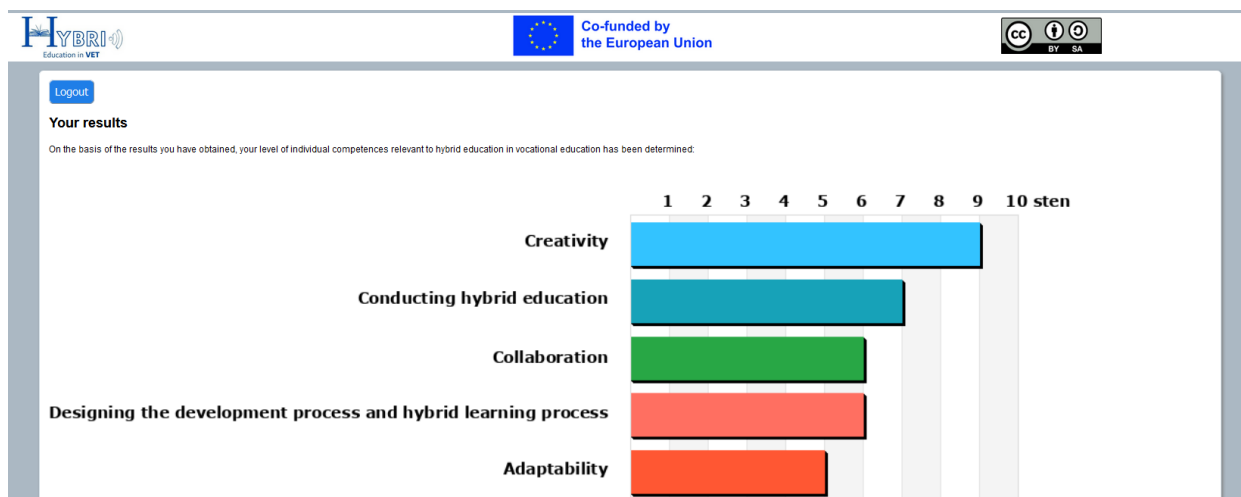
The list of statements is on two pages, after answering the first set of statements, click Next and respond to the next statements. Finally, after selecting all the answers, click on the icon: Save the answer.



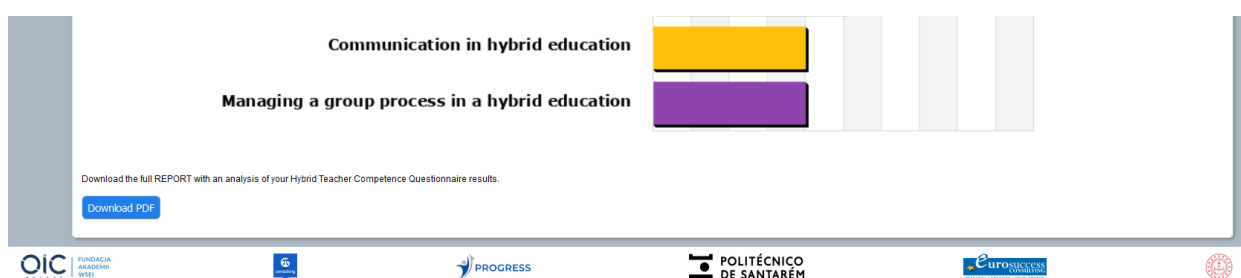
I am flexible in conducting classes/lessons	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
I am looking for new ideas that I could use during an online and face-to-face lesson	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
I know the group roles that can reveal themselves during hybrid classes	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can define activities that should be implemented during hybrid classes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
I pay attention to inclusion of all VET students when conducting hybrid education.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Back Save the answer

A page with a summary of the subject's results will appear. The bar graph shows the level of eight competences, from the highest to the lowest (the results are expressed on a sten scale, which ranges from 1 to 10).



In the bottom left corner of this page you will find the information: Download the full REPORT with an analysis of your Hybrid Teacher Competence Questionnaire results and the icon: Download PDF.



After clicking on the icon: Download pdf, the system will generate full feedback on the level of competences important in conducting classes in the hybrid form of the surveyed teacher. The pdf file will be displayed in the browser window and/or saved on the disk, in the place indicated by the user of the device on which the test was performed.

## II. Use of the results of the HTC Questionnaire

The system automatically generates feedback on the competences of the teacher being tested. The title page of the report contains the name of the Questionnaire, the name and surname of the respondent, provided at the beginning of the survey and the date of completing the Questionnaire.

The feedback includes:

- Description of the competences diagnosed by the Questionnaire;
- Results of the surveyed person – levels of individual competences along with their descriptions;
- Comparison of the results of the respondent with the results of teachers conducting hybrid education for at least one year – on this basis, the so-called competence gaps and development tips were determined;
- Description of possible further development steps based on the results of the survey;
- Brief description of the procedure for creating the Questionnaire;
- List of project partners with contact details.

A sample report from the study is included at the end of the Manual.

The diagnosis of competences essential for conducting hybrid education in vocational education and training using the HTC Questionnaire is a comprehensive tool that not only enables the assessment of competences, but also provides a foundation for planning further development. This process gives you a chance to deepen your self-awareness, allowing you to better understand your own resources and areas that need strengthening. This makes it possible to plan development activities and properly prepare for the specific requirements of hybrid education, which combines elements of traditional teaching with modern technologies.

The feedback generated by the computer system, based on the test results, provides detailed guidelines that can be used to create an individual competence development plan. A key step in this process is a thorough analysis of the results obtained, starting with identifying the strengths of

the respondent. These are primarily areas in which the surveyed person achieved high scores in the test. These competences provide a solid basis for further action and development.

In order to use the results effectively, it is also worth analysing the previous experience and resources of the respondent, which may be important for conducting hybrid education. In addition to the competences diagnosed by the HTC Questionnaire, other strengths should be taken into account, such as:

- Professional experience – e.g. conducting online classes, organising hybrid training, managing learning platforms;
- Education – fields of study related to education, pedagogy, educational technologies or management in education are particularly important;
- Completed courses and trainings – e.g. in the field of remote or hybrid learning methodology, use of technological tools, design of interactive teaching materials, etc.;
- Personality traits – such as openness to change, ability to work in a team, ability to solve problems independently or high motivation to learn.

Next, average and low results should be analysed and the size of the gaps assessed, i.e. the differences between the desired level of competence, estimated on the basis of the results of surveys of teachers with at least one year of experience in conducting hybrid education, and the current level of competence. It is worth reading the development suggestions included in the second part of the feedback. On this basis, a list of development tasks should be devised that will be undertaken in order to best prepare for conducting hybrid education.

This list should include specific actions, specify their implementation time and identify people or institutions that can provide support. Examples of activities can be:

- participation in courses, trainings and workshops;
- use of mentoring or coaching;
- reading specialist literature and proven online resources.

The implementation of these activities should be planned in detail, taking into account the available opportunities and the individual development needs of the teacher.



It is also worth reaching out to a methodologist, an experienced hybrid education teacher, a career counsellor, a mentor or a psychologist who can offer support in transforming the feedback obtained into specific development activities. These professionals can help you understand the test results, identify priority areas for improvement, and suggest development strategies tailored to your individual needs.

A methodologist or an experienced hybrid education teacher can share practical tips on planning and conducting classes, taking into account the specifics of hybrid learning. A career counsellor or mentor can support you in building a career development path, helping you choose training, certifications or experiences that will increase your competences. A psychologist, in turn, can help you cope with emotional challenges related to, for example, the need to adapt to new forms of teaching or stress management when introducing changes at work. Using such support allows you to better understand your strengths and weaknesses, plan development activities more effectively and implement them in practice, maximising the chances of success in conducting hybrid education.

The analysis of the test results should be complemented by a reflection on the previous achievements, the resources available and the areas requiring development. This approach allows for a holistic view of the teacher's preparation for conducting hybrid education and planning further development steps.

### III. Psychometric procedure for creating the HTC Questionnaire

A standard psychometric procedure commonly used in creating psychological diagnostic tools was used in the development of the HTC Questionnaire (cf. Hornowska, 2018; Mańkowska, 2010; Fronczyk, 2009).

The competence of a vocational education teacher is defined as a set of observable characteristics: knowledge, skills, attitudes and abilities, personality traits that enable the educator to effectively conduct VET hybrid education. Competencies understood in this way can be measured, developed and improved through the acquisition of experience, practice, training or other forms of development.

The competency profile of VET hybrid educator presented below, which is the basis for the development of the HTC Questionnaire, has been developed based on a literature review and the results of VET educators' and educators' research carried out at the beginning of the project hVET in five partner countries (Cyprus, Greece, Portugal, Poland, Turkey). In total, 110 VET educators participated in the surveys and 23 VET educators in the focus group interviews. This research was carried out in the academic year of 2022/23

Eight identified key competences of a vocational education teacher:

1. **Adaptability** – it is the ability to effectively adapt to changing educational conditions and adjust to meet the educational goal, both for online and face-to-face learners (to make appropriate educational decisions, balance three elements: online and face-to-face education as well as individualization of learning). It is also the ability to manage change and respond adequately to it, including coping with difficulties and mental resilience. It also includes curiosity and openness to new ideas, willingness to implement innovative procedures, new methods and forms of teaching in order to be flexible and work effectively in the field of VET education. (cf. Dainty et al., 2005a, 2005b; Muzio et al., 2007; Erarslan, 2023; Da'as, 2019; Crary, 2019; Gastager et al., 2022).
2. **Creativity** – ability to generate ideas, problem solutions, or insights that are novel and appropriate. Taking initiative and innovative actions in VET education. Ability to use a wide range of techniques to generate new and valuable ideas. It is also the ability to think critically and solve problems - ability to identify key components of the problem, to collect and analyse data in order to find a solution or solutions (cf. Runco, 2004; Calavia et al., 2021).

3. **Collaboration** – ability of working in cooperation with online and face to face students, the school leaderships and companies towards a common educational goal. Working together to reach a goal – putting talent, expertise and smarts to work (ability to work effectively and respectfully with diverse perspectives). Maintain effective lines of communication with the school leaderships and the companies is also an essential skill that the VET teacher must have to improve teaching, taking in account both the needs of VET learners and the companies where they are going to work (cf. Dainty et al., 2005a, 2005b; Muzio et al., 2007).
4. **Communication in hybrid education** – comprises adequate written and verbal communication with online and face-to-face learners. It also involves listening skills and proper application of all available communication tools in hybrid education. Moreover, it involves understanding of communication differences, identifying factors which may become a barrier for educational success. Communicating is essential for clear passing assignments and providing instructions for both group of learners (cf. Bjekić et al., 2020; Etzold & Krüger, 2021).
5. **Digital literacy** – pedagogical competence to use ICT tools in hybrid VET education; knowledge of modern technologies improving the teaching process. To be confident, critical and responsible use of, and engagement with, digital technologies for teaching. Know and creatively use distance communication online platforms, digital tools and apps to support teaching and learning in hybrid education (cf. Falloon, 2020; Potyrała & Tomczyk, 2021).
6. **Managing a group process in a hybrid education** – effective shaping of the course of processes, phenomena, events, effects in a group of learners as well as the behaviour of learners online and face to face, so as to achieve the planned didactic goals. Being attentive to what is happening in the group (e.g. body language of learners online and face-to-face, their activity in class) and the ability to coordinate the work of the class team and the remote learning learner. Ability to guide and motivate trainees (cf. Tuckman, 1965; Thomas, 2009; Kozak, 2010).
7. **Designing the development process and hybrid education proces** – the ability to design an educational process and a VET lesson plan adjusted to the specificity of hybrid education. Knowledge of forms and methods of hybrid education and the ability to adapt traditional methods to the specificity of hybrid education. Ability to define activities and build contents for both learner groups. Knowledge of techniques to make hybrid learning relevant to the goal (cf. Kozak & Łaguna, 2015; Żak & Matras, 2018).

8. **Conducting hybrid education** – effective implementation of the VET education lesson plan in a hybrid form. Ability of activating different teaching methods and techniques for both face-to-face as well as online learners at the same time. Ability to build cooperation and support communication between two groups of learners (cf. Kozak & Łaguna, 2015; Żak & Matras, 2018).

For each defined competence, a group of experts created experimental test items (statements), which were then analysed in terms of content. A total of 366 statements were developed. Statements that were repeated or statements that did not fit the previously proposed definition have been removed. The 237 extracted statements were then submitted for evaluation to twenty-two competent judges. The judges were asked to evaluate each statement in terms of its usefulness in diagnosing the individual competences in the newly developed test. Their task was to take into account the definition of competence and evaluate each statement on a scale from 1 to 7, where 1 - completely incorrect/useless, 7 - completely correct/useful. On the basis of the judges' evaluation, 80 statements (10 statements for each competence) the highest rated by competent judges (with the highest content accuracy and the average judges' ratings above 6) were selected.

The questionnaire prepared in this way (in electronic, online version) was provided with instructions for answering and a metric. Initial tests with the new questionnaire were carried out between November 2023 and June 2024. 380 vocational education teachers from 4 countries were surveyed: 67 from Greece, 75 from Poland, 56 from Portugal and 182 from Turkey, including 61 teachers experienced in conducting hybrid education (based on the results of their surveys, a standard was developed – the optimal level of competence of a teacher conducting hybrid education).

In order to check the structure of the test, a series of psychometric analyses were performed, which allowed to create the final version of the questionnaire. The final version of the Questionnaire consists of 40 statements – 5 statements assigned to each competence.

Reliability coefficients (Cronbach's  $\alpha$ ) were calculated for the test scales, which range from 0.78 to 0.96 for the individual scales, which indicates high reliability of the Questionnaire. The table below presents the reliability coefficients of the Questionnaire scales for the individual language versions – Greek (GR), Turkish (TR), Polish (PL) and Portuguese (PT), and the Questionnaire as a whole – pan-European version (EU).

Competence	EU	GR	TR	PL	PT
<b>Adaptability</b>	.89	.93	.88	.89	.90
<b>Creativity</b>	.88	.91	.88	.89	.89
<b>Collaboration</b>	.85	.88	.85	.82	.78
<b>Communication in hybrid education</b>	.89	.90	.90	.85	.88
<b>Digital literacy</b>	.90	.95	.87	.90	.91
<b>Managing a group process in a hybrid education</b>	.91	.92	.91	.89	.92
<b>Designing the development process and hybrid learning process</b>	.93	.96	.93	.88	.94
<b>Conducting hybrid education</b>	.93	.94	.93	.92	.93

Standards have also been developed – an important element in the process of interpreting psychometric test results, as they enable the comparison of individual results with the results obtained by appropriately selected reference groups. The developed standards allow for the transformation of the raw result of the surveyed teacher into a converted result, which allows for a more precise assessment of the level of competence of the surveyed person in comparison to other teachers (cf. Hornowska, 2018).

In psychometric practice, various scales are used to express converted results. In the case of the HTC Questionnaire, a ten-point sten scale was used, thanks to which it is possible to interpret the results in the following categories:

- Low scores – range from 1 to 4 sten;
- Average scores – range from 5-6 sten;
- High scores – range from 7 to 10 sten.

In addition to the standards, it is possible to calculate gaps, i.e. differences between the desired and current level of competence of the surveyed person. The desired level was calculated on the basis of surveys carried out among 61 teachers experienced in conducting hybrid education.

The value of the standard is the third quartile (Q3) of the results obtained by the group of these teachers.

Competence	Standard
<b>Adaptability</b>	8 sten
<b>Creativity</b>	8 sten
<b>Collaboration</b>	8 sten
<b>Communication in hybrid education</b>	7 sten
<b>Digital literacy</b>	8 sten
<b>Managing a group process in a hybrid education</b>	8 sten
<b>Designing the development process and hybrid learning process</b>	8 sten
<b>Conducting hybrid education</b>	8 sten

The result of the psychometric procedure used is a diagnostic tool that is distinguished by its high quality and effectiveness in assessing teachers' competences – it is accurate in terms of content, reliable, normalised, objective and standardised. This tool has been carefully developed to provide accurate and reliable information on teachers' competences relevant for hybrid education in vocational education and training.

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**ANNEX. Sample report from the testing with the HTC Questionnaire**

# **Diagnosis of competences of vocational education teachers conducting education in a hybrid form**

## **Hybrid Teacher Competence Questionnaire (HTC)**

**John Smith**

**Date of completion of the questionnaire: 17.12.2024**

A hybrid model of education is where some students take part in classroom in-person learning, while others learn outside the classroom online at the same time, from anywhere.

The success of professional hybrid education depends mainly on the competence of the teacher who conducts such classes. The following competence profile of a hybrid vocational education teacher has been developed on the basis of a literature review and the results of survey research on vocational education teachers.

**Adaptability**

**Creativity**

**Collaboration**

**Communication in hybrid education**

**Digital literacy**

**Managing a group process in a hybrid education**

**Designing the development process and hybrid learning process**

**Conducting hybrid education**

To support you in planning the development of competences relevant to conducting hybrid classes, OIC Poland Fundacja Akademii WSEI (project leader) in partnership with: Instituto Politécnico de Santarém (Portugal), PROGRESS Kalińska, Talik spółka jawna (Poland), G.G. Eurosuccess Consulting Limited (Cyprus), Antalya İl Milli Eğitim Müdürlüğü (Turkey) and C.M. Skoulidi & Sia E.E. (Greece) have developed the HTC Questionnaire. Knowing your level of competence will allow you to take action to eliminate the identified competence gaps, and thus properly prepare for hybrid education.

The Hybrid Teacher Competence Questionnaire (HTC) measures the level of eight competences (indicated above) of vocational education teachers who provide education in a hybrid form.

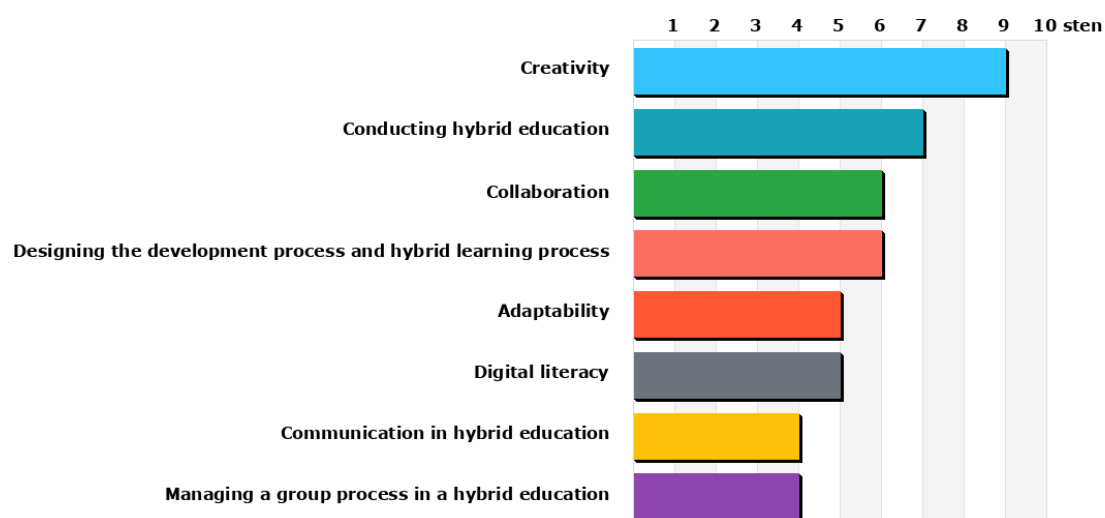
## YOUR RESULTS

The questionnaire you have completed examines the competences of vocational education teachers providing education in a hybrid form. The following conclusions are based on your answers and are only credible if they are honest. It should also be noted that each survey is burdened with error.

The interpretation of your results consists of two parts. In the first part, your answers are compared with those of other vocational education teachers (representative sample) and your level of competences has been determined. In the second part, your results were compared with the results obtained by teachers who have conducted hybrid education for at least a year.

### Part I

Based on the results you have obtained, the level of your individual competences relevant to hybrid education has been determined:



Comparing your answers with a representative group of vocational education teachers, you have a high level of the following competences:

## Creativity

You are characterized by an imaginative, creative approach to conducting educational classes. You can easily generate ideas, solutions to problems, or insights that are novel in conducting hybrid education. You take initiatives and innovative activities in vocational education, look for novelties, think outside the box and act in an unconventional way.

## Conducting hybrid education

You are highly effective in implementing a vocational education lesson scenario in a hybrid form. You are great at activating different methods and teaching techniques at the same time – for both in-person and online learners – so as to include and engage all learners.

You have an average level of the following competences:

## Collaboration

You are reasonably good at building cooperation with online and in-person students during hybrid classes in order to achieve a common educational goal. You can usually promote working together to achieve a goal – to use talent, knowledge and cleverness for work. You have an average ability to maintain effective lines of communication with other teachers, school headmasters and companies to improve hybrid learning, taking into account both the needs of vocational school students and the companies where they will work.

## Designing the development process and hybrid learning process

You are reasonably good at developing an educational process and preparing a scenario of a vocational lesson adapted to the specifics of hybrid education. You are quite familiar with the forms and methods of hybrid education and are rather able to adapt traditional methods to the specifics of such education. You have an average knowledge of techniques that allow you to adapt hybrid learning to the educational goal.

## Adaptability

You tend to do well adapting to changing conditions to achieve your educational goal. This applies to both online and in-person learners. You are reasonably good at managing change and responding to it appropriately. You are characterized by an average readiness to implement innovative procedures, new teaching methods and forms to be flexible and effective in the field of vocational education and training in a hybrid form.

## Digital literacy

You have an average level of knowledge of modern technologies that improve the hybrid learning process (including creating digital materials, evaluating and measuring students' educational progress). You are reasonably good at using online platforms, tools and digital applications for distance communication to support teaching and learning in hybrid education.

You have a low level of the following competencies:

## Communication in hybrid education

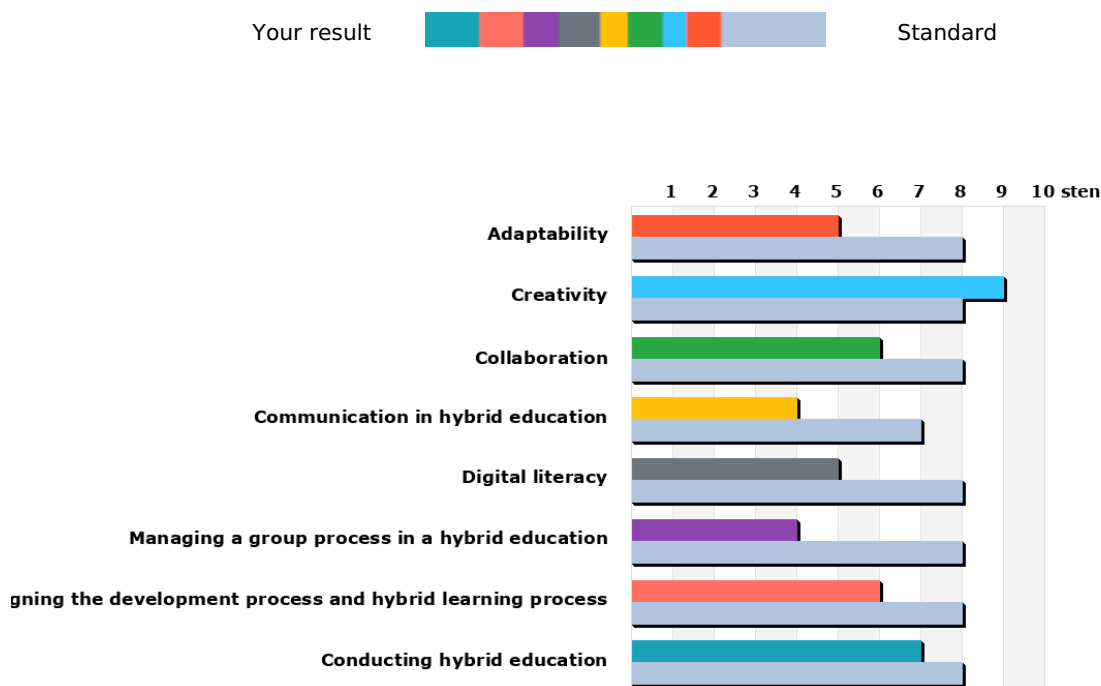
You lack the skills to communicate effectively in writing and verbally with online and in-person learners, and to actively listen and properly use all available communication tools in hybrid education. It is difficult for you to understand the differences in communication styles and identify factors that can become a barrier to educational success. You may also find it difficult to provide clear information about assignments as well as give instructions to both groups of students in hybrid education.

## Managing a group process in a hybrid education

You may have difficulties in shaping the course of processes, phenomena, events, effects in a group of students and the behaviour of online and in-person students, so as to achieve the set learning goals. You lack the ability to coordinate the work of the class team and remote learners, as well as to guide and motivate students.

## Part II

By comparing your results with the results obtained by teachers who have been conducting hybrid education for at least a year, the so-called gaps have been identified - i.e. the differences between the desired and the current level of your competences. This is information on the level at which your competences should be developed to increase the likelihood of success in conducting hybrid education.



In order to increase your chances of success in hybrid education, we suggest you take action and/or participate in training in the following areas/topics:

### Adaptability

It would be good for you to take care of the development of adaptation skills and to look positively at the changes. Try to look at hybrid education as a chance and opportunity for development. Look for as many opportunities as possible to practice flexibility, such as teaching the same classes in different ways and using different methods or forms of work.

### Collaboration

It is worth promoting cooperation and combining different perspectives, views and many stakeholders (students, teachers, headteachers, companies) in the implementation of a common educational goal. Build relations and networks and use them for the benefit of students and their future employers. It is a good idea to



take part in networking events, conferences organized by employers' associations, etc.

## Communication in hybrid education

You need better ability to communicate with two groups of students at the same time – online and in-person. It is worth expanding your knowledge of non-verbal, verbal and written communication and the principles of avoiding communication barriers, especially in the context of contacts with students connecting online during hybrid classes.

## Digital literacy

It is worth familiarizing yourself with the many available ICT solutions that support hybrid education. You can also take part in training on modern technologies in education.

## Managing a group process in a hybrid education

You need more knowledge about the group processes that take place during hybrid education. Emotions, interactions, specificity of communication, emerging technical problems significantly affect the behaviour and motivation of students. It is worth learning the working methods related to managing the dynamics of a hybrid group.

## Designing the development process and hybrid learning process

It would be good for you to focus more on adapting lesson plans to the specifics of hybrid education – simply transferring classroom or online lesson scenarios does not work. Work on diversifying the forms and methods of work that are appropriate for both groups of students. It is also worth getting more familiar with the specifics of hybrid education.

## Conducting hybrid education

Work on better effectiveness in the implementation of planned hybrid lessons. Pay more attention to the inclusion of online and in-person learners, engage them, and build collaboration and communication space between them.

It is worth taking part in the asynchronous online trainings that we have developed for teachers: **Hybrid teaching - professional certification course for VET teachers.**

### Hybrid teaching - professional certification course for VET teachers

To develop and strengthen your competences, you can also use the help of an experienced teacher, methodologist, mentor or coach. It is also worth reaching for professional literature and proven resources available on the Internet. Please note that the results generated by the tool are indicative only. In order to comprehensively diagnose your preparation for hybrid education, it is worth contacting a methodologist, career counsellor, psychologist or coach. You can take advantage of such help in various institutions supporting the work of teachers and organizing professional training for teachers.

### WHAT'S NEXT?

Diagnosis of competences important in conducting hybrid education in vocational education and training with the use of the HTC Questionnaire gives the opportunity to deepen self-awareness, plan development activities and properly prepare for this form of teaching. The feedback generated by the computer system can be used to develop an individual competence development plan. The starting point should be a list of your strengths (high scores obtained in the test). Analyse your results and list all your resources that the test diagnosed. In addition, list your strengths (e.g. experience in conducting online education, your education, methodological courses and training, personality traits, etc.) that may be relevant to conducting hybrid education.

Then analyse the average and low results and the size of the gaps - the differences between the desired level, estimated on the basis of the results of the surveys of teachers who have been conducting hybrid education for at least a year, and the current level of your competences. Read the development suggestions from the second part of the feedback. On this basis, make a list of development tasks that you will undertake to best prepare for hybrid education. Write down specifically which actions you will take, when and who can support you. Examples of activities can be: participation in trainings and workshops, mentoring or coaching, reading professional literature and proven resources available on the Internet.

It is also worth contacting a methodologist, an experienced hybrid education teacher, a career counsellor, a mentor or a psychologist who can help you make the best use of the feedback obtained after the test for your own development.

## HOW WAS THE QUESTIONNAIRE CREATED?

The Hybrid Teacher Competence Questionnaire was developed using a standard psychometric procedure commonly used to develop psychological diagnostic tools.

At the beginning of work on the new test, based on the analysis of literature and surveys among teachers from Cyprus, Greece, Poland, Portugal and Turkey, a list of competences important in conducting hybrid education was identified. For each defined competence, a group of experts created experimental test items, which were then analysed in terms of content. Repeated statements or statements that did not fit the previously proposed definition have been removed. The remaining statements were then forwarded to twenty-two competent judges for evaluation. The judges were asked to evaluate each statement in terms of its usefulness in diagnosing the individual competences of the newly built test.

The questionnaire prepared in this way (in electronic online version) was provided with instructions for answering and a metrics. Initial testing with the new test were carried out between November 2023 and June 2024. 380 vocational education teachers from 4 countries: Greece, Poland, Portugal and Turkey were surveyed, including 61 teachers experienced in conducting hybrid education.

In order to check the structure of the test, a series of psychometric analyses were performed, which allowed to build the final version of the questionnaire. It consists of 40 statements. The content validity of the test was confirmed. For the test scales, reliability indices (Cronbach's  $\alpha$ ) were calculated, which range from 0.85 to 0.93 for individual scales, which indicates high reliability of the questionnaire.

Standards have been developed to convert an individual test score into a derived score, as well as to interpret it in terms of low (1-4 sten), average (5-6 sten) and high (7-10 sten) results. In addition to the norms, it is possible to calculate gaps, i.e. differences between the desired and current level of competence of the surveyed. The desired level was calculated on the basis of the results of teachers experienced in conducting hybrid education. The value of the standard is the third quartile (Q3) of the results obtained by the group of these teachers.

The effect of the psychometric procedure used is a content-accurate, reliable, standard, objective and standardized tool for assessing teachers' competences, important in conducting hybrid education in vocational education and training.



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