



BASELINE: research and analysis of the current situation of digital readiness of VET schools

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Contributors:

Anna Stefanowicz-Kocol

Aneta Grochowska

Dariusz Dudzik

Biljana Trajkoska

Irena Pipidjanoska

Hristijan Jordanoski

Marjan Naumoski

Simona - Florentina Stoica

Adina -Elena Bîrsan

Mihaela Căpățână

Carmen Cojocar

Eleny Cojocar

Angelica Maria Valls

Maria Rosario Navarro

Nuno Almeida Ribeiro

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Chapter 1 The rationale for the report

Introduction

The strategic partnership IDEA aims to improve the quality of education of VET schools across Europe regarding the development of new innovative methodologies for creating digital educational environment for VET students. Prior to embarking on the quest, each partner analysed their country's educational context and provided a brief analysis based on observations discussions with colleagues, and desk research. Below there are excerpts highlighting the most important issues that guided the development of the project methodology and yielded the need for realising a thorough report scoping the views of teachers from the project partner countries in a systematic and comparative way.

1.1. SOU "Riste Risteski - Richko" – Prilep / N. Macedonia

In order for a teaching process to be successful specific and special goals it should be didactically-methodically well thought out and supported. This means that through the teaching process we need to use various methods, techniques and forms of teaching to work for one goal - successful realisation of the set teaching goals and putting the student in focus, i.e. enabling them to be a continuously active agent in teaching.

The teaching staff is currently facing perhaps the biggest professional challenge that has been imposed on them because of the outbreak of the pandemic of COVID-19 virus, putting them in the role of wandering, experimenting, researching, improvising in order to bring the teaching contents closer to the students as successfully as possible.

What is currently offered as support for the realisation of teaching is scarce, insufficient, from a pedagogical point of view incomplete for the smooth running of the teaching process.

Relying only on the National Platform, which is not always reliable, we lose one of the main didactic principles: diversity.

In fact, didactic principles have been mostly disregarded if not completely ignored, i.e. the inability to establish interaction both between teacher-student and between student-student has been disabled. A lesson is successful only if this interaction is provided. Mechanical transfer of knowledge with the absence of feedback, reflection, discussion, experimentation and permanent involvement of students during the class results in student demotivation.

Not only do teachers lack the tools to teach effectively but they also face another problem, and that is how to perform quality assessment of student achievement. Without it the students lack valuable feedback and teachers miss the opportunity to spot the individuals who still need extra practice to master the content, skill or competency.

Given that the WHO's predictions and hints are that the pandemic may last, this means that it is more than necessary to provide teachers with tools that will help them meet this challenge. Namely, there is an urgent need for training of the teaching staff for the use of various digital didactic-methodical tools that will support and contain different techniques, methods, forms of teaching, etc., through which it will be possible to normalise and even enrich the teaching process, and minimise the issues discussed above.

It is extremely important to provide easier access to tools, training the staff for their application, ways and possibilities for use. At the same time, this initiates another huge need, which is to strengthen the existing resources which have proved to be insufficient for the normal course of the teaching process.

If the focus is on providing the above, training for teaching staff, training them to use new digital tools, to provide sufficient resources, the benefits will be huge, especially for the students who will have the opportunity to participate in the educational process in a much broader sense than before. Their interest will increase and they will take an active part in the activities during the class, follow the teacher without interruption, but, at the same time, participate, cooperate and give feedback.

Such situation benefits for the teaching staff, who will be able to use the tools smoothly, know and be able to make an adequate selection of tools and resources in order to more successfully realise the teaching and to bring the teaching contents closer to the students, and successfully realise the pre-set goals of the lesson. In this way the teacher will be able to realise engaging lessons that will hold the students' attention.

1.2. Info front – Prilep / N. Macedonia

The field of youth work nowadays faces many challenges regarding working with physical presence, which was the well-known, traditional way. Our direct work with young people, like organising sessions, workshops etc. faced a stagnation in this last period of restrictions, lockdown, curfew etc.

Youth workers lack concrete digital skills and tools, but also guidelines on how to work with young people online, how to facilitate creative sessions with young people. We're in need of this kind of Toolbox, with which we can learn from and promote further new innovative methodology.

We intend to help and support the facilitation of process that assist youth workers/educators in engaging young people in meaningful interactions online, in order to stimulate and raise the creativity of young people. Also with this kind of methodology and digital tools, we can work remotely even after the end of the pandemic, we can extend our work online when necessary, in order to provide possibilities for participation of young people who are facing obstacles for physical presence.

1.3. Blue Beehive / Spain

During the Covid-19 crisis, the tendency of many teachers has been to send tasks and homework to students, to try to take classes online, but lack of experience to work in an online environment, both on the part of teachers and students, coupled with the greater workload and stress resulting from performing routine tasks in a different environment, has shown that it is necessary to carry out projects like this one where educational experts and teachers can learn guidelines, improve their knowledge and competence of the digital environment, learn guidelines and tools that allow an online class to be taught correctly.

Also, there seems to exist a need to promote working on a constructivist education, centred on the students, so that they take responsibility for their education by actively training themselves. The paradigm shift imposed by the pandemics implies introducing methodological innovations that allow education to take place in a digital environment effectively, where both teachers and students can use digital tools in a ubiquitous way, both in face-to-face classes, blended teaching, and online and distance learning.

Problems that we detect in this period of lockdown as a consequence of the pandemic include:

Structural problems:

- In some cases, lack of internet connection and computer equipment
- No permanent internet connection in online classes

Teachers' problems:

- Difficulty in establishing contact with all students and following up on their progress
- Need to improve digital competence
- An inadequate selection of tools for online learning
- Lack of student involvement.
- Lack of tools to know the effectiveness of teaching
- Time constraints preparing online classes

Students' problems:

- Lack of digital competence in the use of online tools
- The internet connection not always good or not good enough
- Problems with focusing on participation in class
- Getting stressed about getting information of tasks to be carried out
- Unclear instructions from the teacher.
- Problems with communication with the teacher.

1.4. CEPROF / Portugal

On 19th October 2020, Portugal had the 10 highest death rate by COVID-19 within EU-27 (Statista 2020). The same statistics website also indicated in October 2020 that Portugal had the 5th highest economic recession in the EU-28, and from the top 10 largest recessions in EU-28 in 2020, Portugal is the country with the lowest expected GDP growth in 2021 (Statista 2020). Together this indicates that Portugal is one of the EU-27 countries mostly affected by the COVID-19 pandemics.

This is expected to have a dramatic negative domino effect in Portugal, because, on the one hand, it generates significant constraints in the education sector and VET, when Portugal is already the EU-27 country with the highest percentage of low qualified people (Eurostat 2019). And on the other hand it is expected to generate massive unemployment and a dramatic decrease on the chances of the youth to transition from the education centres to the job market, when Portugal has already one of the highest unemployment rates in EU-27 and the highest gender difference on youth (15-24 years old) unemployment rate in the EU-27, with a significant discrimination of the female youth in the access to the labour market (Eurostat 2019)).

Furthermore, this increase in unemployment it is specially dramatic in the Portuguese town of Espinho, where CEPROF is located. It was the Portuguese town with the highest unemployment rate in 2011 and is currently one of the 20 towns with the highest unemployment rate in continental Portugal (Pordata, 2018). It is located only 10 km away from the main epicentre of the COVID-19 pandemics in Portugal. Till 2019 all the VET at ESPE/CEPROF was done on site. The lock-down of the schools forced the school to provide all its training on-line. There was no structured strategy implemented as to which platform is to be used in delivering online lessons and training.

1.5. University of Applied Sciences – Tarnow / Poland

It has long been visible in the practice of blended and distance learning and teaching that the approaches, methods and techniques routinely used in traditional, face-to-face classrooms need replacing or adapting to match the unique environments of e-learning and b-learning. Therefore, the UAS in Tarnow has been searching for a Model of blended / distance learning and teaching which, on one hand, could be introduced on an institution-wide level and on the other hand it would be flexible enough to adapt it to various learning and teaching environments. Also, it seems important that the Model be consistent across various levels of formal and informal education to enable a seamless cooperation of the institutions and a predictable environment for the learners who are often lost in the multitude of possible ways of implementing e-learning.

Currently, because of COVID-19, our first year students who have just graduated from secondary schools started their education online. They have been finding it especially difficult to cope with the differences they noticed between the secondary school online learning and teaching environment and the university online environment.

We strongly believe that a carefully prepared and tested blend of approaches, methods and techniques that would constitute a Model of blended/distance teaching might remedy the situation giving teachers and lecturers reliable tools, and providing learners with a safe, predictable learning environment that ensures maximum educational benefits.

E-learning is one of the most used technologies in this modern time. The implementation of e-learning has been carried out in multiple education departments and institutional levels. The usage has also broaden within some corporate and professional companies, in informing their staffs and customers on any related development that occurs within their business world. The importance of e-learning has led to the need in assessing the mental and physical preparation of the users before using the on-line environment. Therefore, e-learning readiness is required in making sure the users are capable of using the technology in the best way possible. Technically speaking, e-learning readiness is the capability of prospective e-learning teachers/trainers and users in using a new learning and teaching environment as well as the usage of alternative technology.

In the field of education, the concept of readiness could be explored through paradigms of learning: behaviourism, cognitivism, and constructivism. Each paradigm, or set of perspectives on learning, offers a slightly different view on learning readiness. Cognitivism addresses how information is received, organised, stored, and retrieved by the mind (Feldman, 2010). The concept of readiness, when viewed as a mental process, requires the learner to be mentally active in the learning process. In this active mental process, one can argue that knowledge is constructed and

reconstructed, which forms the essence of constructivism. To construct knowledge, the student must act on objects and it is this action that provides knowledge of those objects (Grace, 2013). This willingness to actively participate (mentally and emotionally) is inclusive of the concept of readiness to learn.

The changing nature of learning, due to technological advances, compels both cognitivists and constructionists to shed new light on how we learn. As Doolan et al. (2013) noted, the social context of learning within the digital world, including social media, has become a central tenet of learning. And, another central tenet of the new realities of learning appears to be students' ability to be self-directed learners. Readiness to learn in this new digitally networked environment, through a web of electronic mediums, brings us to a new form of learning readiness, i.e. eLearning readiness.

1.6. “Virgil Madgearu” Economic High School / Romania

The general objective of our country's strategy, in terms of VET, is to develop a system of education and training adapted to the requirements of the labour market and the needs of direct beneficiaries. The general objective of the strategy is derived in four specific objectives, called strategic objectives; for each strategic objective, directions of action and associated results were formulated. The general hypothesis on the basis of which the strategic objectives and medium and long term action directions for education and vocational training in Romania are established, is that, starting from the current economic, legislative and institutional context and from the tendency to increase the coverage rate in the last three years in vocational education, there is an increase throughout the implementation of the strategy by 10% of the share of students in vocational and technical education. In the same context, in continuing vocational training, the aim is to increase the relevance and quality assurance of lifelong learning programs and, consequently, the rate of adult participation in lifelong learning, from 1.8 in 2013 to 10% in 2020.

Also, in order to meet the country-specific recommendations and objectives in the field of vocational education and training, we have in view the development of the vocational education and training system regarding 4 key dimensions:

1. Relevance - the elements that ensure a better adaptation of skills to the requirements of current and future labour market are taken into account.
2. Access and participation - the elements that ensure the facilitation of access to education and training are taken into account, with special emphasis for vulnerable groups and the increase of participation in education and training programs, following a process of guidance and counseling appropriate to individual needs.

3. Quality - the elements that ensure the development of a quality culture in the governance of the education and training system at all levels are considered: defining qualifications and curriculum, organizing the learning process, evaluating and certifying competencies, teacher training.

4. Innovation and cooperation - the elements that capitalize on the potential for innovation and creativity and the stimulation of cooperation are taken into account, with an emphasis on issues related to mobility in the training process and labour mobility.

“Virgil Madgearu” Economic High School must constantly adapt and update its offer of education and training, in order to respond effectively to the needs of society and to be oriented on creativity and innovation, on the development of skills that will allow students to become active citizens and integrate them into the ever-changing labour market.

In the context of the rise of digitalization and the integration of digital tools in education, it is particularly important to encourage the use of digital pedagogies and not just the use of digital tools in the classroom. Successful strategies are not limited to digital equipment, but focus on improving the educational experience and learning outcomes. Learning goals and priorities should be an important factor in choosing digital technologies and tools.

The pandemic situation has also brought about profound changes in the education system that have required, on the one hand, the adaptation of the teaching of each discipline or module and, on the other hand, additional professional skills for teachers to prove in a short time. A definite need of our institution, both at the level of technical disciplines and those of general knowledge, is the teachers' training in the field of new technologies, the adaptation of lessons to current work scenarios - yellow or red, the efficient integration of modern means of teaching and assessment of students and the creation of virtual environments for didactic communication for quick access to open educational resources.

Basically, a successful educational strategy means a significant use of digital technologies that are seen as a means to innovate and improve quality education. The strategic plan for education and vocational training of the “V. Madgearu” Economic High School contains the following important points highlighted by the working groups:

- The use of digital devices should support collaborative learning, mutual learning and peer feedback and strengthen interpersonal and online social skills.
- Make progress in monitoring the impact of digitalization on students' experiences or learning outcomes, for example by means of student surveys.
- Digital assessment should not only be seen as a cost-effective and time-effective tool for formulating and marking an assessment, but as a way of transitioning from a knowledge-based curriculum to a curriculum skills-focused. This is a good opportunity for

personalization and flexibility of assessment and provides a wide scope for formative assessment.

- Effective digital resources and electronic textbooks are not limited to the format of traditional textbooks, providing an interactive and personalized learning experience, allowing individualization and differentiation of teaching. Open educational resources and free resources provide easy access to materials for students from all socio-economic backgrounds.

- Learning analysis has a great potential to improve the quality of teaching and learning.

- The development of the European dimension of the institution through the initiation of Erasmus projects and / or through participation as a partner in international projects will have an impact on education and human resources to increase the quality of teaching and to adapt quickly to future challenges.

We believe that the global and multilateral approach is a key factor for the development of digital education in vocational schools. Close cooperation between all stakeholders is important at the institutional level, through the participation of school principals, teachers and students in the creation of an institution with digital capacity.

It is also very important to ensure a network of digital resources which should be open to the entire European space, created on the basis of strategic partnerships, in order to offer all students real chances of integration in professional fields.

2. Methodology

To carry out the study a thematic analysis of the rationales provided by the project partners was carried out to filter the issues that could be crucial in evaluating and comparing the problems teachers face in various contexts and cultures. The analysis resulted in the following problem areas:

1. technical problems:
 - a. with equipment
 - b. with internet connection
 - c. with ICT tools / apps
2. students' lack of motivation
3. students' lack of readiness for autonomy
4. students' anxiety

5. designing activities for online classes
6. preparing scenarios for online classes
7. developing learning goals in online classes
8. evaluating student learning
9. communication with students
10. balancing diverse learners' needs
11. disciplining students
12. parental support
13. time constrains /time management
14. adaptation of your teaching style to blended / online teaching
15. access to guidelines / methods / techniques of teaching online

A focus group discussion carried out with 7 secondary school teachers cooperating with the UAS in a national project implementing blended learning in secondary schools (Malopolska Educational Cloud) brought some more highlights to the attention of the researchers:

- teaching experience
- experience in implementing blended/distance teaching before the pandemics
- experience in using tools adapted to blended/distance teaching during pandemics.

Subsequently, points concerning the demographics of the respondents were added, since the information about the respondents' background might also be of importance, considering the respondents may be coming from culturally different areas and parts of society. The resulting tool took the form of a questionnaire that can be viewed in Appendix 1. It was transferred to GoogleForms, so that partners could use the English version as a model if they decided to use an electronic version as well. The questionnaire was accompanied by an introduction, informing participants of the purpose of the questionnaire and assuring them of their anonymity and fair treatment of data. Each partner translated the questionnaire to their national language and reached the target population i.e. teachers of secondary schools.

The resulting data was transferred to an MS Excel file and descriptive statistics were calculated. Subsequently, the data set was subjected to more in-depth analysis using IBM SPSS 26.0 package with the Exact Tests module - exact tests. All dependencies, correlations and differences are statistically significant when $p \leq 0.05$.

The basic test that used in statistical analyzes is the Chi-square test for the independence of variables. It was mainly used for questions built on nominal scales. To determine the strength of the relationship, the following coefficients were used: Phi and V Kramer. The Phi measure also indicates the direction of the relationship (positive or negative). It should be remembered that the Chi-square test is accurate when none of the theoretical numbers is smaller than one and when no more than 20% of the theoretical numbers are smaller than 5. Therefore, for each analysis where the Chi-square test was performed, additional tests that were carried out, in particular with small samples. These are tests performed with the following methods: exact or Monte Carlo. The estimated “p” test probability indicates whether the analyzed relationship is statistically significant.

In each cross-table next to the Chi-square test result (see Appendix 2) there is a letter “a” or “b”. The letter “a” means that the calculated statistic may have an unfulfilled condition of the minimum expected number, therefore the exact or Monte Carlo test is also carried out for this eventuality. In this case, if the value of “p” is calculated on the basis of the Monte Carlo method, it is additionally marked with the letter “b”. The significance of the “p” Phi and Kramer V coefficients is determined on the basis of the Chi-square test result. The measures of the strength of the relationship for the above-mentioned coefficients range from 0 to 1, with a higher value of the coefficient indicating a stronger relationship. The Monte Carlo method in most cases is based on a sample of 10,000 tables with the starting number of the random number generator 2,000,000.

By default, IBM SPSS Statistics calculates statistical significance for nonparametric tests using the asymptotic method. This means that the “p” values are reported on the assumption that the data, given a sufficiently large sample size, follows the specified distribution. However, when the data set is small, the observations are few in number and unevenly distributed, the asymptotic method may not produce reliable results. In such situations, it is better to calculate the statistical significance of “p” using the exact method, without having to make assumptions that may not be met by the data. Exact “p” values are preferred for scientific purposes, but they often represent huge computational problems, so in practice, asymptotic results are used instead. In the case of large and well-balanced data sets, the statistical significance results obtained with the use of accurate and asymptotic methods are very similar to each other, but for a few samples they may be completely different, and thus lead to opposite conclusions during the verification of hypotheses. In the IBM SPSS package with the Exact Tests module (exact tests) there are two methods of obtaining the “p” value: the

exact method and the Monte Carlo method. The first one is preferred for small data sets to ensure sufficient computing power. The main goal is to avoid interrupting the calculation process due to an excessive time and insufficient memory. In the case of more numerous samples and tables with a larger category of indications, it is suggested to use the Monte Carlo method, which lasts a relatively short time, and the results of statistical significance are significantly similar to those obtained using the exact method

3. Participants

The study was carried out in the IDEA project partner countries (North Macedonia, Poland, Portugal, Romania and Spain, see Appendix 2 Table 1, Figure 1) among secondary school teachers who volunteered to fill in the questionnaire, either electronically or in a paper form.

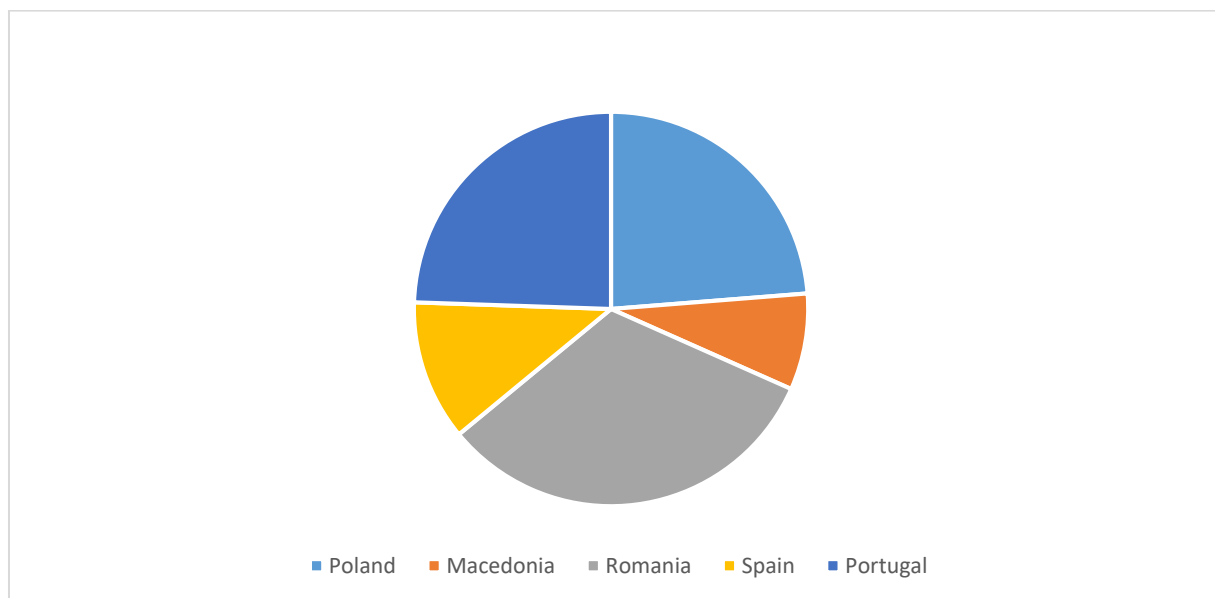


Fig. 1. Respondents' countries of origin

The study yielded 142 respondents: 106 women, 35 men, and one response where gender was not specified (see Appendix 2 Table 2, Figure 2).

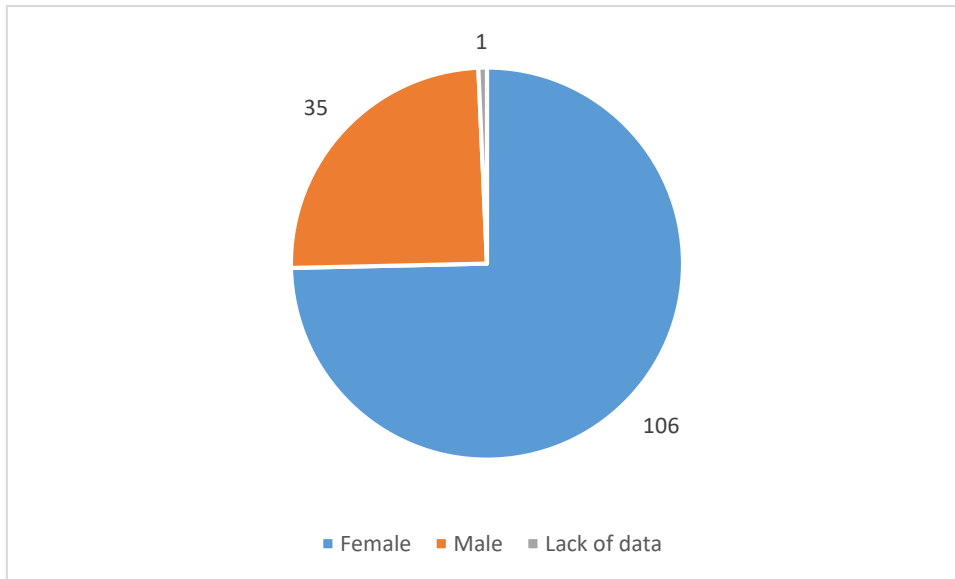


Fig. 2. Respondents' gender

When it comes to the age of respondents (see Appendix 2 Table 3, Figure 3) the most numerous age group, constituting almost a half of all the participants of the study, are teachers declaring the age of 41 – 50. What is also interesting to notice is that teachers over the age of 50 constituted almost 20% of the cohort and teachers below the age of 30 made up only 4.2% of the sample.

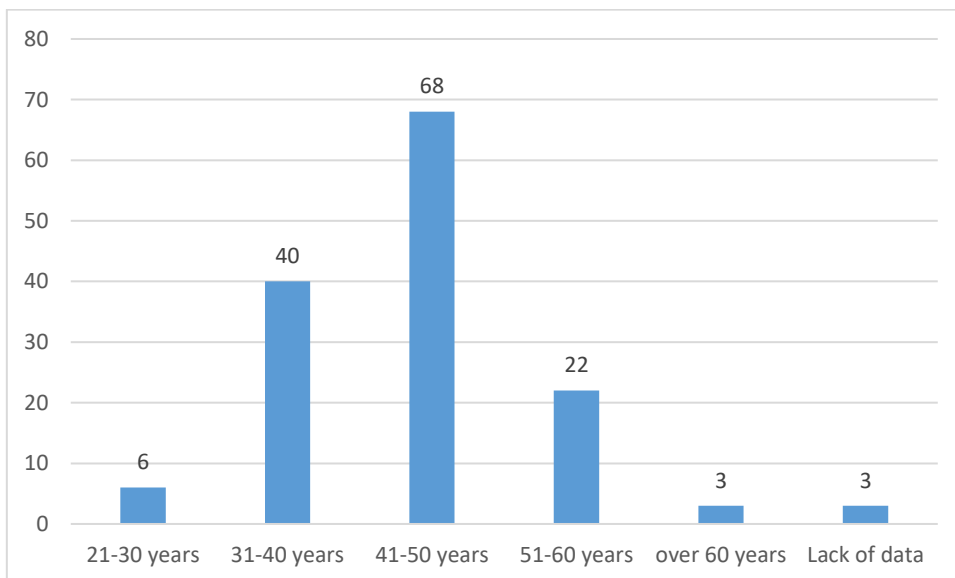


Fig. 3. Respondents' age

The respondents' teaching experience was diverse (see Fig. 4), but more than three quarters of the respondents have been teaching for more than ten years, which suggests that they have had substantial understanding of the field prior to the study.

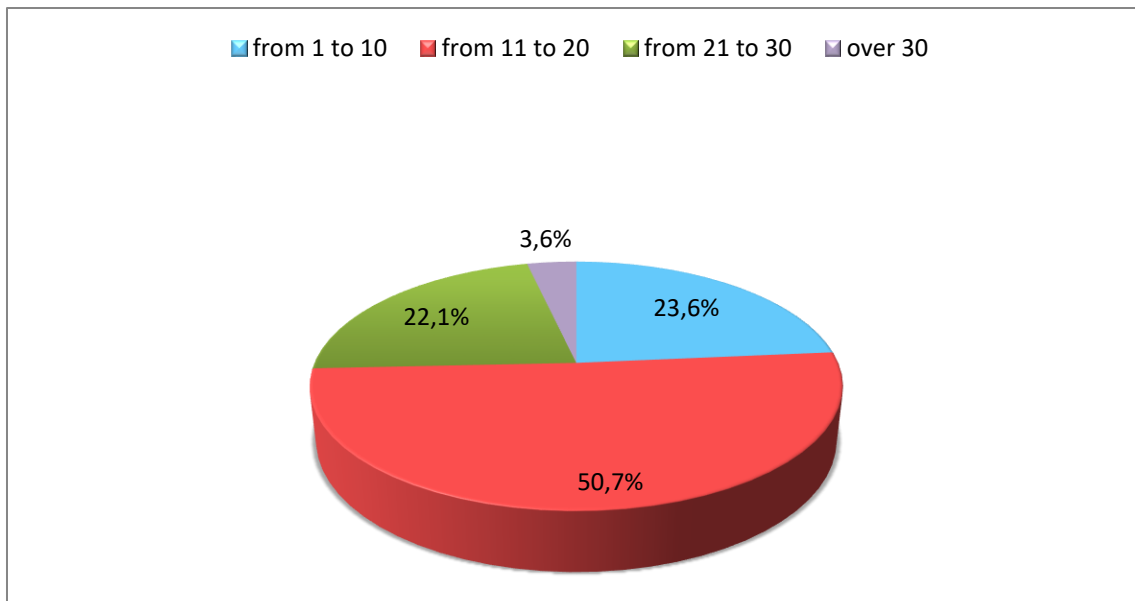


Fig. 4. Respondents' teaching experience

The mean length of the teaching experience of the surveyed teachers was 16.52 +/- 8.036 (standard deviation) (see Appendix 2 Table 4). The smaller the deviation, the more the individual results are clustered around the mean. The minimum value was 1 and the maximum value was 43.

The subjects that respondents teach are varied (see Appendix 2 Table 5) . They have been categorised into 5 areas: arts and humanities, ICT, natural and mathematical sciences, vocational subjects, social sciences and economics (see Fig. 5). The largest group of respondents was made up of teachers of languages (both native and foreign). They constituted almost a half of the subjects. The smallest number of respondents taught subjects connected with Information and Communication Technology (ICT).

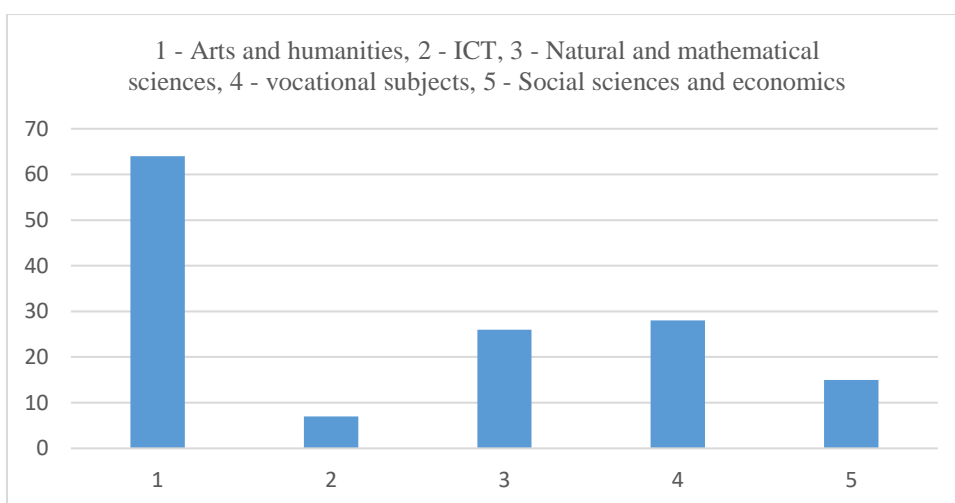


Fig. 5. Subject categories respondents' teach

4. Results and findings

When analysing the type of teaching implemented during the COVID-19 period 22.1% of the respondents chose a blended design, 45% selected distance teaching, 52.9% of teachers admitted to implementing both of these and 2.1% of the subjects chose “none” and 5% chose “other”. Two respondents specified “other” as “videoconferences” and “face-to-face teaching”. Other respondents did not provide an answer.

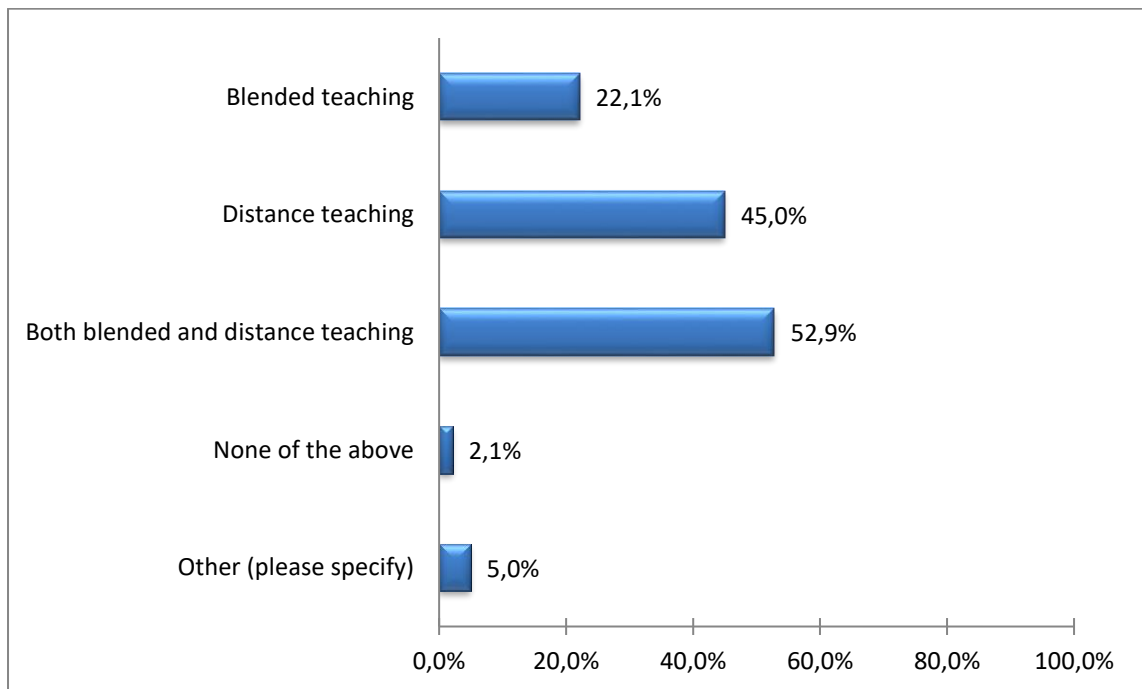


Fig. 6. Type of teaching employed during the COVID-19 period

When it comes to the tools used by the teachers before the COVID-19 pandemic, a vast majority of them pointed at various ICT applications. Videoconferencing tools and learning management systems were scarcely used by the teachers (see Fig. 7). What is more, more than 30 percent of the respondents did not choose any of the options, which might suggest they did not use any ICT tools. The situation changed during the pandemics, as only 2 of the respondents did not provide an answer (see Fig. 8). The percentage of the responses for the first two queries (videoconferencing tools and learning management systems) also grew substantially, with the videoconferencing tools leading the way during the COVID-19 period (see Appendix 2 Table 7).

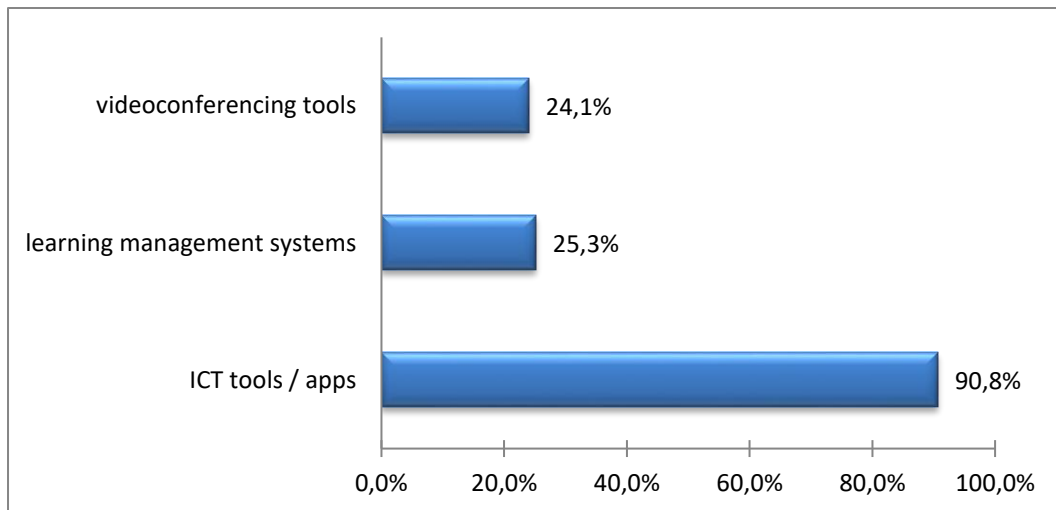


Fig. 7. Types of tools used by the respondents before the COVID-19 period

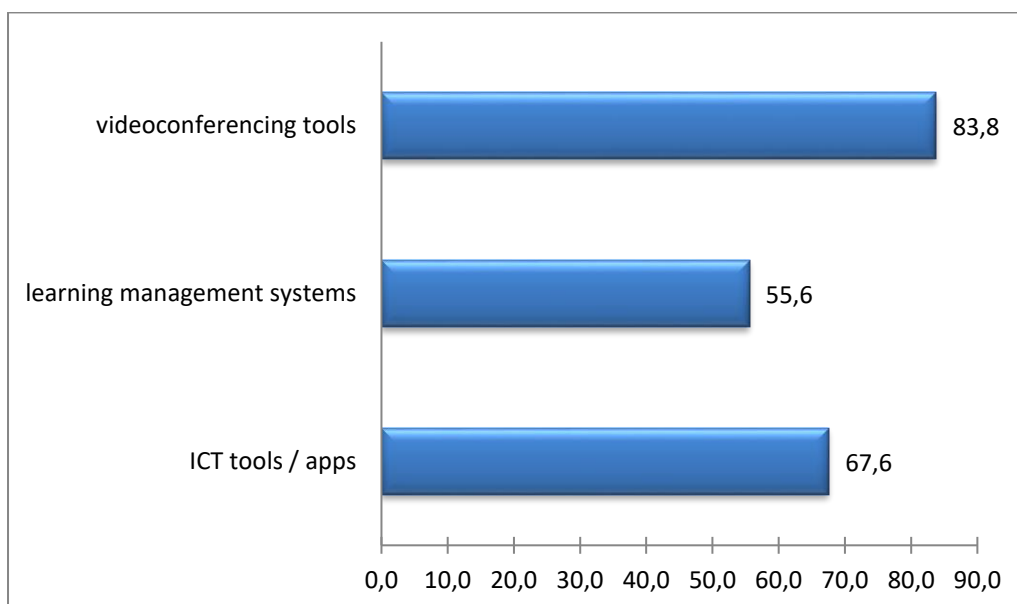


Fig. 8. Types of tools used by the respondents during the COVID-19 period

When it comes to the type of tools listed by the respondents, there was a great variety of them listed by the respondents both before and during the COVID-19 period (see Fig. 9, Fig. 9, Appendix 2 Table 8). It may be worth noting that the selection of tools used during the pandemics was scarcer than before it. Some of the tools mentioned by teachers as used in the process of teaching before COVID-19 were not mentioned in answer to the question probing the tools used during the pandemics. Also, while it was expected to note a rise in the use of videoconferencing tools, it can be noted that some applications, such as Gmail or YouTube, were not used so often during the pandemics as before it.

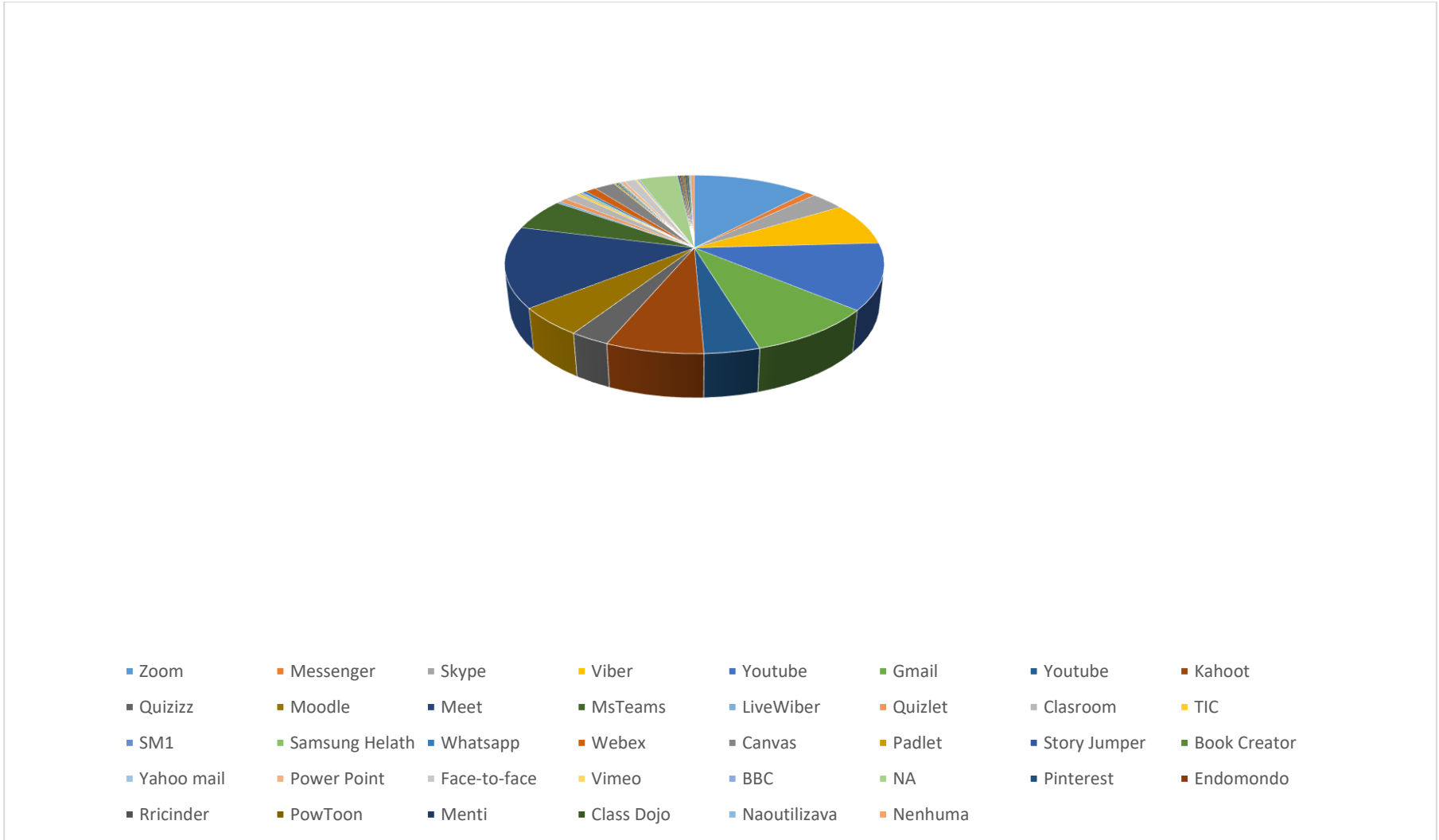


Fig. 9. Videoconferencing tools, LMSs, apps used before COVID-19

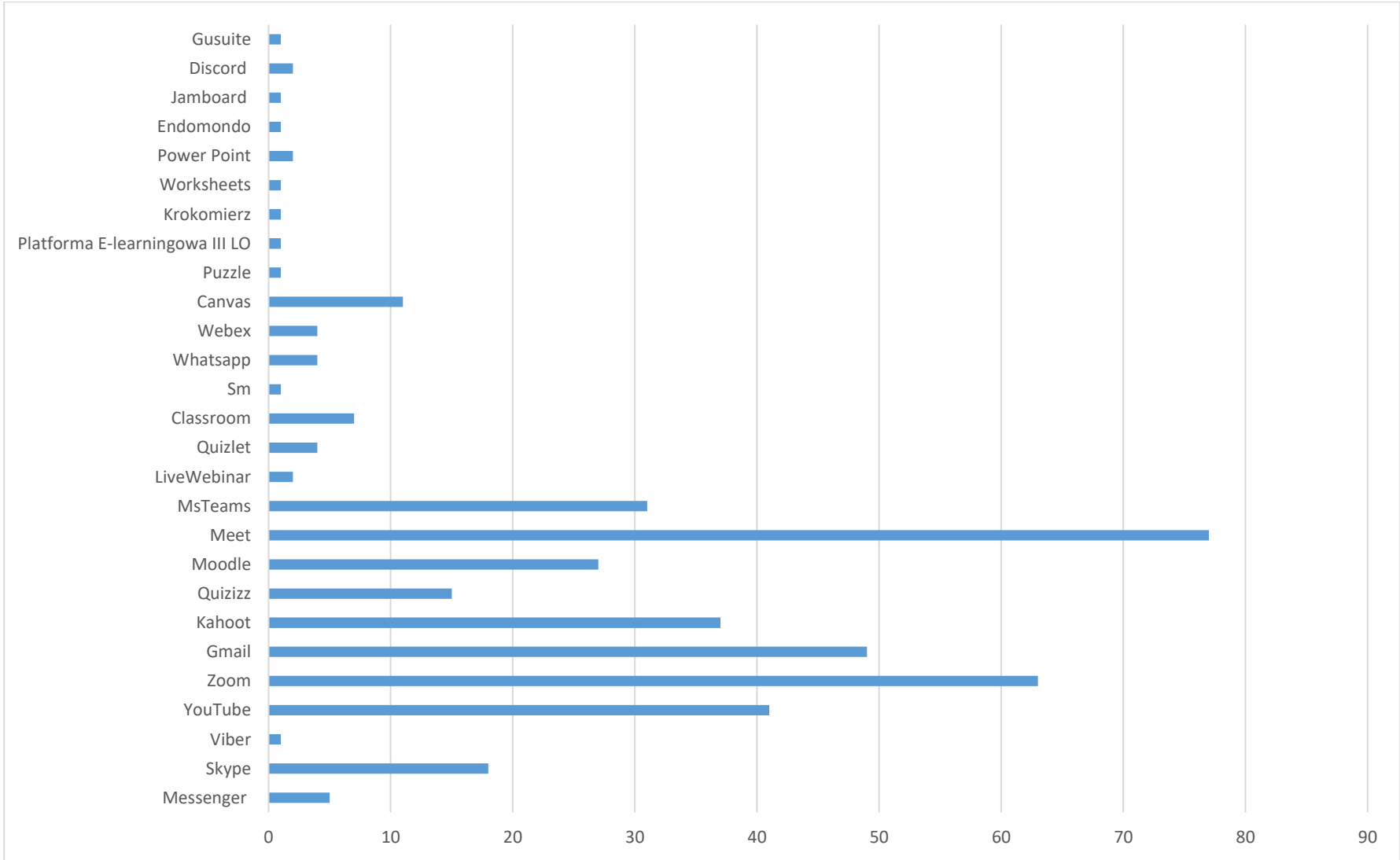


Fig. 9. Videoconferencing tools, LMSs, apps used during COVID-19

The most striking finding that needs to be considered is the selections of issues that teachers encountered while implementing blended or distance teaching (see Table 9, Figure 10). Respondents were able to mark multiple issues, therefore the percentages do add up to one hundred.

Technical problems were reported by 71% of the respondents. The second most frequently indicated issue reported by 69.7% of the respondents was lack of the students' motivation to learn. The third most burning problem, indicated by 52.8% of the respondents, was lack of the learners readiness to learn in an autonomous way. A problem that was almost as frequent was the issue of evaluating the learners' progress with 49.3% of the respondents marking this point in the questionnaire.

The next most frequent problem indicated by 42.3% of the sample concerned technical problems with the equipment. The sixth of the most frequently marked problems regarded the students anxiety, marked by 40.8% of the cohort. Unfortunately, the respondents did not specify what the feeling was specifically caused by. There were several issues that received an almost equal value of gravity of around 30%. Three of the concerned the process of preparing and delivering blended or online classes: developing learning goals in online classes, preparing scenarios for online classes, adaptation of one's teaching style to blended / online teaching. Two of them were about the interaction with learners and regarded communication with students and balancing diverse learners' needs. The remaining six problems were each marked by around 20% of the respondents: technical problems with ICT tools/apps, developing learning goals in online classes, disciplining students, parental support, time constrains /time management, access to guidelines / methods / techniques of teaching online.

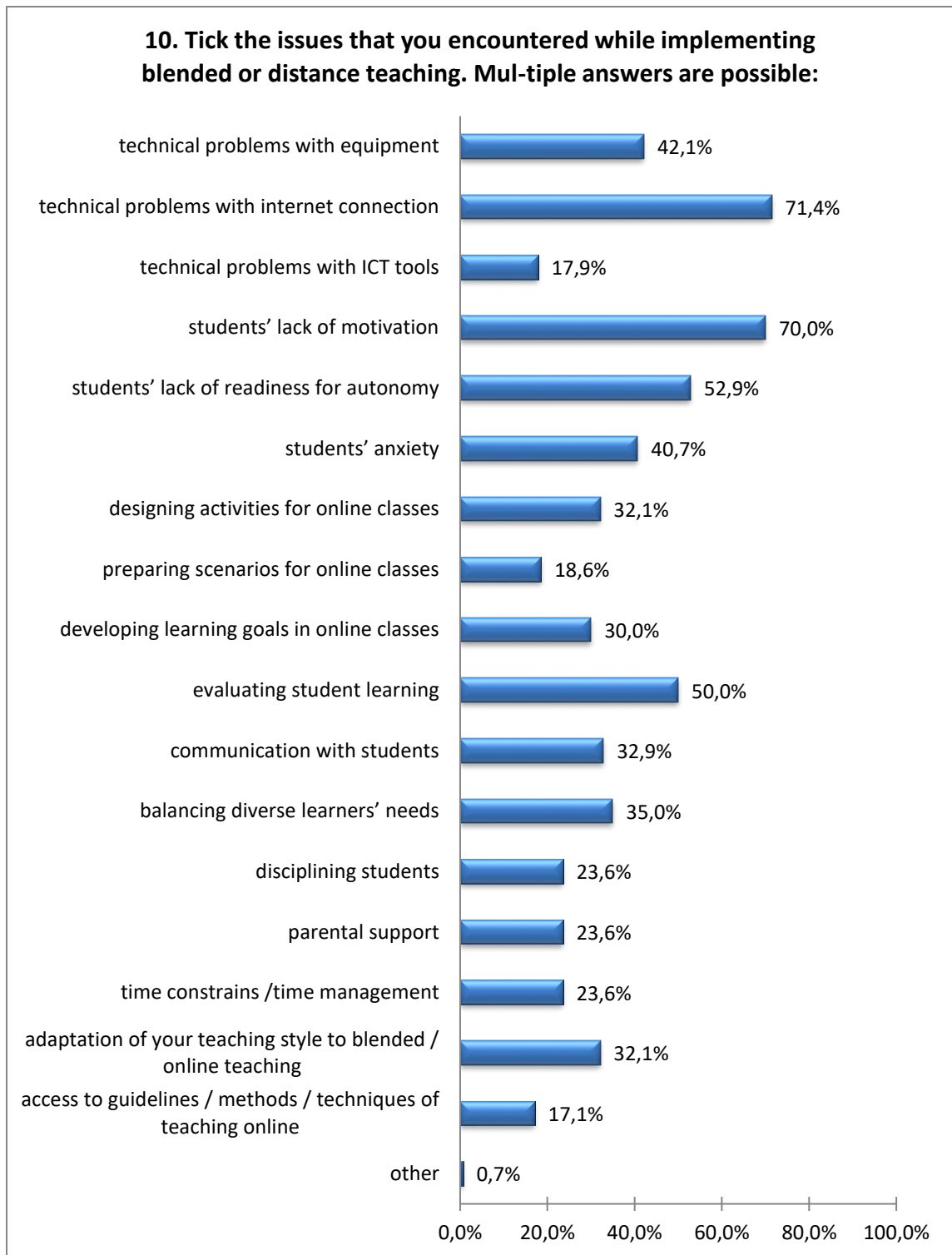


Fig. 10. Issues teachers encountered while implementing blended or distance teaching

When analysed by country, it appeared that the intensity of the issues was country dependent (see Fig. 11, Appendix 2 Table 10)

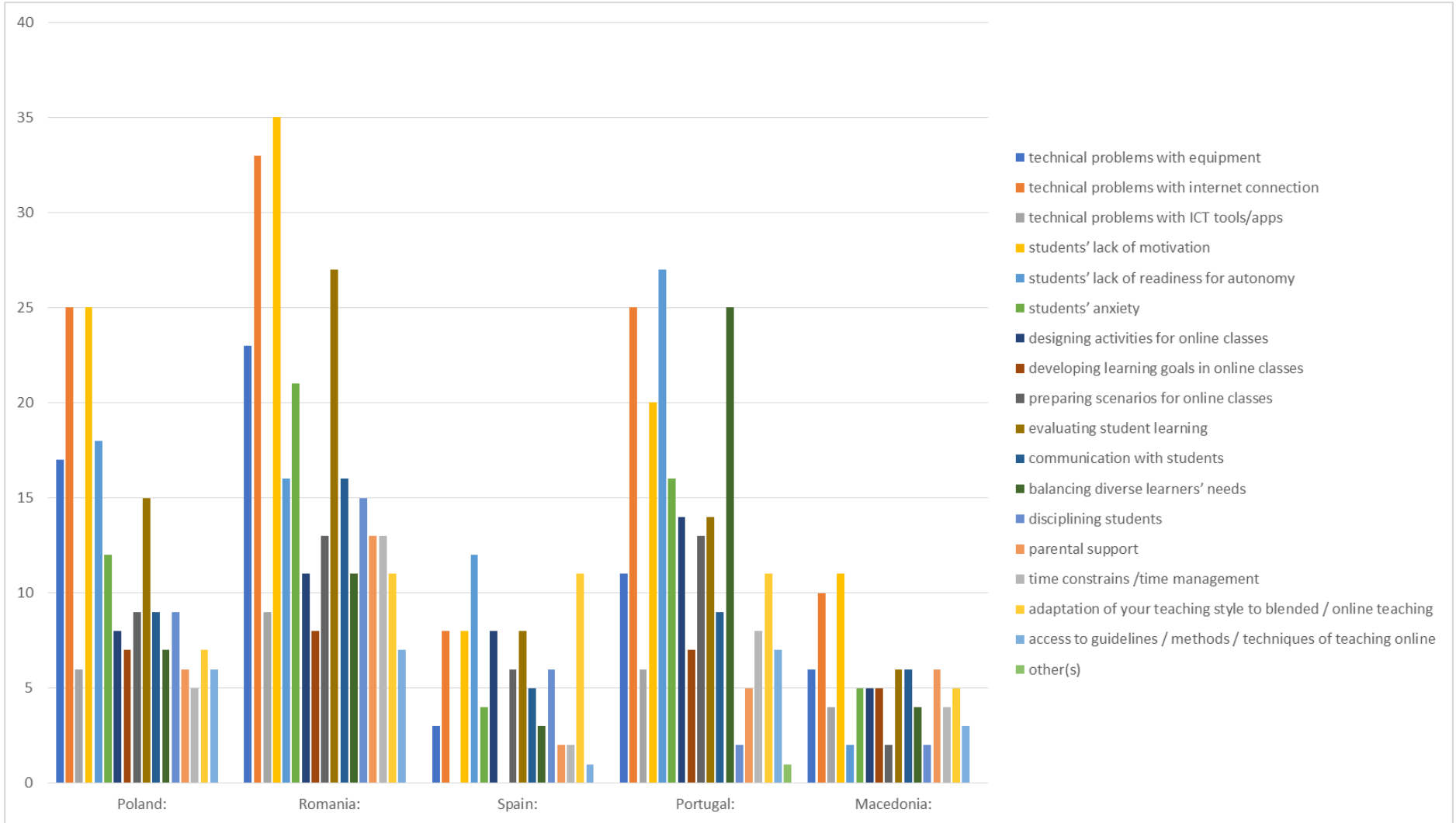


Fig. 11. Issues teachers encountered while implementing blended or distance teaching by country

The respondents from Macedonia, statistically, more often than others, indicated the lack of motivation in students as a problem in remote or mixed learning. This type of problem is perceived less often by respondents living in Spain and Portugal. Lack of readiness for independent work among students was clearly most often noted by the respondents from Spain and Portugal, while the respondents from Macedonia chose it least frequently. The respondents from Portugal much more often than the rest of the respondents complained about being able to meet the diverse needs of the students in the group, and the least frequently about disciplining them. The problem of lack of parental support is noticed by respondents from Macedonia to a greater extent than respondents from other countries, while the difficulties in adapting the teaching style to hybrid / distance learning are noticed by respondents from Spain. The share of the above answers is statistically significantly dependent on the inhabited country. However, the values of Kramer's V coefficients indicate quite distinct strengths of the relationship.

Respondents whose educational institutions are located in rural areas see problems with parental support more often than respondents whose educational institutions are located in small towns and cities. The relationship between the variables is statistically significant and is characterized by a slight strength of the relationship. Taking into account the other answers, they are not statistically significantly dependent on the type of area where the institutions are located (see Appendix 2 Table 11).

Women, more often than men, perceive problems with adapting their teaching style to the requirements of hybrid and distance teaching. The dependency coefficient is statistically significant and has the strength of the relationship at the level of $\Phi = -0.274$. Taking into account the other answers, they are not statistically significantly dependent on gender (see Appendix 2 Table 11).

Part 2. Analysis of the current existing methodological and theoretical frameworks that are used in blended/distance learning and teaching grounded in social constructivist pedagogy

1. Blended/distance learning environment – defining the terms

Plato (428 BC– 348 BC) said:

“Someday, in the distant future, our grandchildren's grandchildren will develop a new equivalent of our classrooms. They will spend many hours in front of boxes with fires glowing within. May they have the wisdom to know the difference between light and knowledge”.

However unlikely it might seem that Plato may have foreseen the current developments in information and communication technology, the point he makes at the end of the statement remains valid: progress is a relative concept and it is up to each generation to make sure it is moving in the right direction.

Blended learning or B-learning - a mixed (integrated, hybrid) method of education, combining traditional learning methods (direct contact with the teacher) with activities conducted remotely using a computer (M-learning). The ratio of individual elements is selected depending on the content of the course, the needs of students and the preferences of the teacher. This method is very effective because it allows for a flexible way of building training, taking into account the goals, topics and specificity of the industry and the group of participants. The advantage of B-learning is certainly the possibility of using remote and direct forms of activating students and working together on-line between the teacher and students. The organization of time in B-learning is free thanks to remote classes, and not forced as in the case of traditional classroom classes. Due to the increasing penetration of technology into the world of education, blended learning is redefined as mixing the contexts in which we learn and changing the media through which communication takes place, as well as mixing approaches to learning or devices that make training so much as effective as possible.

Sharma (2007) points out that blended learning can be considered on several different levels:

- Social, when one part of the process of education is realised via workshops or project work, with time for trying out ideas and making mistakes, and another part is made up of discussions (also online), classes moderated by a teacher.

- Organizational, when activities cross subject boundaries, aimed at gaining interdisciplinary knowledge or transversal skills, with the learning / teaching environment functioning as a background.

- Technological, when part of the training is carried out "face-to-face" with the teacher in the classroom, some in the form of a videoconference or a webinar, shared multimedia materials or via learning management systems.

Gajek (2011) defines distance teaching as providing students with a learning environment using information technology. It means supporting the didactic process with the help of personal computers, smartphones, tablets (m-learning) and the Internet. It allows students to do task and interact with the teacher and classmates without being physically present in the classroom. The term e-learning refers to the use of technology to facilitate the whole process of learning.

In the case of using mobile technologies, the term m-learning is used. Contrary to traditional methods, in e-learning the main burden of learning lies with the learner, not the teacher (Gibbs 2010). Access to learning tools and teaching materials is often provided by a learning management system (LMS) supported with hypertext linking the LMS with various content or applications on-line. There is an increasing number of massive open online courses (MOOCs) which allow learners to take part in a selected course, sometimes ending with an exam, remotely and free of charge.

2. Blended / distance learning redefined (during the pandemics)

In the face of the widespread threat of coronavirus, education faced a completely new challenge. Along with the growing threat infection, public access institutions were closed until further notice. Traditional didactics in the class-lesson system transformed into wholly or largely - in the so-called distance learning, called sometimes with distance learning. The term "so-called" was used intentionally, because the question of distance is conventional here. It is about transferring didactics on virtual ground, and the physical distance between the participants it does not matter much in the didactic process. Teaching and learning takes place via the media and electronic tools available on the Web.

In this report, the term e-learning will be used interchangeably with distance learning. E-learning has been one of the forms throughout its history conducting didactics for decades. Till the pandemics it was treated as an alternative to traditional forms, i.e. the class-based system in the classroom, constituting a de facto complement, supplement or addition for ubiquitous face-to-face teaching, with few educational institutions that operate entirely on-line. Sasha Reese (Indiana University of Pennsylvania, USA) described it in an interesting way in 2014, the duality of virtual education environments (VLE) in contemporary education:

(a) the supporters of the VLE argue that that the student / student of the 21st century is effectively equipped in virtual tools - based mainly on Web 2.0, and

(b) sceptics claim that virtual asynchronous communication tools do not meet hopes placed in them to significantly improve the process of learning in students, among others because of a specific isolation

In addition to the organization of distance learning in a vertical (top-down) system teacher → student, such organization of the process plays an important role in education to activate communication as effectively as possible horizontally: student → student. Nowadays, when travel and contacts between pupils / students are inherently limited, remote cooperation can bring tangible results.

3. Scaffolding in blended / distance learning

The e-learning environment motivates students to intensive work and allows them to achieve the assumed goals and learning outcomes, if there are varied, well thought out and pre-designed general and specific support structures provided by all "components" of the process:

- didactic know-how
- appropriate technologies
- engaging content materials
- motivated teacher
- autonomous students

In such conditions distance learning environment is able to support students by modifying content, prepared with the help of online tools, and adapting the entire educational process by making it more effective and attractive to a young person. It also enables students to gain - in

addition to academic knowledge - also various types of skills needed in working life. Well-structured distance and blended learning programs comprehensively stimulate learners to various activities and strongly engaging work in and out of class. They allow also the teacher to constantly monitor the activity of students, and thus - to customize the content to their individual needs. The teacher supervising young people working in a virtual environment can easily modify educational content, i.e. expand it with materials and tasks both to help students with weaker capacity of assimilating knowledge cover the material and help the gifted gain additional competences. Another important element of scaffolding that may be provided to distance / blended learners is ensuring that they take an active part in building their knowledge and skills, working in a friendly facilitating environment with the opportunity of various types of interactions during individual work and teamwork.

A properly constructed learning environment, with text and multimedia files and assignments, exercises, projects and written assignments has the potential to provide students with appropriate level of support. An example of such an effective learning management system is the Modular Object Oriented Dynamic Learning Environment (MOODLE) LMS. It allows the teacher to create, modify, and run a course in a flexible way. Based on a constructivist paradigm, it allows for designing educational materials appropriately matched to the needs of students. It also enable a level of interactivity which to a large extent increases the effectiveness of teaching. Resources from which students benefit may be linked to internet sources or uploaded by the teacher. The level of instructional materials and the intensity of individual work planned for the students need to be adjusted to their capabilities to maximise the learners' concentration span, set the pace of their work and show them how to learn.

a. Educational materials as scaffolding

E-learning materials have been proved to be more effective if each section, for example, covering one screen, ends with a task that involves reflection. First, the learner needs to be shown the general goal of the module or lesson. Then the goal needs to be broken down into tasks and activities that will engage the student and result in gaining the knowledge and skills planned for the lesson / module.

Clues or even short answers strengthen the learners' motivation to proceed with the educational process and help the students understand the topic or allow them to look at the processed material from a different perspective. Therefore, activities and tasks intended for

individual work should include solutions either in the text of the task or in a separate file (Simpson 2012).

Mokwa-Tarnowska (2012) suggests attaching a link to an external source or a clue, which will indicate the correct line of reasoning. The purpose of placing text or a multimedia resource in the content questions for reflection and self-evaluation of questions is to increase the interactivity of the course, which leads to greater student involvement and, consequently, improves the effectiveness of the acquisition of knowledge. If the students note down their thoughts while performing tasks, they can later use them for discussions on forum. Exchange of views based on their stimulates learners to work, encouraging creative analysis and a critical look at a problem. Self-assessment assignments teach students how to independently manage the educational process. They make it clear them what knowledge and skills they have already acquired and what they have yet to study, so they help them become more conscious participants of the educational process.

In online courses tests are usually automatically checked and their results are made available to students, along with the formative assessment, immediately after completing the test. It is a support structure designed in such a way that it provides them with immediate information about the areas, where their knowledge and skills are insufficient. Formative assessment, preferred in the constructivist approach, guides the learner, shows which issues he needs to devote more attention to, thus it is an additional educational factor. In contrast, a summative assessment is given by the system based on the settings made earlier to the test by its author or posted in a teacher-based virtual learning environment. The Majority of the students have a negative attitude to being tested summatively. Also, summative assessment does not provide students with information, how they are supposed to increase the newly gained, albeit insufficient competences.

Appropriately diversified support structures, embedded in the course, of which only a few are outlined above, help participants of e-learning classes to achieve the assumed goals and learning outcomes.

b. Group support

Introducing differentiated support structures engaging the participants of the e-learning classes in helping their peers contributes greatly to achieving the course objectives. If the students are encouraged by the teacher to help each other during specially designed activities, it will enable them to interact with each other, they will be more willing to perform course tasks together (in

pairs or groups) and will be more involved into the educational process. Create active support groups is especially relevant in the case of courses on which, due to their nature, presence teacher is limited (eg. MOOC). In e-learning classes, students can help each other via chat, e-mail, discussion forum, videoconference, blog or wiki while performing tasks demanding cooperation or collaboration, carried out within the framework of team projects. Interactivity achieved thanks to the above-mentioned communication channels, monitored by the teacher is one of the factors which strengthens interest in learning in an e-learning environment, increases motivation and weakens the feeling the loneliness and isolation students often experience while participating in online courses. It is especially true in case of student with little experience in e-learning.

On the MOODLE platform tools that can be used for this purpose include: a workshop, a discussion forum or a wiki. Precise guidance on how the work of group participants is going to be evaluated must be prepare teacher in advance and passed on to students. It is also advisable to inform them what comments and evaluations cannot be posted in the self- or peer-assessed tasks. Gibbs (2017) argues that positive support and constructive formative assessment, based on sharing opinions and judgments, are a very effective learning and teaching tool, especially in a constructivist learning environment. Drawing on his own research Gibbs (2015) concludes that metacognitive awareness is an essential element of every educational process.

c. The teacher as the main element of the scaffolding

Following the lockdown caused by the COVID-19 crisis, the forced digitization of teaching at all levels of education has highlighted the social problem of digital inequality at home. Therefore, a multidimensional approach to digital inequality is proposed, incorporating the frequency and quality of use of digital media, as well as ICT access. To this end, multiple structural equation models are estimated using data from the last PISA cycle (2018), for a total of 161,443 students from 6261 schools and 21 European countries, to check the influence on each of three dimensions of both the SES and the integration of ICT in schools. The results confirm that for most European countries:

(1) access to ICT at home is influenced to a greater extent by the family's SES than by the integration of ICT at school;

(2) both the frequency and quality of use of ICT at home are influenced more by the integration of ICT at school than by the SES of the family, while in some countries the influence of the social aspect is practically irrelevant (González-Betancor et al. 2021).

Drawing on the findings of González-Betancor et al. (2021), it must be concluded that the way the teacher designs, runs and supports the e-learning experience of the students to a large extent determines the learners' success. Students need teacher support in a number of circumstances:

- clear and precise instructions before starting the course and at its every stage;
- continuous monitoring;
- content modification and enrichment for additional resources and exercises to allow weaker students to better master the material, and enable them to expand knowledge;
- frequent contact using the available tools, making learners feel stimulated to work;
- formative assessment.

A course containing the above-mentioned forms of support has the potential to be inspiring and highly motivating.

Part 3. A culture-sensitive model of blended/distance learning and teaching

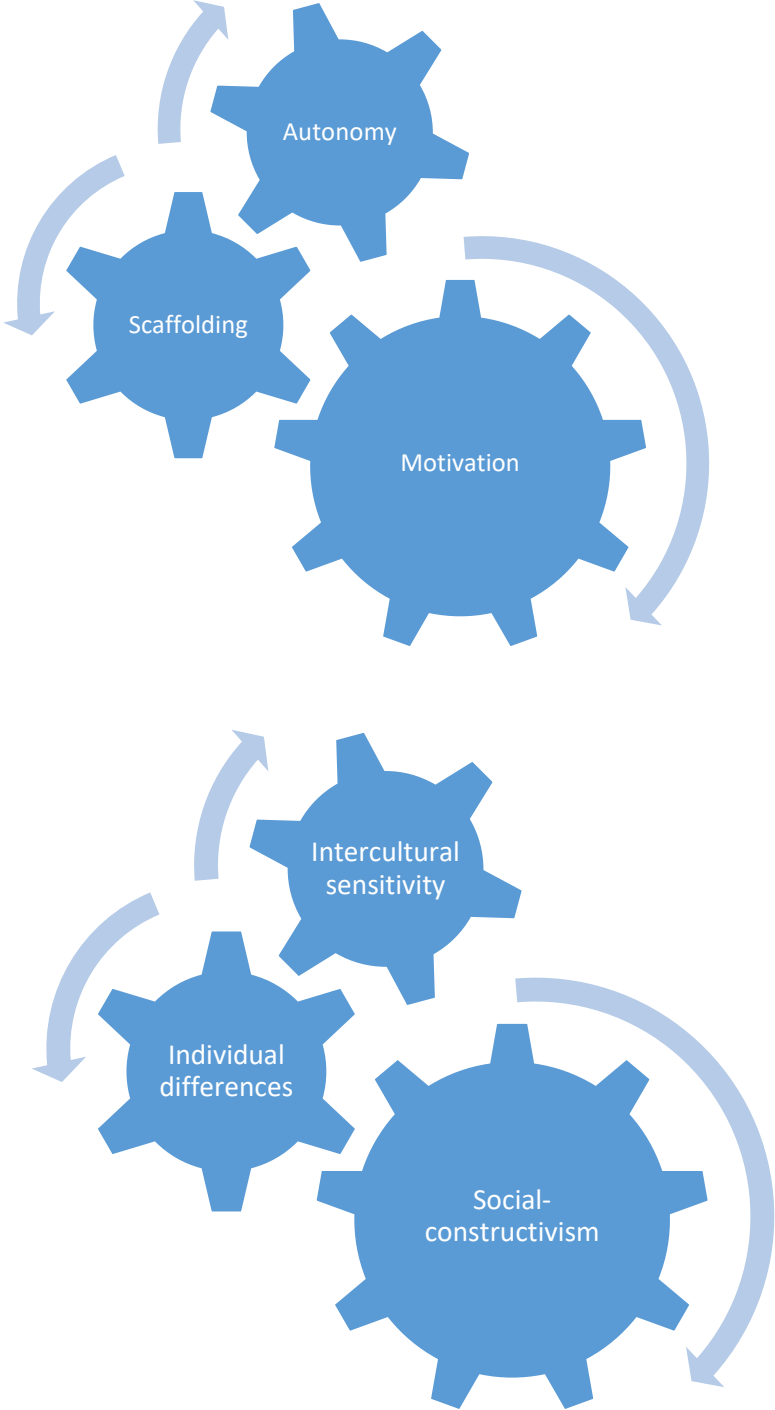


Fig. 11 A culture-sensitive model of blended/distance learning and teaching

1. The philosophy of blended/distance teaching:

a. Social constructivism

According to constructivism, knowledge is created by an individual. Man does not register information, but creates knowledge structures from the available information. Each cognitive activity leads to a specific transformation of the inflow of information, and individuals construct reality on the basis of their own understanding of the information. Cognition, therefore, is always of an active rather than passive nature. According to constructivists, every person should be treated as an individual capable of independently processing external stimuli (Bendel 2004: 60). Quetz (2003: 61) emphasizes that the construction process can be identified with the learning process, and from this perspective, science should follow the maxim "construction instead of instruction".

When discussing the assumptions of constructivism, one cannot forget about the concept of assimilation and accommodation, where assimilation is defined as including the novel elements of the external world in the already formed cognitive structures, while accommodation will be a process of expanding or transforming the cognitive structures to better fit the external environment (Klus-Stańska 2003: 68). In other words, there is no one-size-fits-all instruction that will provide the highest effectiveness of the teaching process and satisfaction of both students and teachers, because learning is a process influenced by individual characteristics of both learners and the teacher, as well as the environment.

It has been known for centuries that one cannot learn in a vacuum, without contact with other people, which is evident in the need to receive informative stimuli representing at the same time, the basis for further considerations and building your own vision of the world. Constructivism emphasizes the role of an active student and teacher organizing an attractive learning environment for him (Klus-Stańska 2003: 68). It is the quality of the process that will make it effective and bring benefits to the students and satisfaction to the teacher.

b. Individual differences

It is a common observation that people differ from each other in the way they understand the world, yet it is less obvious why and how they differ. The field of study that deals with individual and group differences in human behaviour is called differential psychology. Revelle et al. (2011: 3) summarized it succinctly as: "The study of individual differences includes the study of affect, behaviour, cognition and motivation as they are affected by biological causes

and environmental events”. A number of psychologists have made attempts to define, describe and classify individual differences in order to identify factors that account for success in learning. As Cohen (2010: 161) points out, “When students embark on the study of a subject, they are not merely ‘empty vessels’ that will need to be filled by the wise words of the teacher; instead, they carry a considerable ‘personal baggage’ [...] that will have a significant bearing on how learning proceeds”. Indeed, a handful of factors of the learner’s ‘baggage’ can potentially affect success learning. Among them, there are variables that are relatively easily identifiable, such as age or gender, and those that are much more difficult to grasp, mainly due to problems involved in their measurement, such as intelligence, aptitude, motivation, learning styles, learning strategies or personality factors.

It is interesting to note that it is not very complicated to find definitions of individual differences in the literature. Strelau (2006) explains that the notion of individual differences is connected with the fact that entities, both human beings and animals, that belong to the same population are different in respect of comparable physical and mental characteristics. Dörnyei (2005: 1), in turn, argues, “As the term suggests, individual differences (IDs) are characteristics or traits in respect of which individuals may be shown to differ from each other”. In another of Dörnyei’s (2017: 82) publications, he explains, “Individual differences (IDs) refer to dimensions of enduring personal characteristics that are assumed to apply to everybody and on which people differ by degree. In other words, they concern stable and systematic deviations from a normative blueprint”.

Even though the definitions presented above do not seem to be controversial, some problems arise with particular individual variables for example, applied linguists have not been able to reach a consensus on whether learning styles can be equated with cognitive styles or to what extent intelligence is a part of foreign language aptitude. This brings about a problem with taxonomies of individual differences which have been provided by various researchers according to differing criteria. As Ellis (1994: 10) claims, “The learner factors that can influence the course of development are potentially infinite and very difficult to classify in a reliable manner”. It should be stated that many of the variables mentioned above cannot be affected by the teacher or are generally considered to be stable factors, among them: age, gender, aptitude, intelligence or some personality traits. There are, however, factors that can be shaped to some extent through appropriate training, e.g. learning strategies, autonomy or motivation, in order to help learners achieve better results in learning.

Ongoing digital transformations facilitate the conduct of online courses and distance learning. Jost et al. (2021) aimed to investigate the role of learners’ personalities and behaviours

in their academic success (exam scores) in a blended learning setting (combination of distance learning and face-to-face learning). Apart from individual differences in several variables (including intelligence), participants' (n = 62) learning time and learning motivation over 14 weeks (one term) were measured using questionnaires for one learning module at the Swiss Distance University Institute. Also, data on the participants' grades at the end of the course and the number of exercises they completed during the term were obtained. A stepwise regression analysis revealed that studying at the optimal time of the day and studying regularly are relevant predictors of academic success.

c. Culture-sensitive teaching

Multiculturalism is a multifaceted, political, social, educational, and therefore extremely complex and dynamic concept, it is a constellation of changing theories, practices and views. Terminology related to this phenomenon is heterogeneous and most often constitutes structures with the following prefixes: multi-, poly-, pluri-, cross-, trans, inter- in combination with the element -cultural, -culturality. Although created in a similar way the terms are not synonyms. In the literature on the subject, multiculturalism is defined as a certain state of affairs meaning the coexistence of different ethnic and cultural groups in one society. Multicultural awareness means their democratic coexistence, acceptance, tolerance, respect, but with no intention of changing one another. Multiculturalism needs to be seen as distinct from interculturalism. The latter assumes shaping attitudes of reciprocity. At a later stage, factors such as commitment contribute to this emotional and full of empathy attitude towards 'others' as one has towards 'one's own' culture (Nanni and Abbruciati 2001: 73–74).

Intercultural communication, regulated by deep civilization values, uses as tools two groups of grammars, respectively with a verbal and non-verbal code, and it is realized in events communication. These events are regulated both by universal cultural rules and unique group-culture dependent ones. It is the latter that are a potential source of confusion (Balboni 2011: 19). It should be emphasized that it is not about superficial cultural differences, eg folklore, but the deeply rooted values and convictions, having a significant impact on communication, allowing interlocutors to assess whether the contact is official, informal, friendly or conflicting; helping to recognize and interpret verbal and non-verbal signals or signals establishing a relationship, in order to, apply appropriate communication situation patterns of behavior that allow for harmonious interaction. In any culture there is a relatively constant set of factors over

a given historical time governing communication. They include many parameters of nature socio-cultural, psycholinguistic, axiological and pragmatic.

Within the context of blended and distance teaching many of the cultural clues perceived quite easily during face-to-face interaction are difficult to perceive or can even be completely lost. Therefore, it is of paramount importance for the teacher to design activities where the learners have the possibility to (implicitly or explicitly) acquire the pieces of information that will enable them to construct the understanding of their peers' cultural background. Without such an understanding students may find it difficult to cooperate, which will inevitably lead to a feeling of alienation and demotivation.

2. The practice of blended/distance teaching

a. Motivation

Motivation to learn is a big problem in modern education. It is even more important in distance and hybrid learning than in a face-to-face classroom. One of the reasons is the fact that the social aspect, playing a vital part in initiating, sustaining or abandoning an action, changes dramatically. Students lose the direct support of their peers and the teacher. Their peers on-line presence, on-line interaction have immense influence, but the resulting feeling these need to generate must be well considered in the process of designing online courses and activities.

As Dörnyei (2001b: 248) argues, "(...) motivation is the primary affective factor shaping second language acquisition/learning (...)". This can easily be applied to other fields of education. As claimed by Dörnyei (2001b: 8), the understanding of motivation has experienced historical changes starting from Sigmund Freud's view of motivation being determined by basic human instincts and drives, conditioning theories related to behaviorists, such as Pavlov or Skinner, humanistic psychologists, such as Maslow and his famous Hierarchy of Needs, and the cognitive approach, which "(...) places the focus on how the individual's conscious attitudes, thoughts, beliefs, and interpretation of events influence their behavior; that is how mental processes are transformed into action".

As Ushioda (2008: 19) points out, the term motivation comes from the Latin word 'movere' meaning 'to move', which is in line with other experts' definitions of it, according to which, "(...) motivation concerns what moves a person to make certain choices, to engage in action, and to persist in action". (Dörnyei 2001a; Ushioda 2008; Williams and Burden 1997a). Dörnyei and Ottó (1998: 64) define motivation as "(...) dynamically changing

cumulative arousal in a person that initiates, directs, coordinates, amplifies, terminates, and evaluates the cognitive and motor processes whereby initial wishes and desires are selected, prioritized, operationalized, and (successfully or unsuccessfully) acted out". Another definition of motivation was presented by Williams and Burden (1997b: 120), who construe this concept as "a state of cognitive and emotional arousal, which leads to a conscious decision to act, and which gives rise to a period of sustained intellectual and/or physical effort in order to attain a previously set goal (or goals)".

As Dörnyei (2005a: 65) states, "without sufficient motivation, even individuals with the most remarkable abilities cannot accomplish long-term goals (...)". To sum up, Ellis (1994) claims that motivation is one of the most fully researched areas of individual differences. Motivation is composed of various factors and thus the discussion of this concept is inevitably complex. However, without focussing on the forces that drive learners' behaviour, teachers are unable to plan and carry out activities that result in long term educational gains.

One of the things that engages students is to show them that the knowledge they acquire can be useful to them in their lives. According to Dörnyei (2001a) teachers should take care to create conditions that enhance motivation to learn. He lists a selection of motivational strategies and techniques that teachers can draw from, depending on the environment and type of learners they teach:

- Appropriate teacher behavior (showing interest in students, maintaining good relationship with students, showing enthusiasm in teaching, presenting the benefits the learning outcomes may bring, seeing and appreciating the efforts students make)
- Noticing student effort and achievements (tracking and rewarding student progress, assessing students' work and effort, promoting confidence)
- Positive evaluation (teaching students to learn effectively, encouraging students to work hard , designing tasks at a level accessible to students)
- Create a pleasant atmosphere (introducing humorous elements avoiding assessing the social level of participants in classes, using short tasks at the beginning of classes)
- Correct input of tasks (clear instructions, explaining the importance of individual exercises in the learning process, paying attention to the goal of learning (learners' goalorientedness), catering for individual needs of students)
- Introducing inspiring educational tasks (breaking routine by introducing a variety of tasks, introducing interesting topics for discussion, introducing various (e.g. auditory

and visual) teaching aids, encouraging active participation in classes by inventing creative, activating tasks)

- Promoting cooperation of the group (encouraging students to share their personal experiences and expressing one's opinion on a given topic, allowing students to get to know each other, encouraging students to work to achieve a specific goal
- Promoting students' autonomous attitude

b. Scaffolding

Helping individual students achieve their potential is a complex issue. It needs a close cooperation of the institution, the teacher and the parents, all of whom may bring in valuable elements of scaffolding. Blended and distance learning is an environment where the learners' unique needs can be catered for. Individualization in blended and hybrid learning begins with the very selection of the educational platform. It is worth determining who will be the recipient of the lessons. What activities will be taken up by teachers, and what tools will be used. It is also crucial to establish the initial knowledge students bring into the classroom. The pace of implementing new content will also be important and needs to be adjusted to the individual learning pace of each student.

It is also crucial in hybrid education to establish ways and rules for students to communicate with teachers. Synchronous communication allows for instant reactions and on-the-spot practice. Asynchronous communication allows students to think about the topic, complete the task at their own pace, without the immediate confrontation with the opinion of others. However it also requires a level of self-discipline and coordination. It's perfect a way for teamwork because it allows for getting acquainted with the ideas of others and taking a stance to them at a convenient time. Each of us needs a different space and time to act, and there may be issues related to technology which may hinder synchronous communication. Therefore, even though it is burdensome for the teacher, not to fix rigid hours of learning and sending information feedback, it is inevitable in the educational process, especially in the context of the hybrid model. Teachers must be aware that students need time to think and digest the activities related to learning before moving on to next segment of the lesson. The processing of knowledge that leads to its assimilation will also have different timeframes. For the generalization of this process, it is worth using techniques for grounding and embedding knowledge within a specific framework. Assumptions and principles relevant here are those of

formative assessment, which is based on designing the end product of tasks, exercises, activities and giving constructive feedback on the outcomes.

Activities proposed to students for their independent work should also be individualized. Allowing for diversity and including students in the decision-making process makes the process more engaging for the learners. The content needs to be conveyed in different forms. Apart from text and links from ready-made resources there should be included interesting graphics, sound files and content created or co-created by the students interactive exercises, presentations, personalized videos. Short video collections lasting several minutes, simple messages in the form of recordings can be an extremely valuable help for students who prefer verbal communication to text. Also allowing students to submit their work in the form of recordings and videos may help students with communication disorders and those suffering from conditions from the autistic spectrum. The necessity to present knowledge live causes fear, and often inhibits future learning. Students with dyslexia may find it easier to make notes in a blended learning and distance learning environment by saving screencasts. Chrome extensions can be powerful a tool to help students with dyslexia in science. Dyslexia Friendly - an extension that increases readability of the text, making the fonts easier to read (OpenDyslexic) Working with the text is also facilitated by visual additions:

- contrast between paragraphs - highlighting another background color,
- line spacing - its width can be adjusted to text size
- OpenDyslexic Font for Chrome is an open source font, made for people with dyslexia to facilitate reading. After installing extensions, all fonts will be replaced on websites with OpenDyslexic font.
- Text to Speech Voice Reader - an extension that converts text to speech. For children with dyslexia, it will provide an alternative approach to use the content posted on the Internet. The program supports 40 languages.

It is very important in the learning process that the teaching methods and techniques are adjusted to the individual learning styles of students. Each of us is endowed with a distinctive way in which we process information, by which learning becomes more effective, easier and more enjoyable. The differences in learning styles are also very important in remote teaching environments. Students differ in the way they tackle information online, which may lead to anxiety and demotivation. It is therefore worth incorporating into daily online teaching techniques that facilitate various modes of learning, memorizing and reading, to equip students

with knowledge about chaining association techniques that will allow them to remember a sequence of elements in appropriate order. In addition, concept maps, i.e. two-dimensional representations of concepts and their mutual relations, can be helpful in learning and understanding relationships between concepts, but also in understanding and remembering new facts that relate to their existing knowledge or experience.

Another type of support structures are mind maps, which have the potential to increase work efficiency, memory, and activate intuition thanks to using both hemispheres. Students with autism and Asperger's syndrome prefer this method of learning. These graphical representations of ideas, concepts, relationships, groups of objects, etc., can be created analogically, traditionally with colored markers, but they can also be drawn on a smartphone, tablet, or PC, allowing students to facilitate not only graphics but also multimedia.

In case of distance and hybrid learning mode affective factors of learning are very important. One of the methods that makes students feel safe and confident but keeps them active as participants of the learning process is flipped classroom. Students get the outline of the tasks that will be dealt with during the lesson in advance and they prepare for the class to be able to do the tasks seamlessly. They start the lessons equipped with specific information on a given topic. They then have a chance for constructive polemics. This form of teaching requires the teacher to give up their position as an all-knowing expert, who is entirely responsible for steering the process and its effect, in favor of the role of a guide, who helps, explains and supports learners. The teacher ceases to be the only one, or even at least the primary source of information for the student. In the flipped lesson the student becomes active in the process of acquiring knowledge. To be able to successfully flip the lesson, the teacher should plan and prepare it well first.

Assessment is an inseparable element of formal school environment. In the environment of remote education, but also in case of hybrid one it may be ineffective. Focusing on assessments wastes the main goal of learning: creativity and discovering the secrets of knowledge. The traditional grading system and uniform criteria need to be adapted to the blended or distance environment. The grades need to take into account the process of student learning as well as the degree of achieving the learning goals. Each of the activities, tasks and lessons need to be guided by the assumption that they have a goal. The goal needs to be clearly communicated to the students in relation to the existing body of their knowledge. It's important to let them know that what matters in their assessment is not only achieving the goal, but also the way they have achieved it.

c. Autonomy

Hybrid and distance teaching relies on the learner's autonomy - the most important of the "soft" competences, the key to success. In a traditional school, students do not have to be independent. It is the teacher's responsibility to ensure that they learn. Blended learning introduces a completely different paradigm. The student receives materials from which he is to learn on his or her own. The included interactive exercises immediately make him aware of what he already knows and what he doesn't know. No grades, no risk of being laughed at by classmates. They work at their own pace, watch a movie again if they need it, and try the exercises again if they want a better grade. They know what they do not understand yet and what they have to ask the teacher – e.g. via private chat, or when they come to school. They become responsible for their own learning. They still care about grades, but they see them differently, because they are no longer a punishment, but a measure of their skills. And the exercises, with gradually increasing difficulty, without the reprimanding, omnipresent eye of the teacher, are like an addictive game.

In the professional literature, you can find many definitions of autonomy including different aspects. The concepts of autonomy present the learner as a person who is capable of directing his or her own learning, and plays an important role here are the motivational aspects. The need for autonomy may be innate, as can the need for contact with others. Still, there may be a margin of opportunity for teachers to prepare learners for autonomous activities, and then support them in these activities that may increase learner autonomy in the long run.

According to Komorowska (2007), 'autonomy' means the ability to work without supervision, the ability to transfer (transfer) mastered skills in new situations and the ability to move away from the beaten track, a mechanically applied pattern of learned behaviour. To Wilczyńska (2008), autonomy seems a rather general or even vague concept. It is frequently defined as the ability to take responsibility for one's own actions, which may cover a scope broader than learning. In another study, she writes that autonomy is a descriptive concept and expresses a person's real ability to be independent managing individual aspects of one's life.

The constructivist concept of school is to allow students for independent construction of knowledge. Knowledge in the constructivist model refers to the individual competences of learners and ways they use these competences in various situations. There is no single way to

acquire knowledge. The teacher takes into account and respects students' culture, individual learning styles and their favourite learning strategies. Active learning is essential in autonomy supportive teaching. Some of the approaches that have proved to instigate active learning are in a face-to-face environment are: Task based learning, Problem based learning, Flipped classroom. However they need to be re-evaluated to prove their usefulness in blended and distance education (Leon et al. 2021, Foo et al. 2021).

Learning strategies allow the learner to approach tasks with confidence, realistically assess competences and skills, assess the degree of difficulty tasks and choose the way of realising them. Treating the learner as a “responsible social entity that executes the right task using all possible potential [...]” makes autonomy correlate with an action-oriented approach to education. “An autonomous student is one who can skilfully use resources, effectively searches for the necessary information, adjusts strategies to tasks” (Wilczyńska 2008).

Learning strategies are essential skills for the autonomous student. Metacognitive strategies are responsible for the organization of the learning process myself. They relate to setting a goal, planning learning time, controlling the learning process (implementation of planned activities) and evaluation of the results as agreed criteria. According to Zormanová (2020), Metacognitive strategies enable learners to perceive problems and pose hypotheses regarding their formation and resolution, verification of these hypotheses, individual control of problem-solving processes, self-evaluation successes and failures.

Advanced metacognitive strategies are related to restructuring knowledge gained so far and concern the following important tasks:

- 1) the learner must be aware of the deficits in the knowledge gained so far;
- 2) students should be able to extract new information from other people's statements;
- 3) the student should have the ability to systematize knowledge.

Affective strategies are about relaxing while learning, for example by listening music; social strategies are the ability to cooperate with other people, making contacts.

Conclusions

As outlined in the chapters above, it seems not only feasible but also advantageous to implement blended and distance teaching practices in secondary vocational education. While it seemed alien and unnecessary before the Covid-19 pandemics, the experience gained during the introduction of online education on a massive scale has equipped both students and teachers with skills and understanding that used to be inaccessible to a vast majority. Capitalising on the experience seems not only sensible but necessary, taking into account the positive impact it may have on the long term prospects of the students and the system of education as a whole.

Nevertheless, as shown in the first part, the process of implementing blended and distance teaching needs a thorough consideration of the context: the needs and assets of the teachers, the institutions involved, and the infrastructure where they reside. It refers bot to the technicalities of the process (e.g. quality of hardware, reliability of the Internet connection, access to software) and the soft skills involved (e.g. knowledge of the assistive software, access to online/digital resources, revision of pedagogies and strategies, adaptation of interpersonal and sociolinguistic skills and practices). It is a proper mix of the variables described in parts two and three that results in highly satisfying, and effective learner experience – the aim of all educators.

While it is hard to recommend a single model that fits all possible learning environments and covers all areas of the educational process, the model described above may be helpful for educators to reflect on their practices, draw conclusions, or introduce some changes whether in the institutional policy, their everyday classroom practice or their overall attitude to teaching and learning. Each change gives rise to a possibility to compare the results with the previous ones and draw further conclusions, which constitutes perhaps the greatest value of the elaboration. Such action research, carried out locally, shared within the community of fellow educators and discussed with other major players of the area (industry, higher education, local government, ministry of education), may enable a long awaited change in the field of education. The investigations might also quickly pinpoint the lacks and needs on the local level regarding for example the tools that educators may need to implement their ideas in an online environment. It is the next stage of the work that introduces such tools, as selected bu the partners of the IDEA project.

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Appendix 1

A questionnaire scoping teachers' views regarding the issues encountered while implementing blended or distance teaching

- 1) What subject do you teach? Please specify _____
- 2) How long have you been teaching? Please specify with a number _____
- 3) Where is your educational institution located (choose one):
 - a) in a village
 - b) in a small town
 - c) in a city
- 4) Before the COVID-19 pandemics did you (choose all that apply):
 - a) use videoconferencing tools in your teaching (please specify what type: _____)¹
 - b) use learning management systems in your teaching (please specify what type: ____)²
 - c) use ICT tools / apps in your teaching (please specify what type: _____)³
- 5) During the COVID-19 pandemics did you (choose all that apply):
 - a) use videoconferencing tools in your teaching (please specify what type: _____)
 - b) use learning management systems in your teaching (please specify what type: ____)
 - c) use ICT tools / apps in your teaching (please specify what type: _____)
- 6) During the COVID-19 pandemics did you implement (choose all that apply):
 - a) blended teaching
 - b) distance teaching
 - c) both blended and distance teaching
 - d) none of the above
 - e) others (please specify _____)

¹ Videoconferencing tools such as e.g. Zoom, Cisco/Webex, MSTeams, Skype, etc.

² Learning management systems such as Moodle, Blackboard, Canvas, EdApp, etc.

³ ICT tools or apps such as e.g. Gmail, Canvas, YouTube, Padlet, Quizizz, etc.

7) Tick the issues that you encountered while implementing blended or distance teaching (choose all that apply):

- a) technical problems with equipment (please specify: _____)
- b) technical problems with internet connection (please specify: _____)
- c) technical problems with ICT tools / apps (please specify: _____)
- d) students' lack of motivation (please specify: _____)
- e) students' lack of readiness for autonomy (please specify: _____)
- f) students' anxiety (please specify: _____)
- g) designing activities for online classes (please specify: _____)⁴
- h) preparing scenarios for online classes (please specify: _____)⁵
- i) developing learning goals in online classes (please specify: _____)⁶
- j) evaluating student learning (please specify: _____)
- k) communication with students (please specify: _____)
- l) balancing diverse learners' needs (please specify: _____)
- m) disciplining students (please specify: _____)
- n) parental support (please specify: _____)
- o) time constrains /time management (please specify: _____)
- p) adaptation of your teaching style to blended / online teaching (please specify: _____)
- q) access to guidelines / methods / techniques of teaching online (please comment: _____)
- r) other(s) (please specify: _____)

8) Please specify your country of origin _____

9) Please specify your gender

- a) male
- b) female

10) Please specify your age group

- a) 21 – 30
- b) 31 - 40
- c) 41 - 50

⁴ E.g. clarity of instructions, time allocation, grouping, formulating requirements for particular grades, etc.

⁵ E.g. unbalanced teaching style (amount of theory vs practical tasks), unbalanced weekly/monthly task allocation, lack of measures to maintain students' attention, etc.

⁶ E.g. lack of clearly formulated requirements, lack of the possibilities to test the requirements, etc.

- d) 51 – 60
- e) over 60

Thank you very much for your participation.

Appendix 2

Questionnaire results

Table 1: Place of residence (country)

	Number of respondents	%
Poland	33	23,2
Romania	45	31,7
Spain	16	11,3
Portugal	34	23,9
France	2	1,4
Macedonia	11	7,7
Overall	141	99,3
Lack of data	1	,7
	142	100,0

Table 2: Gender of respondents:

	Frequency:	%
Female	106	74,6
Male	35	24,6
Lack of data	1	,7
Total	142	100,0

Table 3: Age of respondents

	Frequency:	% t
21-30 years	6	4,2
31-40 years	40	28,2
41-50 years	68	47,9
51-60 years	22	15,5
over 60 years	3	2,1
Lack of data	3	2,1
Total:	142	100,0

Table 4: Length of teaching experience

N	Number of responses	140
	Lack of data	2
	Mean	16,52
	Median	1750
	Standard deviation	8,036
	Minimum	1
	Maximum	43

Table 5: Length of teaching experience (non-categorised)

Years of experience	Frequency	Percent
from 1 to 10	33	23,6
from 11 to 20	71	50,7
from 21 to 30	31	22,1
Over 30	5	3,6
Total	140	100,0

Subject	Frequency	Percent
Mother language)	1	0,7
3D Design and Machining	1	0,7
Accountancy	1	0,7
Aesthetic and hair techniques	1	0,7
Aesthetic technical subjects	1	0,7
automatic systems	1	0,7
Biology	4	2,9
Biology; Natural Sciences and disciplines in the technological component of the human body area.	1	0,7
C.F. Technology and ICT	1	0,7
CAD design	1	0,7

Chemistry	5	3,6
CNC, machining, cutting technology	1	0,7
Commerce, Management, Accounting	1	0,7
Computer science	2	1,4
Dispensation of parapharmaceutical products. Basic laboratory operations.	1	0,7
Economics	2	1,4
Economy	1	0,7
Economy and Administration Accounting and Legislation	1	0,7
electronic equipment	1	0,7
Electrotechnical course	1	0,7
English language	28	20
English language and English didactics	1	0,7
French language	6	4,2
Management	2	1,4
Entrepreneurial skills and job search techniques	1	0,7
Expression area	1	0,7
Foreign language	1	0,7
French / Technical French	1	0,7
Geography	3	2,1
German language	2	1,4
History	1	0,7
History and Culture of the Arts	2	1,4
I love to interact with teens.	1	0,7
Romanian literature.	4	2,8
informatics, programming language	1	0,7
Integration area	1	0,7
Integration area; Citizenship and Current World; History of Culture and Arts	1	0,7
Integration, Citizenship and Current World, Psychology Area	1	0,7
Literature	1	0,7
Macedonian language	1	0,7
Management and Control, technical ITM and UDFD at CEF Employee Restaurant/Bar	1	0,7
Marketing	2	1,4
Mathematics	8	5,7
Mathematics, technology	1	0,7
Multiple electrical engineering subjects: Electrical appliances and devices; Electrical measurements and Energy efficiency	1	0,7
non formal education	1	0,7
Office apps, computer security, web applications	1	0,7
Personal image. Applied Sciences I. Makeup.	1	0,7
Philosophy	1	0,7
Physical education	4	2,9
Physics and Astronomy	1	0,7
Physics and Chemistry	2	1,4
Polish language	2	1,4

Portuguese language	2	1,4
Portuguese language and English language	1	0,7
Portuguese language and French language	1	0,7
Professional courses	3	2,1
Psychopathology and Health	1	0,7
Quality, food safety and hygiene management	1	0,7
Romanian language	1	0,7
Romanian language and literature	2	1,4
science	1	0,7
Social sciences (economics, psychology)	3	2,1
Sociocultural animation; Community and Social Intervention; Health Psychopathology; Expressions Area.	1	0,7
Sociology	1	0,7
Technical Area - Marketing	1	0,7
Technical Reception Operations, Floor Service, Accommodation Support Service, Counter Service and Cafeteria	1	0,7
Technical subjects	1	0,7
Technological area, "Kitchen/Pastry"	1	0,7
TIC	1	0,7
Vehicle electrical circuits and Auxiliary motor systems.	1	0,7
Vocational subjects of graphic design	1	0,7
Total	140	100,0

Table 6: Types of teaching implemented during the COVID-19

Types of teaching implemented during the COVID-19	Answers (multiple answers possible)		Percent of answers
	N	Percent	
Blended teaching	31	17,4%	22,1%
Distance teaching	63	35,4%	45,0%
Both blended and distance teaching	74	41,6%	52,9%
None of the above	3	1,7%	2,1%
Other (please specify)	7	3,9%	5,0%
Total	178	100,0%	127,1%

Table 7: Types of tools used before and during the COVID-19

Types of tools	Before:		During:	
	Frequency	[%]	Frquency	[%]
videoconferencing tools in your teaching (e.g. Zoom, Cisco/Webex, MSTeams, Skype, etc.)	16	24,1	119	83,8
learning management systems (LMS) in your teaching (e.g. Moodle, Blackboard, Canvas, EdApp, etc.)	18	25,3	79	55,6
ICT tools / apps in your teaching (e.g. Gmail, Canvas, YouTube, Padlet, Quizizz, etc.)	74	90,8	96	67,6

Table 8: Tools used before and during the COVID-19

Tools	Before:		During:	
	Frequency	[%]	Frequency	[%]
Canva	7	5,34%	10	7,63%
Google Classroom	5	3,82%	52	39,69%
Facebook	1	0,76%	1	0,76%
Gmail	31	23,66%	16	12,21%
Kahoot	16	12,21%	17	12,98%
Messenger	3	2,29%	2	1,53%
Moodle	13	9,92%	14	10,69%
Pinterest	1	0,76%	1	0,76%
Power Point	3	2,29%	1	0,76%
Quizziz/quizizz	9	6,87%	5	3,82%
Skype	22	16,79%	30	22,90%
Ms Teams	7	5,34%	30	22,90%
Viber	1	0,76%	0	0,00%
YouTube	42	32,06%	22	16,79%
Zoom	18	13,74%	62	47,33%
Whatsapp	2	1,53%	6	4,58%
Gotomeeting	1	0,76%	0	0,00%
Meet/googlemeet	11	8,40%	63	48,09%
Quizlet	2	1,53%	2	1,53%
Applications monitoring physical activity	2	1,53%	0	0,00%
Livewebinar	1	0,76%	1	0,76%
Gsuite	1	0,76%	1	0,76%
Google apps	2	1,53%	8	6,11%
Webex	3	2,29%	2	1,53%
Padlet	2	1,53%	3	2,29%
Story jumper	1	0,76%	0	0,00%
Book creator	1	0,76%	0	0,00%
Easycass	1	0,76%	0	0,00%
Prezi	2	1,53%	1	0,76%
Mail/email	4	3,05%	0	0,00%
Smartboard	2	1,53%	0	0,00%
Etwinning	1	0,76%	0	0,00%
Yoformulo	1	0,76%	0	0,00%
Sm educamos	1	0,76%	0	0,00%
Insam/inskam	0	0,00%	0	0,00%
Profession oriented software	21	16,03%	27	20,61%
None	18	13,74%	0	0,00%

Table 9: Problems encountered by teachers during COVID-19

Issues:	Answers		Percent of answers
	N	percent	

technical problems with equipment	59	6,9%	42,1%
technical problems with internet connection	100	11,6%	71,4%
technical problems with ICT tools	25	2,9%	17,9%
students' lack of motivation	98	11,4%	70,0%
students' lack of readiness for autonomy	74	8,6%	52,9%
students' anxiety	57	6,6%	40,7%
designing activities for online classes	45	5,2%	32,1%
preparing scenarios for online classes	26	3,0%	18,6%
developing learning goals in online classes	42	4,9%	30,0%
evaluating student learning	70	8,1%	50,0%
communication with students	46	5,3%	32,9%
balancing diverse learners' needs	49	5,7%	35,0%
disciplining students	33	3,8%	23,6%
parental support	33	3,8%	23,6%
time constrains /time management	33	3,8%	23,6%
adaptation of your teaching style to blended / online teaching	45	5,2%	32,1%
access to guidelines / methods / techniques of teaching online	24	2,8%	17,1%
other	1	0,1%	0,7%
Total	860	100,0%	614,3%

Table 10: Problems encountered by teachers during COVID-19 by country

Issues encountered while implementing blended or distance teaching. (Multiple answers were possible)			Country of origin					Total
			Macedonia	Poland	Portugal	Romania	Spain	
technical problems with equipment	tak	N	6	16	11	23	3	59
		%	54,5%	50,0%	30,6%	51,1%	18,8%	42,1%
V Kramera	0,247	8,562 ^a	4	0,073	0,074 ^b			
technical problems with internet connection	tak	N	10	24	25	33	8	100
		%	90,9%	75,0%	69,4%	73,3%	50,0%	71,4%
V Kramera	0,207	5,995 ^a	4	0,200	0,200 ^b			
technical problems with ICT tools / apps	tak	N	4	6	6	9	0	25
		%	36,4%	18,8%	16,7%	20,0%	0,0%	17,9%
V Kramera	0,211	6,240 ^a	4	0,182	0,182 ^b			
students' lack of motivation	tak	N	11	24	20	35	8	98
		%	100,0%	75,0%	55,6%	77,8%	50,0%	70,0%
V Kramera	0,305	13,016 ^a	4	0,011	0,011 ^b			
students' lack of readiness for autonomy	tak	N	2	17	27	16	12	74
		%	18,2%	53,1%	75,0%	35,6%	75,0%	52,9%
V Kramera	0,387	20,946 ^a	4	0,000	0,000 ^b			
students' anxiety	tak	N	5	11	16	21	4	57
		%	45,5%	34,4%	44,4%	46,7%	25,0%	40,7%
V Kramera	0,150	3,140 ^a	4	0,535	0,545 ^b			
designing activities for online classes	tak	N	5	7	14	11	8	45
		%	45,5%	21,9%	38,9%	24,4%	50,0%	32,1%
V Kramera	0,220	6,754 ^a	4	0,150	0,152 ^b			
developing learning goals in online classes	tak	N	5	6	7	8	0	26
		%	45,5%	18,8%	19,4%	17,8%	0,0%	18,6%
V Kramera	0,253	8,944 ^a	4	0,063	0,059 ^b			
preparing scenarios for online classes	tak	N	2	8	13	13	6	42
		%	18,2%	25,0%	36,1%	28,9%	37,5%	30,0%
V Kramera	0,126	2,208 ^a	4	0,698	0,715 ^b			

evaluating student learning	tak	N	6	15	14	27	8	70
		%	54,5%	46,9%	38,9%	60,0%	50,0%	50,0%
V Kramera	0,165	3,794 ^a	4	0,435	0,445 ^b			
communication with students	tak	N	6	9	9	17	5	46
		%	54,5%	28,1%	25,0%	37,8%	31,3%	32,9%
V Kramera	0,173	4,190 ^a	4	0,381	0,389 ^b			
balancing diverse learners' needs	tak	N	4	6	25	11	3	49
		%	36,4%	18,8%	69,4%	24,4%	18,8%	35,0%
V Kramera	0,436	26,558 ^a	4	0,000	0,000^b			
disciplining students	tak	N	2	9	2	15	5	33
		%	18,2%	28,1%	5,6%	33,3%	31,3%	23,6%
V Kramera	0,266	9,936 ^a	4	0,042	0,041^b			
parental support	tak	N	6	6	5	14	2	33
		%	54,5%	18,8%	13,9%	31,1%	12,5%	23,6%
V Kramera	0,276	10,653 ^a	4	0,031	0,030^b			
time constrains /time management	tak	N	4	5	8	14	2	33
		%	36,4%	15,6%	22,2%	31,1%	12,5%	23,6%
V Kramera	0,183	4,666 ^a	4	0,323	0,334 ^b			
adaptation of your teaching style to blended / online teaching	tak	N	4	7	10	12	12	45
		%	36,4%	21,9%	27,8%	26,7%	75,0%	32,1%
V Kramera	0,339	16,044 ^a	4	0,003	0,002^b			
access to guidelines / methods / techniques of teaching online	tak	N	3	5	7	8	1	24
		%	27,3%	15,6%	19,4%	17,8%	6,3%	17,1%
V Kramera	0,129	2,330 ^a	4	0,675	0,691 ^b			
other(s)	tak	N	0	0	1	0	0	1
		%	0,0%	0,0%	2,8%	0,0%	0,0%	0,7%
V Kramera	0,144	2,910 ^a	4	0,573	0,680 ^b			
factor	value	Chi-kwadrat	df	p	p Monte Carlo			

Table 11

10. Tick the issues that you encountered while implementing blended or distance teaching. Mul-tiple answers are possible:			Place of origin			Total
			1,00	2,00	3,00	
technical problems with equipment	tak	N	5	12	42	59
		%	55,6%	44,4%	40,4%	42,1%
V Kramera	0,078	0,855 ^a	2	0,652	0,648 ^b	
technical problems with internet connection	tak	N	7	17	76	100
		%	77,8%	63,0%	73,1%	71,4%
V Kramera	0,095	1,264 ^a	2	0,531	0,603 ^b	
technical problems with ICT tools / apps	tak	N	2	4	19	25
		%	22,2%	14,8%	18,3%	17,9%
V Kramera	0,046	0,299 ^a	2	0,861	0,935 ^b	
students' lack of motivation	tak	N	9	21	68	98
		%	100,0%	77,8%	65,4%	70,0%
V Kramera	0,202	5,690 ^a	2	0,058	0,060 ^b	
students' lack of readiness for autonomy	tak	N	4	16	54	74
		%	44,4%	59,3%	51,9%	52,9%
V Kramera	0,073	0,736 ^a	2	0,692	0,724 ^b	
students' anxiety	tak	N	1	10	46	57
		%	11,1%	37,0%	44,2%	40,7%
V Kramera	0,168	3,952 ^a	2	0,139	0,133 ^b	
designing activities for online classes	tak	N	3	9	33	45
		%	33,3%	33,3%	31,7%	32,1%
V Kramera	0,015	0,031 ^a	2	0,984	1,000 ^b	
developing learning goals in online classes	tak	N	0	3	23	26
		%	0,0%	11,1%	22,1%	18,6%
V Kramera	0,167	3,910 ^a	2	0,142	0,153 ^b	
	tak	N	2	8	32	42

preparing scenarios for online classes		%	22,2%	29,6%	30,8%	30,0%
V Kramera	0,046	0,290 ^a	2	0,865	0,904 ^b	
evaluating student learning	tak	N	6	16	48	70
		%	66,7%	59,3%	46,2%	50,0%
V Kramera	0,135	2,541 ^a	2	0,281	0,319 ^b	
communication with students	tak	N	4	9	33	46
		%	44,4%	33,3%	31,7%	32,9%
V Kramera	0,066	0,610 ^a	2	0,737	0,812 ^b	
balancing diverse learners' needs	tak	N	2	5	42	49
		%	22,2%	18,5%	40,4%	35,0%
V Kramera	0,193	5,195 ^a	2	0,074	0,070 ^b	
disciplining students	tak	N	2	4	27	33
		%	22,2%	14,8%	26,0%	23,6%
V Kramera	0,103	1,488 ^a	2	0,475	0,497 ^b	
parental support	tak	N	5	8	20	33
		%	55,6%	29,6%	19,2%	23,6%
V Kramera	0,220	6,748 ^a	2	0,034	0,026 ^b	
time constrains /time management	tak	N	1	8	24	33
		%	11,1%	29,6%	23,1%	23,6%
V Kramera	0,098	1,340 ^a	2	0,512	0,564 ^b	
adaptation of your teaching style to blended / online teaching	tak	N	2	10	33	45
		%	22,2%	37,0%	31,7%	32,1%
V Kramera	0,071	0,711 ^a	2	0,701	0,732 ^b	
access to guidelines / methods / techniques of teaching online	tak	N	3	6	15	24
		%	33,3%	22,2%	14,4%	17,1%
V Kramera	0,139	2,693 ^a	2	0,260	0,251 ^b	
other(s)	tak	N	0	0	1	1
		%	0,0%	0,0%	1,0%	0,7%
V Kramera	0,050	0,349 ^a	2	0,840	1,000 ^b	
współczynnik	wartość	Chi-kwadrat	df	p	p Monte Carlo	

Table 12

10. Tick the issues that you encountered while implementing blended or distance teaching. Mul-tiple answers are possible:			13. Please specify your gender		Ogółem
			male	female	
technical problems with equipment	tak	N	43	16	59
		%	41,0%	45,7%	42,1%
Phi	-0,042	0,244 ^a	1	0,621	0,694
technical problems with internet connection	tak	N	76	24	100
		%	72,4%	68,6%	71,4%
Phi	0,037	0,187 ^a	1	0,666	0,829
technical problems with ICT tools / apps	tak	N	20	5	25
		%	19,0%	14,3%	17,9%
Phi	0,054	0,406 ^a	1	0,524	0,618
students' lack of motivation	tak	N	74	24	98
		%	70,5%	68,6%	70,0%
Phi	0,018	0,045 ^a	1	0,831	1,000
students' lack of readiness for autonomy	tak	N	51	23	74
		%	48,6%	65,7%	52,9%
Phi	-0,149	3,096 ^a	1	0,078	0,117
students' anxiety	tak	N	41	16	57
		%	39,0%	45,7%	40,7%
Phi	-0,059	0,483 ^a	1	0,487	0,553

designing activities for online classes	tak	N	31	14	45
		%	29,5%	40,0%	32,1%
Phi	-0,097	1,321 ^a	1	0,250	0,297
developing learning goals in online classes	tak	N	20	6	26
		%	19,0%	17,1%	18,6%
Phi	0,021	0,063 ^a	1	0,802	1,000
preparing scenarios for online classes	tak	N	28	14	42
		%	26,7%	40,0%	30,0%
Phi	-0,126	2,222 ^a	1	0,136	0,201
evaluating student learning	tak	N	54	16	70
		%	51,4%	45,7%	50,0%
Phi	0,049	0,343 ^a	1	0,558	0,697
communication with students	tak	N	32	14	46
		%	30,5%	40,0%	32,9%
Phi	-0,088	1,079 ^a	1	0,299	0,406
balancing diverse learners' needs	tak	N	36	13	49
		%	34,3%	37,1%	35,0%
Phi	-0,026	0,094 ^a	1	0,759	0,839
disciplining students	tak	N	24	9	33
		%	22,9%	25,7%	23,6%
Phi	-0,029	0,119 ^a	1	0,730	0,819
parental support	tak	N	27	6	33
		%	25,7%	17,1%	23,6%
Phi	0,087	1,071 ^a	1	0,301	0,363
time constrains /time management	tak	N	24	9	33
		%	22,9%	25,7%	23,6%
Phi	-0,029	0,119 ^a	1	0,730	0,819
adaptacja stylu nauczania do nauczania hybrydowego / na odległość - adaptation of your teaching style to blended / online teaching	tak	N	26	19	45
		%	24,8%	54,3%	32,1%

Phi	-0,274	10,490 ^a	1	0,001	0,002
access to guidelines / methods / techniques of teaching online	tak	N	16	8	24
		%	15,2%	22,9%	17,1%
Phi	-0,088	1,073 ^a	1	0,300	0,438
other(s)	tak	N	1	0	1
		%	1,0%	0,0%	0,7%
Phi	0,049	0,336 ^a	1	0,562	1,000
factor	value	Chi-kwadrat	df	p	p exact

