



SCHOOLS TOWARD THE 3E: ETOOLS, EMODERATION AND EASSESSMENT
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ONLINE PRACTICES ADOPTED IN THE CONTEXT OF COVID-19 PANDEMIC

the case of 4 schools in Portugal, Austria, Sweden and Turkey



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INTRODUCTION

The COVID-19 pandemic had a profound effect on education systems worldwide, significantly limiting educational opportunities for students at all levels, particularly those from impoverished backgrounds, marginalized groups, and those with disabilities. The pandemic's impact was felt both directly through health-related issues and indirectly through economic hardship, food insecurity, domestic violence, and other societal disruptions. This resulted in disruptions that affected over 1.7 billion learners globally, including nearly all students in low and lower-middle-income countries.

Although only about 2% of the global population (168 million people) had contracted the virus by May 27, 2021, a year after its initial detection in Wuhan, China, and only 2% of those infected (3.5 million) died from it (World Health Organization, 2021a), the pandemic's broader impacts were substantial.

The pandemic prompted a range of policy responses aimed at curbing the virus's spread, with social distancing measures significantly impacting work, business operations, and social gatherings, including education. The shift from in-person to remote learning obstructed educational engagement, leading to increased disengagement and school dropouts. Despite efforts to continue education through alternative methods, their effectiveness and reach varied, impacting students differently based on their social circumstances.

Moreover, the pandemic's indirect effects exacerbated challenges for families supporting children's education. Economic downturns led to increased food insecurity and mental health issues, further hampering educational opportunities. The learning environment at home, often shared with other family duties and limited resources, including connectivity and digital devices, added to the strain. The ongoing uncertainty of the pandemic created a stressful and traumatic backdrop that distracted from educational focus and commitment.

The pandemic also stretched the capabilities of education systems and schools, overburdening leaders and administrators already facing the same stressors as students and teachers. This strain reduced their capacity to manage and improve educational programs effectively, impacting routine operations and advancement efforts within schools.

Surveys conducted by UNESCO, UNICEF, and the World Bank highlight significant disparities in educational responses related to the economic status of countries. By the end of September 2020, schools in high-income countries had closed for an average of 27 days, while this number increased to 40 days in middle-income countries, 68 days in lower middle-income countries, and 60 days in low-income countries.

As schools began to reopen, most countries did not have plans to systematically evaluate students' levels of knowledge and skills, and national assessments were generally put on hold. The timing and methods of reopening schools varied widely both between and within countries. Some nations provided both in-person and remote learning options, allowing students to choose their preferred mode of education, whereas others offered no such choice. The degree of in-person instruction available once schools reopened also varied. While some schools and countries implemented strategies to address learning losses as students returned, this was not a universal practice.

This study will specifically examine the online educational practices adopted during the COVID-19 pandemic, focusing on four distinct school systems in Portugal, Austria, Sweden and Turkey. The objective is to understand how these diverse educational contexts adapted to the challenges posed by the pandemic through the integration of online learning. Each of these countries represents a unique approach to education in terms of cultural, economic and technological readiness, which influences their adaptation strategies.

METHODOLOGY

This study aims to investigate how online educational practices that were adopted during the COVID-19 pandemic by analyzing the experiences of four schools in Portugal, Austria, Sweden, and Turkey. The methodology adopted for this research is structured to ensure a comprehensive understanding of the differing educational strategies that emerged during the pandemic, influenced by each country's socio-economic and cultural contexts.

This study has three components:

- a) Description of secondary education educational organization (ISCED 2-3).
- b) The institutional approach that each country in the Partnership followed regarding distance learning during the pandemic, located at two levels (national and school)

The methodology used is framed qualitative research, through the treatment of documentary, interpretative, exploratory and descriptive data. As for the data sources, the information contained on the websites of the national authorities / educational regions of the consortium member country will be considered as well as national and international reports. A protocol was created to identify and select the information to be collected.

- c) Creation of a survey that allows for evaluating which eTools, eModeration and eAssessment strategies were applied by the teachers and which they considered the most successful.

To systematically explore the online educational practices adopted during the COVID-19 pandemic across four diverse educational settings, this research employs a methodologically approach comprising several key steps designed to ensure thorough data collection, analysis, and dissemination of findings:

1. Educational System Characterization

Initially, the study will characterize the secondary education systems (ISCED 2-3) of each country involved in the study. This characterization will provide a foundational understanding of how each educational system is structured and how it responded to the pandemic's challenges. This milestone was crucial for contextualizing the subsequent findings and ensuring that comparisons across different systems are meaningful and informed.

2. Development of Survey Instrument

To gather detailed data on the transition to online learning, a questionnaire was developed. This questionnaire focused on capturing the strategies schools and teachers used for eTools, eModeration and eAssessment during the pandemic. The survey will also seek to identify which of these strategies were considered most effective by educators and why. This step is vital for understanding the practical aspects of online teaching and learning during the pandemic and identifying best practices. The survey was first created in English and then translated for each partner language. All the translations of this survey are in annex. After this process was conducted a pilot.

3. Data Collection Strategy

The survey was administered to a broad sample of teachers across the four countries to ensure diverse perspectives are captured. This will include both qualitative and quantitative questions to gather comprehensive data on the educators' experiences and the effectiveness of different online teaching strategies.

4. Analytical Approach

Once data is collected, a detailed analysis will be conducted. This will involve both qualitative analysis, to interpret the textual data and understand the nuances of each educational context, and quantitative analysis, to measure the prevalence and effectiveness of different strategies. This dual approach will allow for a deeper understanding of the data, enabling the study to identify patterns and outliers in the adoption of online educational practices.

5. Reporting and Knowledge Dissemination

The final phase of the methodology involves compiling the findings into a detailed report. This report will outline the methodologies used, the data collected, the analysis conducted, and the conclusions drawn. It will be designed to be accessible to a wide audience, including educators, policy makers, and academic researchers. The report will be published on the project website and translated into several languages to ensure it reaches a broad audience.

AUSTRIA

PRINCIPLES AND ORGANIZATION

In Austria, education is still based on a reform by Empress Maria Theresia from 1774, later developed into the Imperial Elementary School Act from 1869 which made school education compulsory for six- to eight-year-olds. In 1924, general secondary school was introduced and from 1962 school has been compulsory for all Austrian children from six to 14 years of age. In 2009 a new middle school type was introduced and teacher training has been reformed continuously over the years.

The idea of the Austrian school system is to give pupils the chance to enhance their critical skills and provide them with ways of developing individual skills as well as general knowledge. Testing has been reformed over the past years to introduce more student and skills focused testing.

The Federal Ministry of Education, Science and Research is responsible for designing, implementing and coordinating all policies regarding the Austrian education system. All federal states in Austria have their own directories who then implement the policies and changes on the regional level.

STRUCTURE

Compulsory education lasts for 9 years, spanning four years of primary school, four years of lower secondary school and one year of upper secondary school. Furthermore, young adults are required to then either continue attending school or learn a profession until they are 18 years old.

The Austrian education system is divided as follows:

Kindergarten and pre-school (ISCED 0)

Kindergarten in Austria is free of charge and two years of kindergarten are compulsory. Pre-school education is optional but also free of charge. Kindergarten starts at three years at the earliest and can continue up until the age of six or the beginning of primary school education.

Primary school (ISCED 1)

Primary school in Austria is compulsory for all children aged six to ten, is free of charge and lasts for four years. There are no different school types at this level and pupils are sent to schools according to the district or municipality they live in.

Secondary school (lower secondary level) (ISCED 2)

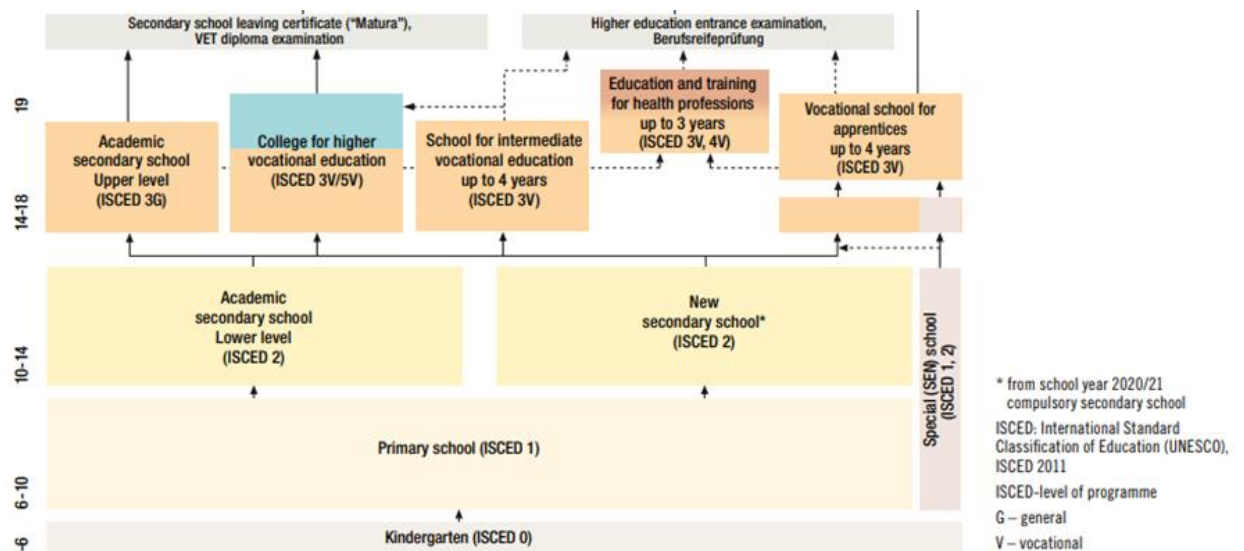
At this level students can choose between two types of schools. The academic secondary school (grammar school) and the general middle school. Both last for four years, are free of charge and compulsory for children. The curricula are slightly different but both types aim to prepare the students for the next level.

Secondary school (upper secondary level) (ISCED 3G, 3V/5V, 3V, 4V)

The upper secondary school level is comprised of one year of compulsory education (ninth school year) and two, three or four more years of school, depending on the school type chosen. Before leaving the lower secondary school level, students in Austria need to choose which school type they will attend afterwards. They can continue the academic school (grammar school, for four years) or attend a college for higher vocational education (for three or five years) or a school for intermediate vocational education (up to four years). After completing the ninth school year, students can also elect to attend the education and training for health professions (up to three years) or learn a profession and attend the vocational school for apprentices (up to four years).

The academic school and the college for higher vocational education both provide the students with a school leaving exam called the Matura which allows them to attend university. Alternatively, students can pass a higher education entrance examination after completing one of the other options which also allows access to the free of charge university system.

The following chart shows the structure of the Austrian education system:



BASIC STATISTIC INFORMATION

Table 1:
Key data on education and population statistics, 2010/11, 2017/18 and 2018/19

	2018/19		2017/18		2010/11	
	All	of which females %	All	of which females %	All	of which females %
Children in kindergartens ¹	239 469	48.6	236 075	48.6	217 709	49.1
Children in 1st classes of Primary schools	86 255	47.8	86 461	48.0	81 488	48.4
Students in grade 9	90 748	50.4	91 464	49.7	97 873	50.5
Students in graduation (Matura) classes of secondary schools ²	46 850	56.5	47 381	56.7	45 834	56.8
of which in VET courses	2 701	72.0	2 657	72.7	1 828	77.5
New entrants at universities and Fachhochschulen ³	70 877	56.9	70 842	56.3	68 197	57.0
Students at universities and Fachhochschulen ⁴	376 700	54.5	382 945	54.0	339 930	54.2
Students in degree programmes ⁵	340 086	53.9	346 680	53.3	316 806	53.7
Graduates from universities and Fachhochschulen ⁶	36 540	58.5	35 458	57.6	36 166	57.2
Births ⁷	85 535	48.8	87 633	48.4	78 742	48.8
Resident population ⁷	8 837 707	50.8	8 795 073	50.8	8 387 742	51.3
Resident population with completed secondary education ^{7,8}	5 777 993	48.7	5 739 039	48.5	5 239 900	47.8
Proportion in % of age cohort						
Children in kindergartens ¹	93.4	93.8	93.4	93.8	90.7	91.0
Graduates from (upper) secondary schools ⁹	48.1	55.8	47.5	55.6	42.9	49.3
Resident population with completed secondary education ^{7,8,10}	86.3	83.5	85.9	83.1	83.8	79.3
Proportion of higher education graduates ^{8,11}	21.2	23.7	20.9	23.5	16.7	18.0

- 1 Children aged 3 to 5 years (age as at September 1) in public and private nurseries, kindergartens, day-homes and mixed-age child care institutions and as a share of the same age group of the population.
- 2 Students in graduation classes of secondary schools with Matura school leaving certificate (higher education entrance qualification), school year; including VET courses.
- 3 New entrants in university degree programmes, Fachhochschule degree programmes, University Colleges of Teacher Education and at private universities; respective academic year.
- 4 Total of all students in degree programmes and course students.
- 5 Students in degree programmes at universities, universities of applied sciences, universities of teacher education, and private universities, winter terms.
- 6 First degrees of students (diploma, bachelor); respective academic year.
- 7 Calendar years 2018, 2017 and 2010; births: live births; resident population: annual average.
- 8 Microcensus annual average.
- 9 As 2, without VET courses, in relation to the average of the corresponding age group (arithmetic mean of the 18 to 19 year old resident population).
- 10 Proportion of persons aged 25 to 64 years with at least completed secondary education in relation to the resident population of the same age group.
- 11 Proportion of persons aged 25 to 64 years with completed higher education or equivalent study programmes (Universities, Fachhochschul courses, University Colleges of Teacher Education) in relation to the labour force of the same age group.
- n.a. – Not available.

Adapted from file:///C:/Users/mueller/Downloads/stat_tb_2019_e.pdf, 12 September, 2023.

**Table 10 (continued):
Teaching staff by school type and federal province, school year 2018/19¹**

Type of school ²	Salzburg		Styria		Tyrol		Vorarlberg	
	All	female %	All	female %	All	female %	All	female %
Total for all types of schools (incl. statutes)	8 519	69.3	15 385	71.8	10 864	67.2	6 574	69.6
All mainstream schools	8 314	69.5	15 097	71.8	10 725	67.1	6 493	69.6
General schools (incl. statutes)	6 349	75.7	11 671	77.5	8 178	72.8	5 188	75.5
Compulsory schools, total	4 682	81.2	8 434	82.1	6 515	76.1	4 313	79.3
Primary schools	2 100	91.9	4 146	92.0	3 033	87.7	1 946	89.7
New secondary schools	2 069	71.7	3 816	73.0	2 925	65.5	1 836	68.8
Special (SEN) schools and classes	374	86.0	221	86.4	336	80.5	407	85.9
Pre-vocational schools	138	50.0	252	54.9	221	52.5	124	48.1
Academic secondary schools	1 557	60.6	3 077	65.0	1 582	58.6	849	56.2
Other general schools (statutes)	110	54.5	160	71.3	81	79.0	26	76.9
Schools and Colleges for vocational education (incl. statutes)	2 170	50.6	3 714	53.9	2 686	50.4	1 386	47.7
Vocational schools for apprentices³	347	36.6	615	33.7	499	33.3	289	29.4
Schools for intermediate & Colleges for higher voc. ed., total	1 728	52.4	2 972	57.4	2 129	53.6	1 042	51.4
Technical and crafts schools and colleges (in a narrower sense) ⁴	588	28.4	1 042	29.8	651	26.2	345	24.9
Schools and Colleges of tourism	134	50.0	44	43.2	167	56.9	64	52.6
Schools and Colleges of business administration	332	62.3	569	68.0	497	59.4	307	60.9
Schools and Colleges of management and the service industries	360	78.4	526	82.7	378	79.0	210	76.3
Schools and Colleges for social professions	9	72.0	35	80.1	-	-	-	-
Schools and Colleges for agriculture and forestry ⁵	191	42.4	479	64.9	244	58.6	60	45.0
Educational colleges ⁶	114	83.3	276	77.9	192	72.4	56	75.0
Other technical and vocational schools (statutes)	95	69.8	127	70.5	58	81.0	55	72.7

1 Not including staff on maternity or educational leave; including part-time staff ("head count").

In comparisons with previous years please note that figures published up to and including the school year 2007/08 included staff on leave.

2 Not including Schools for medical services and Federal sports academies (Intermediate schools for teacher training).

3 Not including teachers at Vocational schools for agriculture and forestry for apprentices.

4 Including teachers at Schools of clothing and arts & crafts.

5 Including teachers at Vocational schools for agriculture and forestry for apprentices.

6 Until 2015/16: Higher colleges for teacher training.

Due to factoring in allocating teaching staff to types of schools, some rounding differences may occur in totals for types of schools.

voc. ed. – Vocational education.

Source: Statistics Austria – Education documentation

NATIONAL APPROACH TO EDUCATION DURING PANDEMIC

From 16 March in 2020, a nine-week (first) lockdown began for Austrian schoolchildren, including distance learning, mostly via online learning platforms and online learning tools. Neither teachers nor children were prepared for this. Parents' help was heavily relied upon. Therefore, in the first two weeks, only familiar subject areas were repeated and deepened. Teachers and learners were introduced to the Microsoft Teams communication platform in a kind of crash course. New learning material was only taught from the third week onwards. Modern, crisis-adapted lessons were initially only delivered by motivated teachers on their own initiative. The offer to attend school, which applied to children whose parents could not take care of them for work-related reasons, was accepted by only 1%. In-person teaching started again in mid-May but with a mask requirement and shift work, i.e. the class was divided into two and you only went to school every other day while you continued to spend the other day in homeschooling. In addition, there were strict hygiene measures and a mask requirement

throughout the school area. After the Pentecost holidays, the mask requirement fell. The start of school in September, in compliance with hygiene measures and distance regulations, went on normally until the autumn break. The newly introduced Corona traffic light changed according to infection numbers and provided information about the mask and distance learning situation. From November 3, 2020, Austria's schools went back to distance learning. There were further school closures and other Austria specific regulations until 2022, which will be discussed below.

Measures during the Covid-19 Pandemic

- School during the Lockdown: There were also widespread school closures during the lockdown phases. Classes were switched to distance learning.
- Masks in class: In the upper grades, (FFP2-) masks were required and in the lower levels (MNS) masks were also required in the classroom.
- Suspension of school events lasting several days with overnight stays.
- Temporary closures of classes if the number of infections was high
- Comprehensive testing (antigen test every day + 2 times PCR) verification through the so-called Ninja Pass. The Ninja Pass was a test pass for Austrian students. The tests were carried out at schools; the pass served as proof of access to all areas where children and young people were required to present a negative test result.
- Hybrid system: In the phases with higher case numbers, a switch was often made to hybrid teaching, in which students were taught alternately at school and from home in order to reduce the class size and thus the risk of infection.
- Possibility to stay away from lessons for vulnerable children/young people upon presentation of a specialist medical certificate.
- Corona traffic lights in schools: The Corona traffic lights aim to minimize the need to intervene in the education system in the event of local Corona outbreaks. The respective traffic light color is determined by the regional health authority and defines the precautions and rules that are in force in the respective region to best limit the spread of Corona.

The traffic light rules were defined differently in the individual school levels. Different rules applied at elementary schools, middle schools and in the upper levels. This is discussed in more detail in the chapter School Approaches to support teaching during Pandemic.

From autumn 2020, a new concept was introduced where the main focus was on hygiene and prevention. Washing your hands, keeping your distance and ventilating should prevent another lockdown.

In the fight against COVID-19, rapid tests were introduced in schools from December 2020. So-called gargle tests were used at elementary schools, and antigen tests were used at other school levels.

Covid 19 measures in connection with distance learning

Due to the Covid-19 pandemic and the associated limited operations at schools, the IT equipment purchased for federal schools was made available on loan and for a limited period of time to students who did not have the relevant equipment. This was intended to enable all students to participate in lessons through “distance learning”.

There was also a quarantine and isolation rule: people who tested positive for Covid-19 or had close contact with infected people had to go into quarantine or isolation to prevent the spread of the virus.

Use of digital media

The Covid-19 pandemic has made the need for digitalization in schools worldwide particularly clear, as teaching in many places had to be switched to online and distance learning due to school closures. In Austria, efforts were also made to promote digitalization in schools during this phase.

There was no mandatory online tool from the federal government or the Federal Ministry that teachers had to use during the corona pandemic. The willingness of teaching staff to work with digital media increased during this time.

Most are/were well equipped with digital devices and the majority of teachers had high-speed internet access. A large part of the population did not believe it was justified to have to spend private financial resources on teaching with digital media. The government reacted to this and tried to counteract this through reforms and tax relieves.

In over half of the schools, online lessons were combined with additional learning materials. Over three quarters of the teachers taught via video conference. Tools such as Zoom, MS Teams and Google Meeting were mainly used for this. These tools allowed lessons to be held in real time and offered the possibility of direct interaction between students and teachers. In only a few schools, the headmasters gave teachers specific instructions for distance learning and used self-selected apps, learning platforms and websites. Most teachers found distance learning to be more stressful and they had a higher workload. In addition, many had difficulties separating work and private life. Teachers received training on how to use digital tools and create effective online lessons.

The pandemic has shown that digitalization in education is an important step towards flexibility and resilience. These digitalization trends in schools are expected to continue to gain traction in the post-Covid-19 era and continue to influence the way education is delivered.

Psyche and school life

During the Corona pandemic, a situation arose in which the normal school situation of face-to-face teaching was abolished and changed in various ways through measures such as lockdowns and homeschooling. For example, there was a lack of interaction with school colleagues and a lack of structure of face-to-face teaching. In addition, the effects of the corona pandemic also had an impact on people other than students, such as their parents, in the form of home offices or increased stress due to worries about the future and the lives of students. These novel

circumstances also meant changes in the impact and importance of the variables listed in the previous sections that influence student teaching and learning.

SCHOOL APPROACHES TO SUPPORT TEACHING DURING PANDEMIC

At the beginning of 2020 important areas changed for the Austrian society. This included the school and education system and the everyday work of more than 128,000 teachers in Austria. Because of the new virus (SARS-CoV-2) the 2020 summer semester in Austria was unlike any previous semester and one in which all educational institutions had to manage many new challenges.

During the corona pandemic, Austrian schools had to adapt to many different regulations and teaching methods specified by the federal government. Between 2020 and 2022 there were four lockdowns in Austria with exit restrictions. During the lockdowns, only distance learning or homeschooling were possible. Between the lockdowns, depending on the number of infections, class divisions and face-to-face teaching under strict hygiene measures were possible. For the class divisions the school classes were divided into two groups of equal size. During a school week, group A was at school on Monday and Tuesday and group B was at school on Wednesday and Thursday. On Friday, all students were at home for online lessons. On the days off, students had to complete work assignments and they could get help from teachers if necessary. It was also possible to stream face-to-face lessons for the group of students at home via the Internet. At school, the students were tested every 48 hours and wearing FFP2 masks was mandatory.

There were no guidelines that the teachers could use for distance learning at the beginning of the pandemic. Because of the limited knowledge of distance learning, there were major differences in implementation. The differences ranged from the federal states to schools and school levels down to the individual teachers. In addition, the distance learning was also very variable, because a key aspect was the digital equipment and knowledge of those affected. Although basic digital education has been included in the Austrian curricula for years, there were and are still big deficiencies in its implementation. Some schools and households were better equipped and others had almost no opportunities to implement distance learning.

The training of teachers about the use of digital media in lessons - or in this case in distance learning - was also inadequate in some cases. It was only because of the COVID-19 pandemic that the Austrian education system received a boost towards digitalization, which was intended to prepare teachers and students for digital life, which will become increasingly present in the future. Many experts agree that the COVID-19 pandemic was the most effective digital training measure for teachers in Austria.

Because the Federal Ministry did not provide any precise guidelines for the distance learning, teachers in Austrian schools were free to choose how they would organize distance learning

with their class. The aim of distance learning during the first lockdown was primarily to repeat and consolidate content that had already been learned. After a long familiarization phase, teachers were allowed to introduce new teaching and learning content. It was important that the teachers chose the learning content in such a way that the students were in no way overwhelmed and that an adapted knowledge transfer could be guaranteed.

The majority of the asked teachers made a combination of digital and analogue learning options. The tasks were mostly transmitted to the students via Microsoft Teams, LMS (learning management system) or Schoolfox. These could be learning packages or online sequences. Many teachers used a weekly plan which was sent to the students online. The students then had to complete the work assignments in books or on worksheets based on the plan and send the results back to the teachers. A big challenge for the teachers was to correct assessment of the worksheets that were handed in. It often happened that individual students simply copied the results from classmates or sent back texts that had been copied online. The teachers had to spend a lot of time checking the work sheets precisely in order to be able to assess all students correctly. Conversely, it was also a much higher workload for many students, because work assignments suddenly had to be completed in each subject, some of them took more time than the specified lesson and had to be sent back to the respective teachers in time. Teachers also often used digital services such as online sequences, voice messages, or learning videos.

Austrian schools were particularly ill-prepared for the first lockdown and the associated distance learning. At the beginning, the teachers were on their own to organize their lessons via distance learning. Each teacher used different digital learning platforms such as LMS (learning management system), Microsoft Teams and Zoom or they communicated with the students via email. Because there were often no uniform regulations for distance learning in schools, the students suddenly had to communicate with the teachers on many different online platforms. This led to some confusion for students because many different tools had to be used at the same time. Another challenge at the beginning of distance learning was the high number of work assignments that students had to process and upload, because at that time, teachers still held few video conferences and completing the work assignments took up more than the teaching time according to the timetable. The schools instructed teachers to reduce the teaching content and to primarily repeat content that had already been completed, because of the circumstances a high learning speed could not be expected. In summary, we can say that schools in Austria were still very unprepared for digital online teaching and distance learning at the beginning of the pandemic. At this time, the Austrian education system was also criticized by education experts for having previously invested much too little in digital equipment and training. Many teachers had never worked with digital learning platforms or digital tools in class before and had to completely retrain themselves for teaching.

After the initial difficulties at the beginning of the pandemic, training courses on digital learning platforms and online tools were organized in schools, most of them were presented by IT teachers or teachers who had already worked with the relevant tools. The aim of these internal school training courses was to use uniform learning tools so that one learning platform was used

in all teaching subjects. Thereby students and teachers did not have to work with several applications at the same time. Most schools used Microsoft Teams or LMS (learning management system) for teaching.

Another challenge in online teaching was the digital equipment of students and teachers. It often happened that internet access wasn't available or the internet connection did not work well. Families with several school-age children were particularly affected. Many schools made free and used notebooks available to individual students who did not have good electronic equipment at home. During the pandemic in Austria there were also some positive changes in the way digitalization was handled. According to a study by the Austrian Chamber of Labor at the beginning of the pandemic 16 percent of students did not have a device to take part in distance learning, after the pandemic it was only 2 percent.

During the COVID-19 pandemic, the federal government created an 8-point plan for digitalization. This plan, worth 250 million euros, should enable a combination of modern and digital infrastructure and aim for the successful development of digital education. The goals of this plan include preparing all teachers for digitally supported instruction and implementing a uniform process at schools regarding the used learning and communication systems. These should enable clear structures and form a transformation of the infrastructural framework. The eight points of the plan are briefly described below.

Portal Digital School

The Digital School Portal as part of the 8-point plan for digital teaching was designed by the Federal Ministry of Education, Science and Research as part of the work on the master plan for digitalization in education. The aim of the initiative was to bundle existing applications in order to provide teachers and students with clear information that is easy to use, and to support them in everyday school life in a variety of ways.

Uniform communication processes:

The experience with distance learning during the COVID-19-related school closures showed that the different use of diverse learning platforms and communication tools by teachers was perceived as disadvantageous by students and guardians. Therefore, the recommendation was made to reduce the learning management and communication systems to one solution per location. The Distance Learning Service Portal provides assistance for the unification of the systems.

Distance learning MOOC:

A Massive Open Online Course (MOOC) prepares educators for teaching distance learning settings, using information and communication technologies. As a virtual format, the MOOC is a complement and extension of the extensive offerings at colleges of education. The distance learning MOOC is offered as a nationwide training event. The course takes place in a virtual learning environment in which an unlimited number of people can participate.

Eduthek:

As a digital content platform, the Eduthek provides in-depth exercise materials for all types of schools and teaching subjects. The Eduthek bundles content offerings using a uniform catalog system and makes them available to teachers and students with comprehensive metadata research and full-text searches. It offers clearly prepared learning and practice material for students of all school levels to practice at home and to deepen learning material.

Seal of approval for learning apps:

The objective is to evaluate and certify apps for mobile learning as well as for use in distance learning. The seal of approval is intended to provide parents, teachers, and students with orientation and assistance in selecting innovative products that are already on the market. The certified apps can also be purchased as teaching aids of their own choice as part of the "Free Textbooks" campaign.

Expansion of the school's basic IT infrastructure:

In order to take full advantage of digitization in education and to promote the use of IT in schools, it is essential to provide a basic technical IT infrastructure. This basic IT infrastructure includes an internet connection based on fiber optics at the respective school location as well as high-performance and sufficient Wifi coverage in the individual classrooms.

Digital devices for students:

Through the "Digital Learning" device initiative students in the 5th grade at participating schools are equipped with a notebook or tablet. The purpose of the initiative is to create the pedagogical and technical conditions for IT-supported teaching and to give students access to digital education.

Digital devices for teachers:

As part of the device initiative for students, a certain number of devices were made available to educators in the participating digital classes. This ensures that there are a sufficient number of devices at the school for teachers to use to teach in the classes.

PORTUGAL

PRINCIPLES AND ORGANIZATION

Education in Portugal is organized in accordance with the democratic principles established in the Constitution of the Republic (1976), namely the freedom to teach and learn, as well as the rights of citizens and the State's duties in this area. These same principles were the basis of the Education Law (1986), which defines the objectives, structures and modes of educational organization.

The Ministry of Education (ME) is the government agency responsible for defining, coordinating, implementing and evaluating the national policy relating to the education system (pre-school, basic, secondary and extra-school education), as well as for the articulation of the policy of education with qualification and professional training policies.

The school network is organized into school Groups (Agrupamentos), which have their own administration and management bodies.

STRUCTURE

Compulsory education lasts for 12 years, between the ages of six and 18 (ISCED 3). Public education tends to be free and universal from the age of four.

The Portuguese education system is divided as follows:

Pre-school education (ISCED 0)

Pre-school education covers children aged three to compulsory school age (six years). Attending pre-school education is optional, recognizing the primacy of the family's role in early childhood education. However, the network of establishments has been expanding within a generalized service availability policy. Provision for children under three, with a special focus on childcare (ISCED 010) (nursery), is not part of the education system.

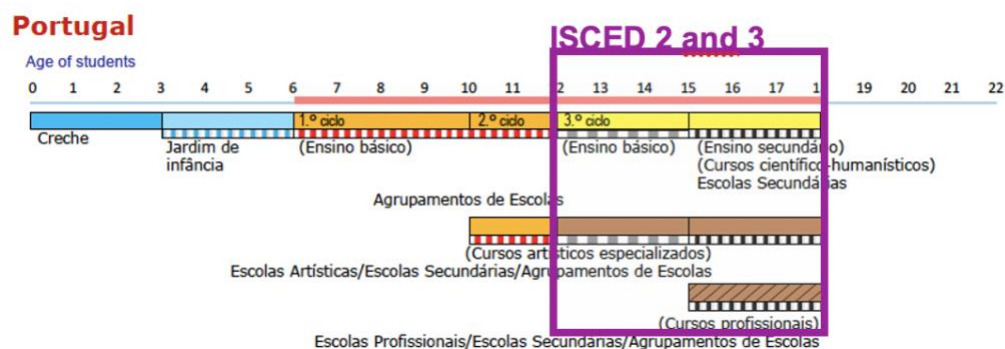
Basic education (ISCED 1 and 2)

Basic education is universal, mandatory, free and lasts for nine years. It is divided into three sequential cycles; each must complete and build on the above from a global perspective: the first cycle (ISCED 1) corresponds to the first four years of schooling (1st to 4th grades). The second cycle (ISCED 1) corresponds to the following two years (fifth and sixth year). The third cycle (ISCED 2) lasts for three years and corresponds to lower secondary education (grades seven to nine).

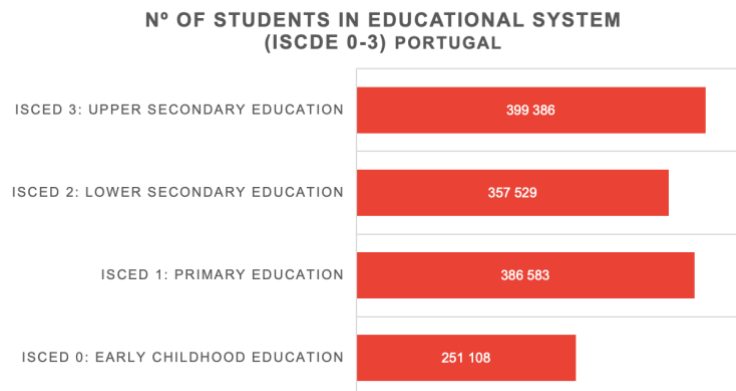
Upper High School (ISCED 3)

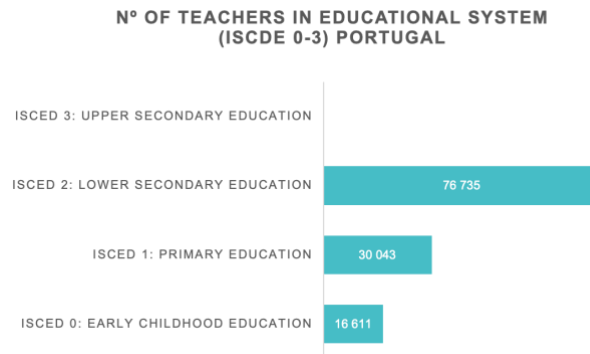
Secondary education lasts three years and corresponds to grades 10, 11 and 12 of secondary education high school, organized in different modalities. Some are aimed at further studies, others via dual certification (academic and professional), the latter combining general, technical and work placement training. The permeability between the different paths is guaranteed, as well as access through all the higher education through national examinations.

The following chart shows the structure of the Portuguese education system:

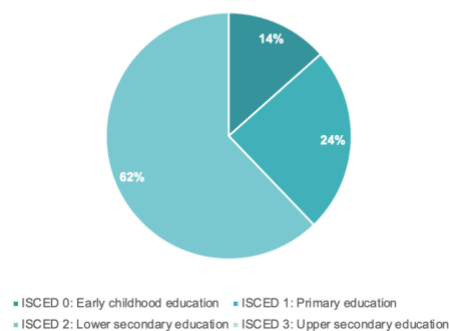


BASIC STATISTIC INFORMATION





**DISTRIBUTION OF % OF TEACHERS IN
EDUCATIONAL SYSTEM
(ISCDE 0-3) PORTUGAL**



NATIONAL APPROACH TO EDUCATION DURING PANDEMIC

In Portugal, the arrival of the coronavirus pandemic during the third school term in spring 2020 took public authorities by surprise, prompting a swift collaboration between civil society and policymakers to mitigate the crisis. A variety of policy measures and legislative actions were implemented to support schools in navigating the challenges posed by the pandemic. As the virus reached its peak, a comprehensive set of educational strategies was gradually introduced, culminating in a nationwide lockdown announced by the Council of Ministers on March 19, 2020. The lockdown began on March 22, shortly after schools were preemptively closed on March 16, just before the conclusion of the second term. This closure extended through the end of the academic year, a decision that was broadly supported across Portugal.

A survey of 1,754 parents revealed that 92.5% endorsed the government's closure decision (Benavente et al., 2020). Additionally, student engagement remained consistently high from the onset of school closures, with participation rates ranging between 76% and 100%. Secondary education students, in particular, demonstrated higher engagement levels, likely due to their greater independence and more widespread access to digital resources (ME/DGEEC, 2020).

The following table provides a detailed overview of the various policy measures and instruments implemented in Portugal during the spring of 2020 in response to the COVID-19 pandemic. As schools transitioned rapidly to remote learning due to the abrupt school closures, these

initiatives were crucial in supporting educators, students, and families. The table outlines each policy's name, its main features, and the responsible authorities, offering insight into how Portugal navigated the educational challenges posed by the pandemic:

POLICY MEASURES/INSTRUMENTS	DESCRIPTION
<i>"APOIO ÀS ESCOLAS"</i> <i>[SUPPORTING SCHOOLS]</i>	This initiative by the Ministry of Education involved creating a comprehensive online resource portal through the Directorate-General for Education and the National Agency for Qualification and Vocational Education. The website included crucial information on examination schedules, guidelines for utilizing digital platforms effectively, and protocols for distance assessments. It also featured a collaborative space for teachers to share successful practices and strategies.
<i>GUIDING PRINCIPLES FOR DISTANCE LEARNING</i>	To ensure consistency and quality in the shift to online education, the Directorate-General for Education distributed a script containing eight guiding principles. These principles were designed to aid schools in effectively implementing distance learning and to provide a structured approach to online education, ensuring educational continuity during the pandemic.
<i>TECHNOLOGICAL ROADMAPS</i>	The Ministry of Education developed and disseminated technological roadmaps to assist schools in integrating and utilizing Microsoft and Google platforms. These roadmaps were aligned with the guiding principles for distance learning, providing a strategic framework to support educators and administrators in adopting new technologies for effective online instruction.
<i>DISTANCE LEARNING PLAN</i>	Introduced through Decree-Law no. 14-G/2020, this plan included a set of exceptional and temporary measures to address educational disruptions caused by the pandemic. It served as a strategic tool for schools to organize and manage their educational efforts, ensuring the continuation of learning during school closures.
<i>FACEBOOK PAGE</i>	A specific Facebook page was created to serve as a hub for consultation and document sharing among schools. This platform facilitated real-time communication and resource sharing, enhancing collaborative efforts among educators and school administrators across the country.
<i>INCLUSIVE EDUCATION IN DISTANCE LEARNING</i>	Special guidelines were disseminated to support inclusive education practices in the distance learning modality. These guidelines helped schools to effectively work with

	multidisciplinary support teams, ensuring that all students, including those with special educational needs, received appropriate support and resources during remote learning.
YOUTUBE PARTNERSHIP	The Ministry established a partnership with YouTube, launching channels that offered educational content for students across all grade levels, from pre-school to secondary education. This initiative helped to broaden access to educational materials, providing diverse learning opportunities outside of the traditional classroom setting.
WEBINARS	A series of webinars were promoted by the Ministry of Education to assist teachers in enhancing their digital literacy and mastering online teaching tools. These webinars focused on sharing effective digital tools and strategies for remote teaching, aiming to equip teachers with the necessary skills to conduct engaging and effective online classes.
#ESTUDOEMCASA [#STUDYING AT HOME]	This television program was launched in collaboration with Rádio Televisão Portuguesa (RTP) and supported by the Calouste Gulbenkian Foundation. It broadcast educational content daily, designed in 30-minute thematic blocks, developed by teams of teachers. The program covered a comprehensive curriculum, aimed at consolidating and developing student learning throughout the school year, and was structured to be used sequentially or independently, depending on the educational need.
SUPPORT BRIGADE "WE ARE ON WITH SCHOOLS"	A multidisciplinary "Support Brigade" was established to aid schools in the design and implementation of their Distance Learning Plans. This brigade consisted of over a hundred education professionals, including curriculum management experts, ambassadors for various educational initiatives, and coordinators from the school library network. Their role was to provide targeted support and expertise to schools navigating the transition to online education.
PARTNERSHIP WITH PORTUGAL POST OFFICE AND NATIONAL SCOUTS	This collaboration involved the Portugal Post Office and the National Scouts to ensure that vulnerable students received educational materials at home. This initiative was particularly important for students who may not have had adequate access to digital learning resources, ensuring they remained connected and supported in their learning endeavors during the pandemic.

SCHOOL APPROACHES TO SUPPORT TEACHING DURING PANDEMIC

During the pandemic, Portuguese schools were forced to find solutions to continue the training of their students. Schools tried to find out about the different possibilities and come up with diversified solutions. Agrupamento de Escolas Augusto Cabrita started by applying Teams to basic and secondary education, and applying Google Classroom to the first cycle of basic education 'primary education'.

Over time and with the experience gained in the meantime, everything was centered on teams, after trying out other platforms such as moodle, much advocated by some teachers.

Microsoft Teams won for its ease of use and communication and for gradually incorporating new features that existed on other platforms.

This whole process was led by me at my school, I involved myself in learning, and gave training and support to teachers in the different areas of training. When training on these platforms appears in training centers, supporting schools and teachers, in our schools practically everyone masters the different solutions, in particular teams.

Thus, Microsoft teams became the favorite of teachers, throughout the pandemic, and even after the end of the pandemic, its use continues in countless events such as work meetings, group meetings, evaluation, support for exams for students. Its use still continues to support classes, as a complement or even as a resource center, delivery of work and execution of tasks.

The classes during the pandemic were taught, using the microsoft teams platform, which had a similar schedule associated with the face-to-face schedule at school.

students knew the time of the classes, and whether they were synchronized with the videoconferences, in which other multimedia resources were also used, and various digital tools, video, quizzes, tasks, collaborative tools for sharing math and drawing.

The possibility of recording the classes was another possibility, which allows seeing the material in a different way over time.

The classes were also asynchronous, allowing the execution and delivery of proposed tasks, on previously scheduled dates.

A problem verified, throughout the pandemic, was the lack of laptops and internet for students to study, with many of them attending classes, through tablets but above all through smartphones.

Currently, with various programs providing these means to our students, such as laptops and internet access routers, first provided to students with more economic difficulties, and extended to all students from primary school. Teachers also came to benefit from this digital media package.

In addition, our schools were always working during the pandemic, providing rooms for students with access difficulties and also students whose parents were involved in the effort to combat the pandemic as military personnel, health personnel, and to attend classes online. Our schools also provide meals and continue to provide take away meals for many students who only eat at school.

After the pandemic, Teams is here to stay as long as this tool remains free with no costs and available to schools and the educational community by Microsoft.

SWEDEN

PRINCIPLES AND ORGANIZATION

Almost half the Swedish population is involved in some form of organized education. All education, from preschool class to higher education, is free of charge. Sweden has among the highest public spending on education relative to GDP in the EU. Sweden has a decentralized education system, steered by goals and learning outcomes defined at central level. The government has the overall responsibility and sets the framework for education at all levels.

An overall aim of the education system in Sweden is to strengthen the students' foundations for lifelong learning. This is for example expressed through the curricula for compulsory and upper secondary school.

The municipalities are responsible for the preschool, the preschool classes, the compulsory school, the upper secondary school, the special school, municipal adult education, education for adults with intellectual impairments and Swedish for immigrants. The state is responsible for the special school and the Sami school. There are also grant-aided independent schools that receive public grants. The grant-aided schools cannot charge tuition fees.

Sweden has a comprehensive system of adult education consisting of municipal and liberal adult education. Higher education and higher vocational education are free of charge and Swedish citizens are entitled to post-secondary student aid until the year they turn 56. The study support system is equal for all and principally granted independently of parents' or family's financial situation.

The public school system for children and young people includes:

- Preschool
- Preschool class
- Compulsory school
- Upper secondary school
- Education for pupils with severe intellectual impairments
- Schools for pupils with impaired hearing
- Sami school

The Swedish parliament determines the laws and the government determines regulations for schools. Swedish schools are goal/learning outcome directed and the government steers the education by establishing goals/learning outcomes in the Education Act. These goals/learning outcomes relate to curricula and course syllabi. Within the framework set by the parliament and the government, the municipalities implement the steering documents in order for its pupils to reach the goals/learning outcomes set for a certain school stage.

STRUCTURE

The **Preschool** is heavily subsidized and available from about the age of one. More than 90 percent of the children attend preschool.

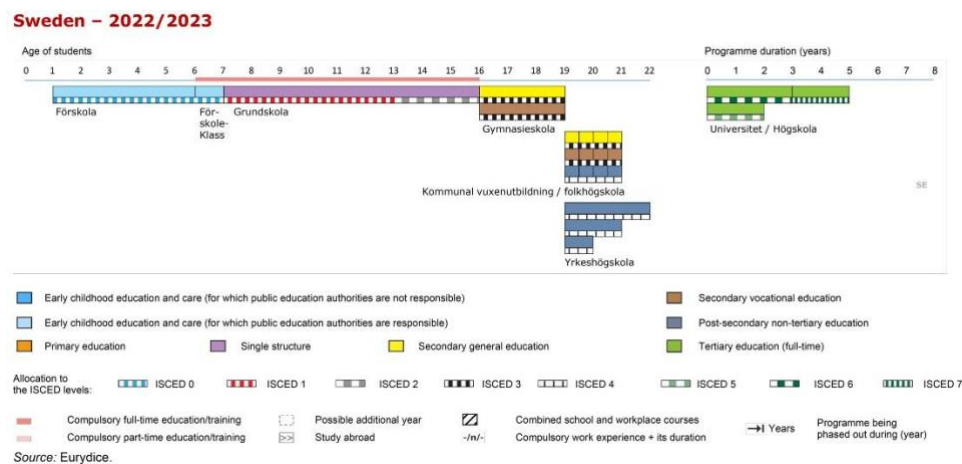
The **preschool class** is since 2018 compulsory for all children from the year that they turn six.

The **Compulsory school** then begins at the age of seven and ends at the age of 16.

Upper secondary school consists of 18 national programmes and five introductory programmes for students who are not eligible for a national programme. Among the national programmes, there are 12 vocational programmes and six higher education preparatory programmes. Students usually start upper secondary school at the age of 16 and complete their upper secondary studies at the age of 19.

Students that have not completed upper secondary school are able to attend **municipal adult education** or **folk high schools**. Students that have completed upper secondary school are, depending on their choice of upper secondary national programme and courses within the programme of individual options, also able to apply for **universities, university colleges and/or higher vocational education**.

The following chart shows the structure of the Swedish education system:



BASIC STATISTIC INFORMATION

PRESCHOOL AND PRIMARY EDUCATION	UPPER SECONDARY EDUCATION	HIGHER EDUCATION
Number of pupils in preschool 513,038	Number of teachers in upper secondary school 36,002	Number of incoming international students 23,882
Number of teachers in preschool 12,979	Share of students in upper secondary schools with a foreign background 29%	Most popular field of study Law and social sciences
Number of teachers in primary school 110,668	Number of female students in upper secondary schools 169,451	Number of new doctoral students 3,082
Pupils per teacher in primary school 12.2		

NATIONAL APPROACH TO EDUCATION DURING PANDEMIC

The Swedish approach to the pandemic in relation to schools, has differed to that of other European countries in that many education institutions were left open. The Swedish Government implemented various recommendations to mitigate the effects Covid-19 had on education while simultaneously reducing the spread of the virus as much as possible.

Swedish laws

When Covid-19 started spreading, the Swedish Government didn't have the right to close all schools. That is because the right to education trumps many other laws. The reason being that equal opportunities for education is a success factor for later in life.

While the Swedish Government aimed to keep compulsory school open, a situation could occur that would make it necessary to close them. Therefore, a new act was adopted in March of 2020, which gave the government the rights to temporarily close schools and other educational activities if the situation should become worse. Responsible school organizers were also given the right to temporarily close education activities if certain criteria were met, such as if Covid-19 should become widespread locally or if a large number of teachers were unable to teach due to illness.

Compulsory school (primary and secondary school)

All compulsory schools were kept open during the pandemic. The government stated that this would be the best solution in the long run, as students would get the stability they needed to learn. The decision was also partly made because of the nature of the virus where children were said to both be less affected by the virus as well as transmitted it to a lesser extent than adults. The Public Health Agency said that countries who were at more advanced stages of the pandemic had still not seen virus clusters linked to schools at this point. However, following the

law change in March of 2020, the government, or organizers responsible for schools could decide to close them if the need arose.

Primary and secondary schools also had to comply with a number of new recommendations and routines meant to limit the spread of Covid-19 as much as possible. The new recommendations included preventative measures for good hand hygiene, increased cleaning measures, making sure schools had good ventilation as well as aired out classrooms between classes, students having to be outside more, measures to avoid crowding and to continually inform children, students, parents, and employees about the current situation. Schools were asked to not hold large gatherings of students if it wasn't necessary and to space out tables and chairs in classrooms, to make sure students could keep a distance from each other as much as possible. The Public Health Agency recommended schools to stagger class, break and lunch times so large amounts of students did not mix at the same time.

These recommendations were also completed by different local recommendations depending on the number of cases in the area. They were also changed during different periods of the pandemic depending on frequency of Covid-19 cases and new knowledge about the virus.

Even though no full-scale move toward distance learning occurred in compulsory schools, it was always a possibility depending on the spread of the virus. That meant that teachers and students had to prepare for a possible scenario where schoolwork would have to be carried out remotely.

Compulsory schools also saw a high degree of absence among both students and teachers, as the recommendations stated that everyone with any symptoms that could be Covid-19 had to stay at home and quarantine. Another cause for quarantine was if someone in the same household had confirmed Covid-19.

While most primary schools stuck to in school learning, many secondary schools had periods where they switched to distance learning. In January of 2021, when Covid-19 cases were rising rapidly, two thirds of all school organizers had chosen to switch almost all their secondary schools fully or in part to distance learning. Distance learning covered most education in these schools. In February of the same year, half of school organizers used distance learning in their schools. Studies also showed that a smaller part of the education consisted of distance learning at this time, about half. The number of schools conducting distance education continued to get lower from then on.

Upper secondary school

From 18th of March 2020, the Public Health Agency of Sweden recommended that all upper secondary school education should switch to online or distance learning. This was the case during the rest of the spring semester, until 15th of June 2020. When the fall semester started, students were again expected to be in school for their classes, but under certain circumstances schools could switch to online courses again for periods of time.

At the end of 2020, upper secondary schools were again recommended to switch to online or distance classes. Some exceptions were set in place this time, as students in some programs or students who were deemed more vulnerable in cases of distance learning were allowed to be in school.

From 25th of January 2021 schools were advised to start returning to in school classes again, by combining in school classes with distance ones. During a period of time students should get anywhere between 20 and 80 percent of their classes online, and the rest at school. The recommended blend of in school and online classes stopped being the norm after 2nd of April 2021, when schools could start conducting all classes in school again.

Before the fall semester of 2021 the possibility for schools to decide to conduct their courses online for the purposes of avoiding crowded hallways and classrooms or public transport, was removed.

Cancelled national exams

Even though schools stayed open, the decision was made by the Swedish National Agency for Education to cancel the national exams in both 2020 and 2021. All national exams were cancelled, except for those in grade 3 in primary school and year 4 in compulsory school for pupils with learning disabilities. Those tests could remain as they could be spread out over a period of time. For all other tests, they would require large groups of students to be in the same room, and the risks of spreading Covid-19 were deemed to be too high. The high absence of students and teachers also meant the tests could not be carried out in the manner they were meant to.

Adult education

Municipal adult education, vocational adult education and higher education institutions (such as universities) also provided distance learning following recommendations from the Public Health Agency of Sweden since mid-March 2020. These recommendations were kept until 1st of June 2021.

Digital platforms and digital tools were already widely used in Swedish schools before the pandemic. These existing tools and teaching strategies were utilized to make as smooth of a transition as possible to distance learning.

Municipal adult education teachers were also encompassed by the recommendations from the Public Health Agency of Sweden for workplaces in Sweden, which dictated that everyone who had the possibility to, should work from home. These recommendations were kept in place until 29th of September 2021, and after that people could successively start going back to their places of work again.

To mitigate the effects the pandemic could have on jobs and businesses, the Government decided to issue bigger state grants for adult education. The grants were meant to make it easier to study throughout the country. This was to provide financial security and meet the increased need for training and transition for those who became unemployed during the pandemic.

Challenges for work-based learning

Work-based learning programs and apprenticeships were still allowed to be carried out as long as the workplaces were capable of taking on students, even though distance learning was recommended. But because of the challenges many businesses faced during the pandemic however, many workplaces didn't have the ability to take on students or apprentices. This could be for different reasons. One reason was that many business owners experienced high levels of uncertainty about whether their businesses would survive. Other reasons were that employees were too busy, such as in the health care sector. Minors are also not allowed in workplaces if there is a risk of being exposed to severe infectious diseases. Because of these factors, school organizers could arrange vocational training for students in the school building if they weren't able to find appropriate workplaces.

Students with special needs

Some exceptions from the recommendations were made to support students with special needs or students who were not coping well with distance learning for other reasons. At risk students were allowed to be in the school building so they could get support, so they did not risk falling behind in their studies.

Support measures for teachers, school leaders and school organizers

The Swedish National Agency for Education was tasked with providing support and guidelines for school organizers, school leaders and teachers to make sure they could benefit from different solutions, digital innovations and practices that were successful throughout the country. The agency published advice on how to interpret new legislation regarding the corona virus and related recommendations from the Public Health Agency of Sweden. To support and inspire teachers and school organizers, they also put out films, podcasts, and radio programs. The platform skola hemma (home schooling, <https://skolahemma.se/>), was launched and designed to meet the needs of schools during the pandemic. There teachers and school organizers could find support for planning, inspiration and knowledge of education connected to the pandemic.

The Swedish National Agency for Education also provided guidelines for grading and assessment meant for teachers. This was to make sure the assessment process was as reliable as possible.

SCHOOL APPROACHES TO SUPPORT TEACHING DURING PANDEMIC

As mentioned above, Swedish schools mainly remained open during the pandemic. In compulsory school remote teaching was only conducted during shorter periods of time, while upper secondary school and adult education switched to online learning during longer periods of time. Since all organizations and institutions were obligated to prevent crowding, many schools decided to use distance learning for students in grade 7 to 9 to be able to separate those students who remained in school in different classrooms. However, since both teachers and students were not properly prepared for online teaching and learning, several problems arose when classes were to be held online. At Alviksskolan a few workshops on how to use Teams were organized, and meetings with colleagues and parents were also moved online. Most teachers came to school every day but ended up sitting alone in their classroom.

Since public schools in Stockholm were already using O365 tools, teachers did not have to adapt to new tools, only deepen their knowledge about the ones that already existed. Also, since the students in grades 7-9 had their own school laptop they could bring it home and most of them knew how to navigate in Teams and the online school platform. However, even if both teachers and students used digital devices daily, they soon discovered that remote teaching was different. This demanded that the teachers quickly had to understand more thoroughly how to use the O365 tools, which caused a lot of stress in the beginning.

Because of the strict law that said that everyone who had the slightest symptom of covid-19 should stay at home, many students were absent during this time. To be able to acquire knowledge and follow the curriculum, they needed to work from home. Teachers were often instructed to upload their lesson plans and material online so that all students could access them. Simultaneously, some schools decided to create rolling schedules for the different grades, so that the students could take turns to go to school to meet with their teachers and take tests.

In Stockholm each school had the possibility to decide how to tackle the challenges that came with the pandemic and how they wanted to carry out education for their students. This meant that all schools had different solutions adapted to their local circumstances. From this, a type of blended learning environment evolved, where the teachers were expected to offer both in-classroom teaching and online teaching. One question that was widely discussed among teachers during the periods of remote teaching was the one about assessment. Many teachers felt that the texts that the students wrote at home could not be used for assessment. It was impossible to know if students had gotten help from parents, friends, or Google when they did assignments at home. This problem led to less exams during the periods of remote teaching, but more tests when the students returned to school again.

In conclusion, the Swedish experience of remote teaching is quite limited since schools remained open for most of the pandemic. Even if schools were forced to adjust to a more frequent use of digital tools it has been beneficial for both students and teachers to develop their knowledge and skills in using them.

TURKEY

PRINCIPLES AND ORGANIZATION

The Turkish education system is organized on the basis of:

- Constitution of the Turkish Republic
- Laws Regulating Education
- Government Programmes
- Development plans
- National Education Councils

Education in Türkiye to a great extent supervised by the state. It is designed to produce skillful professional people for all institutes of the nation in all courses of life. The system is divided into three different stages. Each stage lasts for four years and all students are obliged to attend all these stages. Compulsory education starts with the age of 6 till the age of 18. Public schools are free and all the books are given to the students freely as well. The National Education Ministry is responsible for all public and private schools, regulations and developments of the methodologies and teachers. Turkish Education System's 3 stages are as follows;

KINDERGARTEN – PRE-PRIMARY EDUCATION

Kindergarten education is not compulsory, but it is the state policy to enroll as many students as possible. Pre-primary education includes the optional education of children between 36-66 months who are under the age of compulsory primary education. Pre-primary education classes are either state supported or private school classes with suitable physical capacity. In public schools generally classes are in shift as morning and afternoon. The number of the children in a class changes from school to school but max. 25 children allowed with one teacher. There are also private nursery schools, child care houses.

PRIMARY EDUCATION

Primary education is compulsory for all boys and girls at the age of 5,5, and is given free of charge in public schools. These schools provide eight (4+4) years of education.

Turkish, mathematics, social studies, science, civics and human rights, the history of the Turkish Republic and Atatürk's reforms, a foreign language (English, or German), individual and group activities, religious culture and ethics, art/handicraft, music, physical education, traffic safety and first aid, are subjects of the primary level. There are 34.656 students in primary schools. Also private schools have primary levels. At the end of 8 years, successful students go

for the Secondary education for 4 more years. The purpose of the primary education is to ensure that every child acquires the basic knowledge, skills, behaviors, and habits to become a good citizen, is raised in line with the national moral concepts and is prepared for life and for the next education level parallel to his/her interests and skills.

SECONDARY EDUCATION

Secondary education is compulsory for four years and covers general, vocational and technical high schools (Lycees, Lise in Turkish) that provide four years of education. General high schools prepare students for higher learning institutions. Some of the secondary schools and the private secondary schools have foreign language preparatory classes. This kind of private lycees have double language education. Vocational and technical high schools provide specialized instruction with the aim of training qualified personnel. Technical lycees include special formations such as electricity, electronics, chemistry, machinery, motors, building, etc. Most of the high schools are owned by the State and provide free educational opportunities. In order to provide equal opportunities for the children with limited finances, there are State high schools with boarding facilities. These schools are free of charge and the students are placed according to the results of an examination. There are also many private high schools, which are paid by the parents, of course. Graduates of the high schools can attend universities if they can pass admission exams.

HIGHER EDUCATION

Higher education is not compulsory in Türkiye. Students have to pass two-stage university entrance exam (TYT-AYT). According to the point he/she gets from the exam, can choose a department and a university. Universities, faculties, institutes, higher education schools, conservatories, vocational higher education schools, police and military academies and colleges, and application- research centers are considered as Higher Education institutions. Universities, faculties and institutes of four-year higher education schools are founded by Law, while the two-year vocational schools, departments and divisions are established by the Council of Higher Education (YÖK)

NATIONAL APPROACH DURING PANDEMIC

While countries are closing schools one by one to minimize the spread of the virus, according to UNESCO data, as of March 23rd 2021, schools in 124 countries were closed completely or regionally. To ensure the sustainability of education, distance education was used in many countries and education was carried through various platforms (Kuyurtar, 2021).

In Türkiye, all schools across the country closed on March 11, 2020, the date of the first case. Initially, a short-term closure was planned, but due to the rapid spread of the pandemic, both the Ministry of National Education (MoNE) and the Council of Higher Education (YÖK) announced that schools could not be opened for face-to-face education in the spring semester (Eken et al., 2020)

In March 2020, the World Health Organization (WHO, 2020) declared Covid-19 as a pandemic. Soon schools around the world began to close gradually as part of measures to prevent the spreading of the virus. As a natural consequence of the school closure reaction, nearly 90% of the world's student population was affected and it became clear that education systems were largely unprepared for such a crisis (UNESCO, 2020a). The Covid-19 pandemic has been the largest disruption to education systems in history, affecting nearly 1.6 billion students in more than 190 countries across all continents, according to August 2020 United Nations report (UN, 2020:2). In Turkey, the number of students affected by the suspension of face-to-face education on these dates was approximately 25 million (UNESCO, 2020b).

The National Education Ministry had developed a programme called EBA (Education, IT network) since 2012 to support the academic development of the primary and secondary students. The ministry with the announcement of the pandemic strengtened the IT infrastructure of EBA for distance education and linked it with Zoom. With the help of EBA, teachers could give online lessons, homeworks and create online materials and upload them for all the teachers usages.

National Education Ministry selected some Professional teachers from every subject and made a studio to them. They gave lessons and recorded them and those lessons broadcasted on EBA TV for the students who didn't have computers or internet.

SCHOOLS APPROACHES TO SUPPORT TEACHING DURING PANDEMIC

At the pandemic years schools were closed and the education was not face to face, it was distance. Not all the teachers knew about how distance education was and how it could be planned. At first it was so difficult to use distance education applications like zoom, Microsoft teams etc. Teachers were not familiar with them. All the cities' national education directorates gave in service training courses to the teachers about how to use the programmes and web 2.0 tools to make the lessons more remarkable and to hold the students online during the lessons. The teachers who didn't know about the programmes attended those courses and get knowledged.

All the schools directorates wanted digital lesson plans and coordinated the hours of the lessons from the EBA platform. Wise managers set the course plans weekly and entered them to the EBA linked with Zoom. With the links that were given by the teachers, students could attend the

documentaries, cartoons and documents that teachers, students and parents can access. It is also a dynamic portal where teachers can assign assessment tasks to their students and provide feedback. MoNE invested in strengthening the EBA infrastructure to create a sustainable distance education portal, especially after the pandemic. As a response to these investments, in a very short period of time, EBA has become one of the most frequently clicked websites on internet search engines. Today, EBA is accessible to 900 million people and continues to provide services with its strengthened infrastructure (Özer, 2020b).

- **Free internet access for students:** In order to support students' access to EBA, MoNE collaborated with Turkey's largest GSM operators to provide up to 8 GB of free internet service to students during the pandemic. Thus, students were able to participate in online live lectures and other courses during the distance education process (MoNE, 2020a).

- **Live courses for 8th and 12th grade students:** MoNE offered a "live course" service through EBA for the High School Entrance Examination (LGS) and Higher Education Institutions Examination (YKS), which have very important consequences for the academic life of 8th and 12th grade students. In this way, students preparing for these exams could interactively participate in classes and receive feedback from their teachers. At the same time, the Ministry offered contents such as lecture videos to students preparing for the exams on weekends through the TRT channel.

- **Revision of the High School Entrance Exam** content and automatic enrollment of students in high schools: The LGS, which is normally prepared based on the 8th grade curriculum, was limited to the 8th grade first semester subjects in the 2019-2020 academic year due to inequalities in access to distance education and the adverse conditions brought about by the pandemic (MoNE, 2020b). On the other hand, due to the limitations resulting from social distancing, the Ministry decided to automatically enroll all 8th grade students in secondary education (Özer, 2020a).

- **Compensatory training:** When the break in education was completed, an accelerated make-up program was offered on EBA before schools started the new academic year, enabling students to make up for the subjects they missed in order to reach the expected goals (MoNE, 2020a).

- **Supporting teachers' professional development through distance education:** MoNE has developed a professional development program for teachers in collaboration with UNESCO. MoNE has prepared 17 programs focused on improving teachers' professional skills in various subjects and stated that they expect approximately 125,000 teachers to participate in these professional development programs (Özer, 2020b).

SURVEY RESULTS

PARTICIPANTS CHARACTERIZATION

The total number of participants in the survey was 198. The following chart represents the distribution of answers in each partner country:

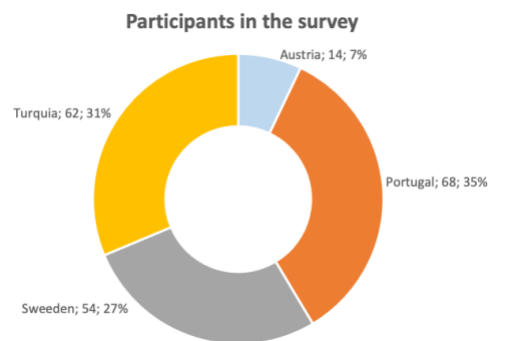


Chart 1- Participants on the Survey

In the survey, Portugal had the highest representation with 35%, followed by Turkey (31%), Sweden (27%), and Austria (7%).

It was also important to consider the distribution of teachers across the teaching levels, represented in the following chart:

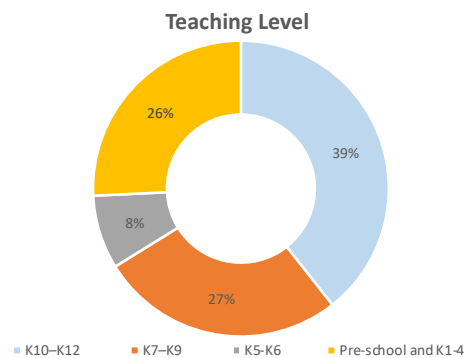


Chart 2- Teaching level

Focusing on early teens, the chart shows 39% of teachers worked with students aged 13-15 (K7-K9), followed by pre-school/elementary (4-10), high school (16-18), and pre-teens (11-12) at 27%, 26%, and 8% respectively.

Regarding the teacher's main subject, the distribution is showed in the following chart:

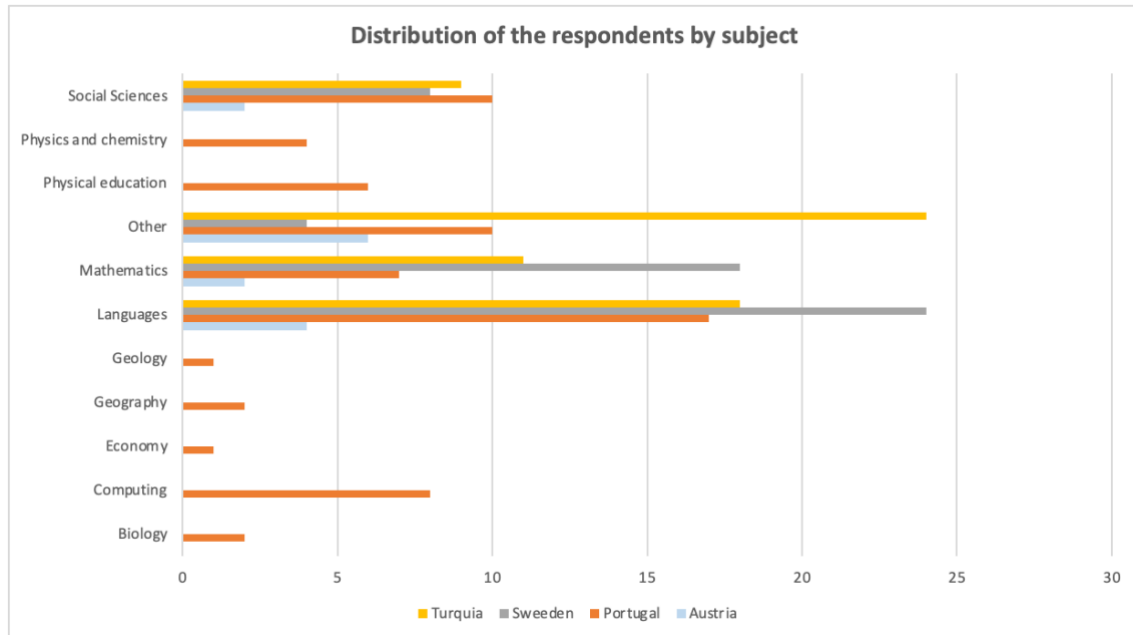


Chart 3- Participants teaching subject

ETOOLS

Devices owned/acquired during COVID-19

In response to the COVID-19 pandemic, there was a significant shift toward remote work and learning, requiring changes in technology usage and acquisition. It was important to identify what devices teachers currently own, which devices they have regular access to in a teaching and learning context and what devices were acquired specifically during the COVID-19 pandemic period. The following charts reflects the most relevant results:

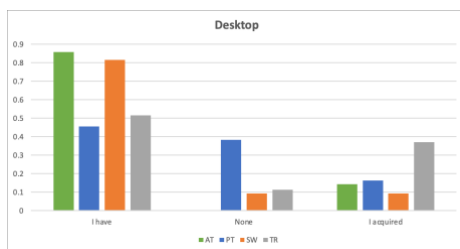


Chart 4- Distribution of Desktop Computer Ownership and Acquisition

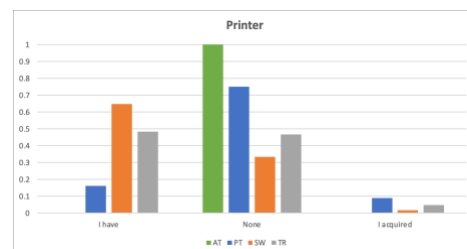


Chart 7- Distribution of Printer Ownership and Acquisition

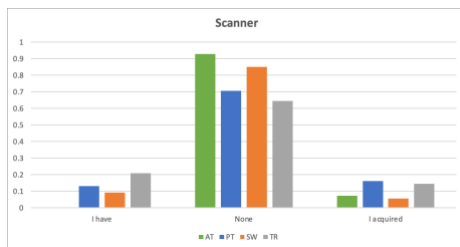


Chart 5- Distribution of Scanner Ownership and Acquisition

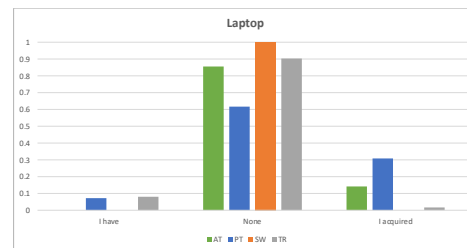


Chart 8- Distribution of Laptop Ownership and Acquisition

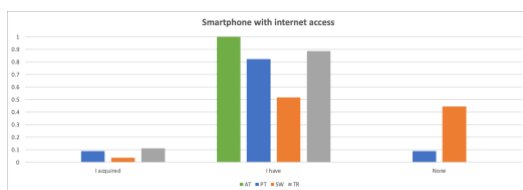


Chart 6- Distribution of Smartphone with internet access Ownership and Acquisition

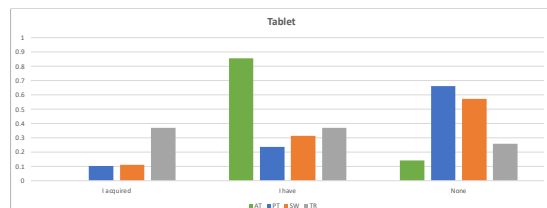


Chart 9- Distribution of Tablet Ownership and Acquisition

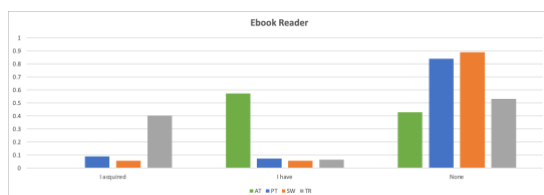


Chart 10- Distribution of Ebook reader Ownership and Acquisition

Regarding device acquisition trends during COVID-19 can be concluded:

Laptops: There was a significant increase in laptop acquisitions across all countries, with Austria and Sweden showing particularly rises. This suggests a universal shift towards mobile and flexible working and learning solutions as a response to the pandemic.

Tablets and Smartphones: Turkey exhibited substantial growth in smartphone and tablet acquisitions, indicating a strong move towards mobile connectivity. Similarly, Sweden also saw a significant rise in tablet acquisitions. Portugal demonstrated a balanced increase in both laptops and tablets, which supports the trend towards versatility in remote access.

Concerning the usage Patterns of Technology:

Smartphones: Turkey and Portugal report extremely high usage of smartphones, indicating that these devices are central not only to communication but also to learning and personal management. Sweden also shows high smartphone usage, aligning with a trend towards greater mobility.

Laptops: In Austria and Sweden, laptops are among the most commonly used devices, reflecting their role in supporting remote work and education. This is consistent with the acquisition trends, where laptops were highly sought after during the pandemic.

Desktops: Although the use of desktops is declining, they are still relatively common in Austria for work-related activities and education, suggesting some continued preference for traditional computing environments.

Overall, there is a clear preference for mobile devices such as smartphones and laptops over stationary ones like desktops and printers. This shift is likely driven by the need for flexibility and remote access capabilities during the pandemic. The pandemic has significantly influenced technology acquisition and usage patterns, accelerating the transition towards mobile technology and digital solutions.

Usefulness of educational services during the pandemic

The following chart details the perceived usefulness of different educational services during the pandemic:

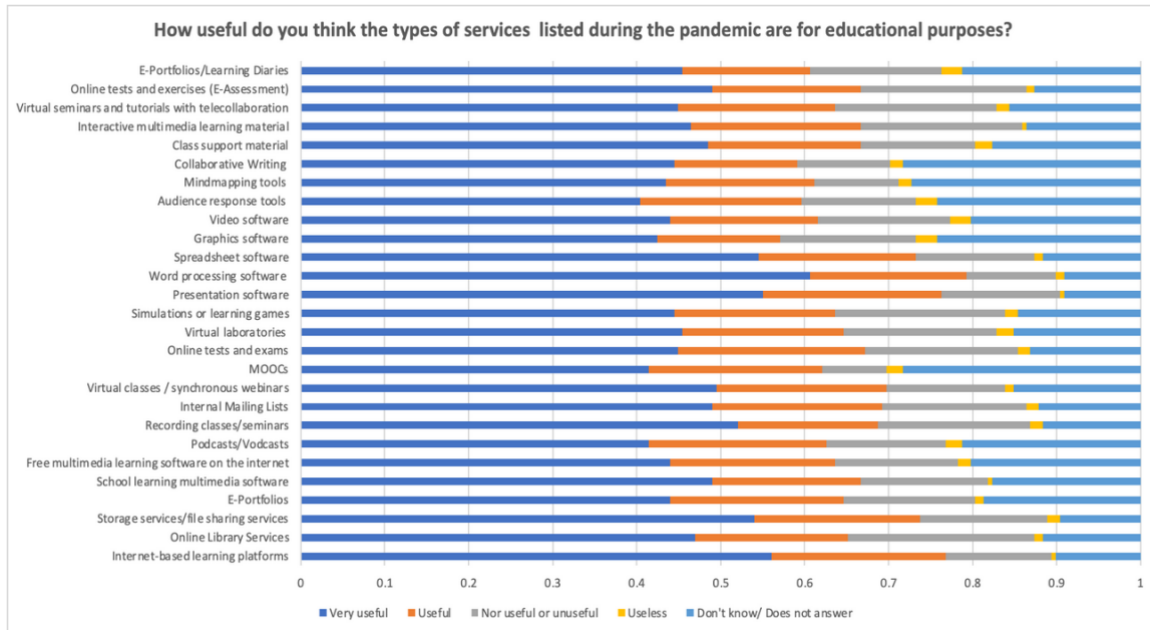


Chart 11- Usefulness of educational services during the pandemic

The chart highlights that:

E-Portfolios/Learning Diaries

Highly valued, with 90% of respondents considering them very useful (60%) or useful (30%). Very few find them useless (5%), and some are neutral (3%) or unsure (2%).

Online Tests and Exercises (E-Assessment)

Predominantly seen as useful or very useful by 85% of respondents (55% very useful, 30% useful), with a significant number of neutral responses (10%). Very few find them useless (3%), and a small percentage are unsure (2%).

Virtual Seminars and Tutorials with Telecollaboration

Generally considered useful or very useful by 80% of respondents (50% very useful, 30% useful), with some neutral responses (15%). Few rate them as useless (3%) or are unsure (2%).

Interactive Multimedia Learning Material

Highly regarded, with 85% of respondents finding it very useful (55%) or useful (30%). Few are neutral (10%), and a small percentage find it useless (3%) or are unsure (2%).

Class Support Material

Seen as very useful or useful by 80% of respondents (50% very useful, 30% useful), with a significant portion neutral (15%). Very few consider it useless (3%) or are unsure (2%).

Collaborative Writing

Considered useful or very useful by 75% of respondents (45% very useful, 30% useful), with some neutrality (20%). Few find it useless (3%) or are unsure (2%).

Mindmapping Tools

Perceived as useful or very useful by 70% of respondents (40% very useful, 30% useful), though there is a notable neutral stance (25%). Few find them useless (3%) or are unsure (2%).

Audience Response Tools

Mostly regarded as useful or very useful by 75% of respondents (45% very useful, 30% useful), with a significant number neutral (20%). Very few find them useless (3%) or are unsure (2%).

Video Software

Highly appreciated, with 85% of respondents finding it very useful (55%) or useful (30%). Few are neutral (10%), and a small segment finds it useless (3%) or is unsure (2%).

Graphics Software

Generally seen as useful or very useful by 80% of respondents (50% very useful, 30% useful), with some neutrality (15%). Few consider it useless (3%) or are unsure (2%).

Spreadsheet Software

Highly valued, with 85% of respondents considering it very useful (55%) or useful (30%). Few are neutral (10%), and a small number find it useless (3%) or are unsure (2%).

Word Processing Software

Seen as very useful or useful by 85% of respondents (55% very useful, 30% useful), with a significant portion neutral (10%). Very few find it useless (3%) or are unsure (2%).

Presentation Software

Highly regarded, with 80% of respondents rating it as very useful (50%) or useful (30%). Few are neutral (15%) or consider it useless (3%), and a small percentage are unsure (2%).

Simulations or Learning Games

Mixed responses, with 60% of respondents finding them useful (30%) or very useful (30%), but a notable portion neutral (30%). Some find them useless (7%), and a small percentage are unsure (3%).

Virtual Laboratories

Generally perceived as useful or very useful by 70% of respondents (40% very useful, 30% useful), though there is a significant neutral stance (25%). Few find them useless (3%) or are unsure (2%).

Online Tests and Exams

Highly valued, with 85% of respondents considering them very useful (55%) or useful (30%). Few are neutral (10%), and a small number find them useless (3%) or are unsure (2%).

MOOCs

Seen as very useful or useful by 75% of respondents (45% very useful, 30% useful), but with a notable number of neutral responses (20%). Few consider them useless (3%) or are unsure (2%).

Virtual Classes/Synchronous Webinars

Predominantly seen as useful or very useful by 80% of respondents (50% very useful, 30% useful), with some neutrality (15%). Very few find them useless (3%) or are unsure (2%).

Internal Mailing Lists

Mixed responses, with 60% of respondents finding them useful (30%) or very useful (30%), but a significant portion neutral (30%). Some find them useless (7%), and a small percentage are unsure (3%).

Recording Classes/Seminars

Highly regarded, with 85% of respondents finding them very useful (55%) or useful (30%). Few are neutral (10%), and a small segment finds them useless (3%) or is unsure (2%).

Podcasts/Vodcasts

Generally perceived as useful or very useful by 70% of respondents (40% very useful, 30% useful), though there is a notable neutral stance (25%). Few find them useless (3%) or are unsure (2%).

Free Multimedia Learning Software on the Internet

Highly valued, with 85% of respondents considering it very useful (55%) or useful (30%). Few are neutral (10%), and a small number find it useless (3%) or are unsure (2%).

School Learning Multimedia Software

Seen as very useful or useful by 80% of respondents (50% very useful, 30% useful), with a significant portion neutral (15%). Very few find it useless (3%) or are unsure (2%).

E-Portfolios

Generally considered useful or very useful by 75% of respondents (45% very useful, 30% useful), though there is a notable neutral stance (20%). Few find them useless (3%) or are unsure (2%).

Storage Services/File Sharing Services

Predominantly seen as useful or very useful by 80% of respondents (50% very useful, 30% useful), with some neutrality (15%). Very few find them useless (3%) or are unsure (2%).

Online Library Services

Highly regarded, with 85% of respondents rating them as very useful (55%) or useful (30%). Few are neutral (10%) or consider them useless (3%), and a small percentage are unsure (2%).

Internet-based Learning Platforms

Almost universally considered very useful or useful by 90% of respondents (60% very useful, 30% useful), with negligible neutrality (5%) or useless ratings (3%). Very few are unsure (2%).

To conclude, during the pandemic, several educational services were highly valued by respondents. Especially, around 90% found e-portfolios/learning diaries very useful (60%) or useful (30%). Similarly, online tests and exams were rated very useful (55%) or useful (30%) by approximately 85% of respondents. Virtual seminars and tutorials with telecollaboration also received high approval, with about 80% considering them very useful (50%) or useful (30%).

Interactive multimedia learning material was considered very useful (55%) or useful (30%) by around 85% of respondents. Class support material gathered a positive response from about 80% of respondents, who found it very useful (50%) or useful (30%). Collaborative writing was similarly appreciated, with about 75% of respondents rating it very useful (45%) or useful (30%). In terms of software, video software was highly valued, with approximately 85% finding it very useful (55%) or useful (30%). Graphics software and word processing software were also well-regarded, with around 80% and 85% of respondents, respectively, rating them very useful (50%-55%) or useful (30%). Presentation software was considered very useful (50%) or useful (30%) by about 80% of respondents.

Recording tools were also important; around 85% of respondents found recording classes/seminars very useful (55%) or useful (30%). Similarly, free multimedia learning software on the internet was rated very useful (50%) or useful (30%) by approximately 80% of respondents. Lastly, internet-based learning platforms were highly valued by about 90% of respondents, with 60% finding them very useful and 30% useful.

In contrast, some tools received mixed responses, reflecting varied opinions on their educational utility. For simulations or learning games, about 60% of respondents found them useful (30%) or very useful (30%), but 30% were neutral, and 10% found them useless or were unsure. Internal mailing lists had similar mixed reviews, with around 55% rating them as useful (25%) or very useful (30%), while 35% were neutral, and 10% considered them useless or were unsure. Podcasts/vodcasts were also viewed with some ambivalence; approximately 60% of respondents found them useful (30%) or very useful (30%), but 30% were neutral, and 10% found them useless or were unsure.

Usefulness of etools during the pandemic

The following chart provides insights into the perceived usefulness of various tools for educational purposes during the pandemic:

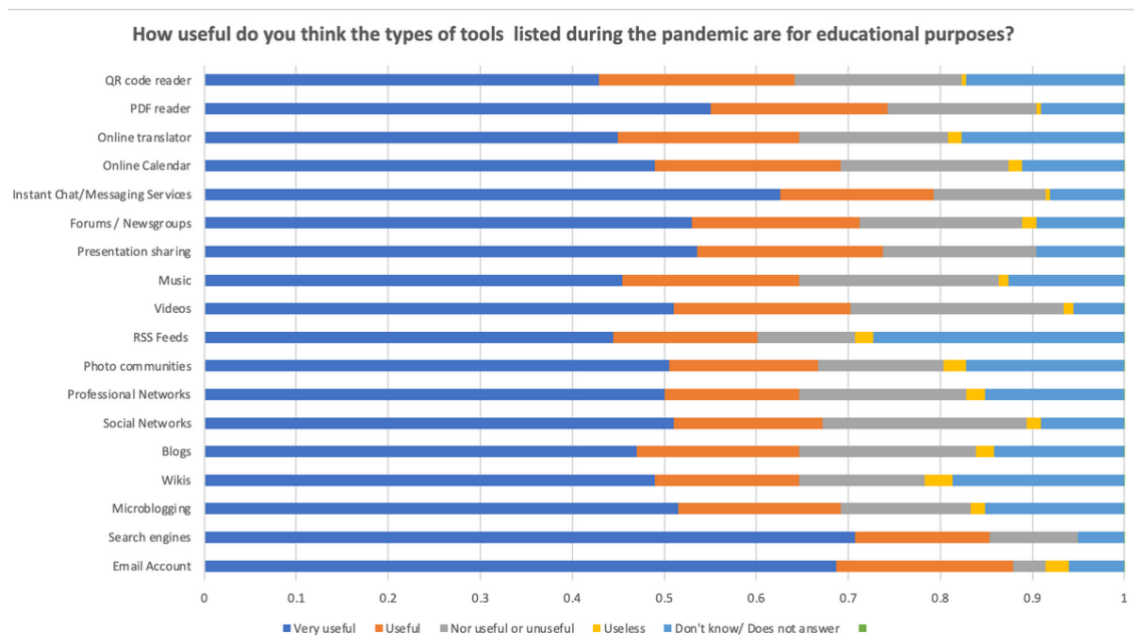


Chart 12- Usefulness of etools during the pandemic

Some conclusions drawn from the data:

QR Code Reader

The majority find it neither useful nor useless, with a significant portion rating it as useful or very useful. Few consider it useless, and a small percentage are unsure.

PDF Reader

Highly valued, with a large proportion rating it as very useful or useful. Very few find it useless or are unsure about its utility.

Online Translator

Seen as useful or very useful by a substantial number of respondents, but there is also a notable segment that finds it neither useful nor useless. A small percentage consider it useless or are unsure.

Online Calendar

Generally perceived as useful, with many rating it very useful. Few find it useless, and some are ambivalent or unsure.

Instant Chat/Messaging Services

Considered very useful or useful by a majority, with very few rating it as useless. A small number are unsure.

Forums/Newsgroups

A significant portion finds them useful or very useful, though a considerable segment is neutral. Few see them as useless or are unsure.

Presentation Sharing

Highly regarded, with most respondents rating it as very useful or useful. Very few find it useless, and some are neutral or unsure.

Music

Mixed responses, with a balanced view between usefulness and neutrality. Some find it very useful, but a notable portion finds it useless, and some are unsure.

Videos

Highly appreciated, with most respondents considering them very useful or useful. A small segment finds them useless or is unsure.

RSS Feeds

Responses are varied, with many finding them neither useful nor useless. A significant number consider them useful or very useful, while some find them useless or are unsure.

Photo Communities

Generally seen as useful or very useful, though there is a significant neutral stance. Few find them useless, and some are unsure.

Professional Networks

Highly valued, with many considering them very useful or useful. Few rate them as useless, and some are neutral or unsure.

Social Networks

Mostly perceived as useful or very useful, with some neutrality. A few find them useless or are unsure.

Blogs

Seen as useful or very useful by many, but a significant portion is neutral. Few find them useless or are unsure.

Wikis

Highly regarded, with most considering them very useful or useful. Few see them as useless, and some are neutral or unsure.

Microblogging

Perceived usefulness varies, with many rating it as useful or very useful, but a notable portion is neutral. Few find it useless, and some are unsure.

Search Engines

Considered very useful or useful by a majority, with few neutral responses. Very few find them useless or are unsure.

Email Account

Almost universally considered very useful or useful, with negligible neutrality or useless ratings. Very few are unsure.

In summary, tools like PDF readers, presentation sharing, videos, professional networks, wikis, search engines, and email accounts are highly valued for educational purposes during the pandemic. Tools like QR code readers, online translators, online calendars, and messaging services are also seen as useful but with some neutrality. Music and microblogging received mixed responses, indicating varied opinions on their educational utility.

EMODERATION

Use of moderation strategies in digital environments

The following chart illustrated the distribution of the answers to the question “*In the context of your activity as a teacher/trainer, do you usually use explicit moderation strategies in digital learning environments?*”

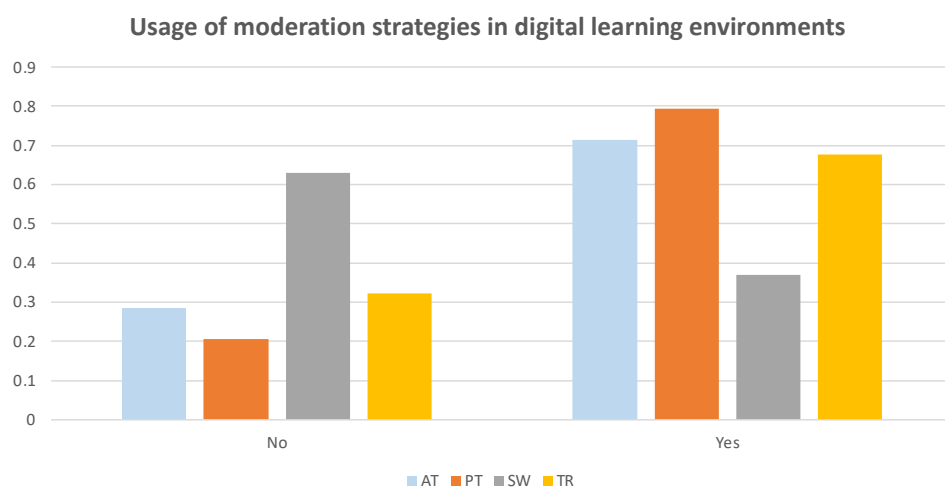


Chart 13- Use of moderation strategies in digital environments

In Austria, approximately 70% of respondents report using moderation strategies in digital learning environments, while around 30% do not. This indicates a strong adoption rate among Austrian educators.

Portugal shows the highest usage rate, with about 80% of respondents implementing moderation strategies, and only 20% not using them. This suggests a widespread recognition of the importance of such strategies in Portugal's digital learning environments.

Sweden presents a contrasting scenario, where a majority of respondents, approximately 70%, do not use moderation strategies, and only about 30% report using them. This highlights a significant gap in the adoption of these practices among Swedish educators.

Turkey displays a more balanced distribution, with around 60% of respondents utilizing moderation strategies in digital learning environments and 40% not employing them. This indicates a moderate level of adoption, with room for further improvement.

Overall, the results underscores the varying levels of implementation of moderation strategies in digital learning environments across these four countries. Portugal leads with the highest

adoption rate, followed by Austria, while Sweden lags significantly behind. Turkey shows a moderate level of usage, highlighting the need for increased focus on adopting effective moderation practices in digital education.

Use of moderation strategies in digital environments during periods of confinement

The following chart illustrated the distribution of the answers to the question “Did you use moderation strategies more frequently in digital learning environments during periods of confinement?”

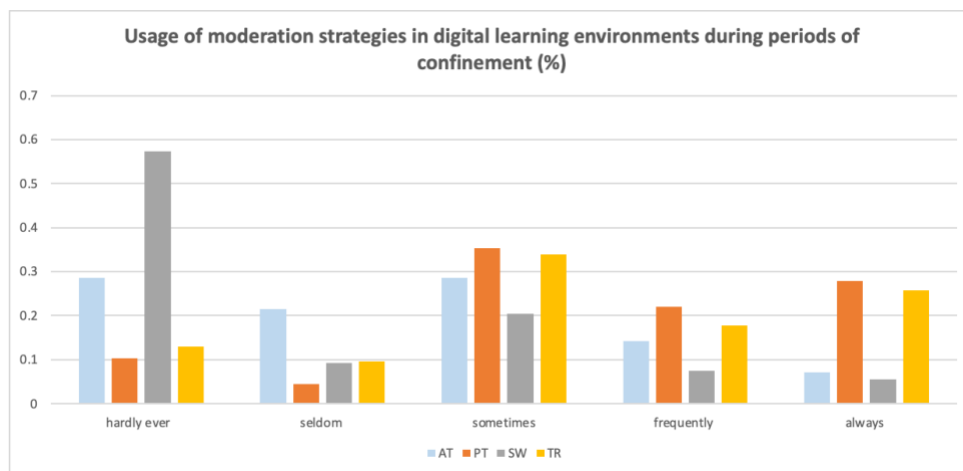


Chart 14- Use of moderation strategies in digital environments during periods of confinement

In Austria, the usage of moderation strategies is fairly distributed. About 30% of respondents reported hardly ever using these strategies. Around 20% use them seldom, and a significant portion, approximately 30%, use them sometimes. About 15% of respondents use moderation strategies frequently, while only around 5% always implement these strategies in their digital learning environments.

In Portugal, the distribution shows varied usage frequencies. A small percentage, around 10%, reported hardly ever using moderation strategies. Approximately 5% use them seldom. A more considerable portion, around 30%, use them sometimes. Another 25% use these strategies frequently, and about 30% always utilize moderation strategies in their digital classrooms.

In Sweden, there is a notable skew towards less frequent usage. A significant majority, around 55%, reported hardly ever using moderation strategies. About 10% use them seldom, and approximately 20% use them sometimes. Only about 10% of respondents use these strategies frequently, and a mere 5% always implement moderation strategies.

In Turkey, the usage is more evenly distributed. About 10% of respondents reported hardly ever using moderation strategies. Around 10% use them seldom, while a substantial portion, approximately 35%, use them sometimes. Another 25% of respondents use these strategies frequently, and about 20% always implement moderation strategies in their digital learning environments.

Overall, Portugal exhibits a higher frequency of use, with a considerable portion of respondents frequently or always using these strategies. Austria shows a balanced distribution with moderate usage. In contrast, Sweden has a significant majority that hardly ever uses these strategies, indicating a low adoption rate. Turkey displays a more even distribution, suggesting a moderate level of implementation across different frequencies.

Most relevant aspects of moderation activities

During the pandemic the role of teachers' moderation activities has become increasingly crucial. It was considered important understand the most relevant aspects of these activities, focusing on three key areas: feedback to students' work, clarification of student doubts, and monitoring students' collaborative work. Each of the following subsections will focus on these specific aspects, presenting the results of the survey:

Feedback to students' work

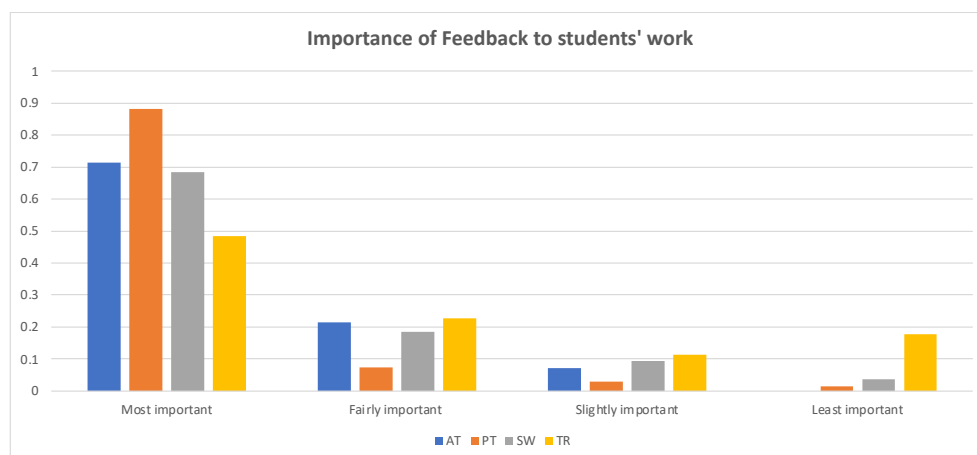


Chart 15- Importance of Feedback on student's work

In Austria nearly 80% of respondents consider feedback to be the most important, with a smaller proportion finding it fairly important (20%). Only a tiny fraction sees it as slightly important or least important.

In Portugal about 90% of respondents rate feedback as the most important, making it the country with the highest appreciation for feedback. Around 5% view it as fairly important, and the rest see it as slightly important or least important.

In Sweden, roughly 75% consider feedback the most important. A significant portion, around 15%, rate it as fairly important, with about 5% finding it slightly important and an equal percentage viewing it as least important.

In Turkey the perspective is more varied. While around 60% see feedback as the most important, 30% regard it as fairly important. The remaining 10% are split between slightly important and least important, with the least important category slightly higher than in the other countries.

There is a consensus that the feedback on students' work is highly valued, with a strong preference for its utmost importance, particularly in Portugal and Austria. Sweden and Turkey also recognize its importance but exhibit a slightly more diverse range of opinions.

Clarification of student doubts

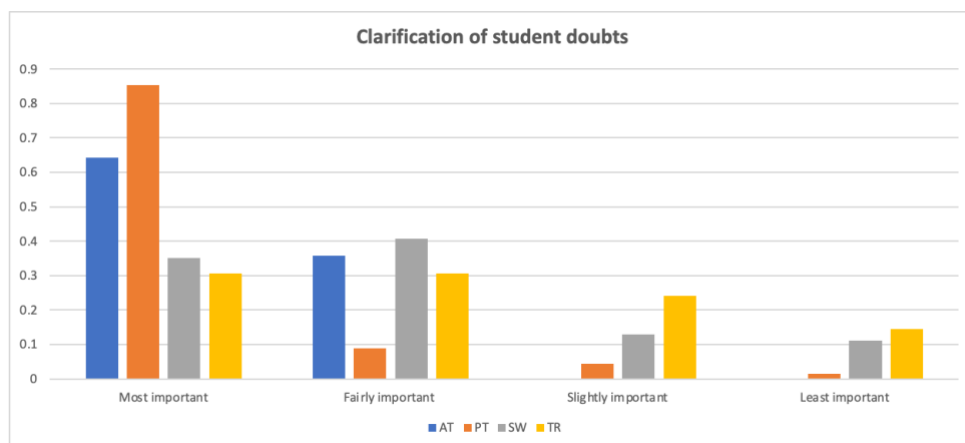


Chart 16- Importance of the clarification of student doubts

The results show varying degrees of importance placed on this aspect across the countries.

In Austria approximately 70% of respondents consider clarification of student doubts to be the most important. About 20% regard it as fairly important, with the remaining respondents split between slightly important (5%) and least important (5%).

In Portugal an overwhelming 90% of respondents view it as the most important, indicating a high priority placed on addressing student doubts. Around 5% find it fairly important, with negligible percentages considering it slightly important or least important.

In Sweden around 40% of respondents consider it the most important, and a similar percentage rate it as fairly important (35%). There is a notable segment that finds it slightly important (15%), and a small portion view it as least important (10%).

In Turkey, responses are more varied. About 35% see it as the most important, and a significant portion (30%) consider it fairly important. Another 20% find it slightly important, and around 15% view it as least important.

Overall, the chart highlights that clarification of student doubts is seen as critical, especially in Portugal, where it is deemed most important by the vast majority. Austria also places high importance on this aspect, though with slightly less consensus. Sweden and Turkey exhibit more diverse opinions, with significant portions of respondents considering it fairly important or even less critical.

Monitoring students' collaborative work

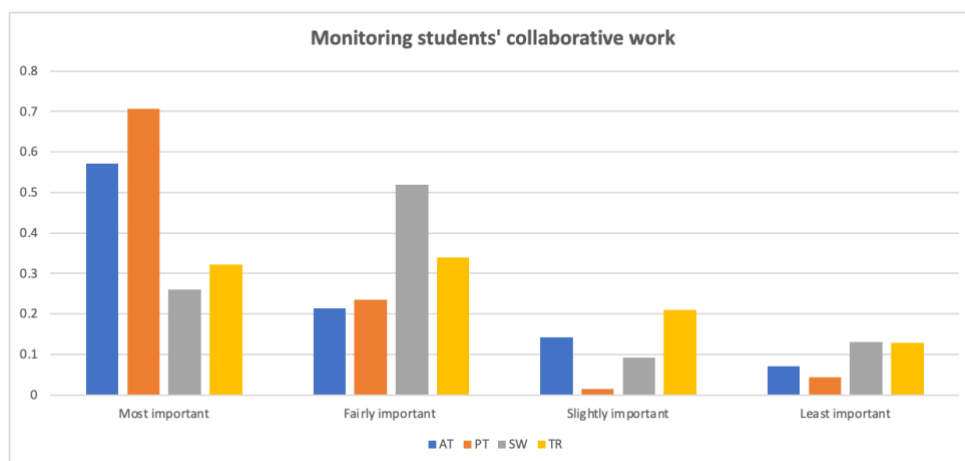


Chart 17- Importance of Monitoring students' collaborative work

The results reveal varying levels of emphasis on this aspect across the countries:

In Austria about 65% of respondents consider monitoring collaborative work to be the most important. Around 20% regard it as fairly important, with a smaller proportion finding it slightly important (10%) and least important (5%).

In Portugal monitoring collaborative work is highly prioritized, with 70% of respondents rating it as the most important. Around 15% see it as fairly important, while smaller segments consider it slightly important (10%) or least important (5%).

In Sweden responses are more evenly distributed. Approximately 30% of respondents consider it the most important, and a larger segment, about 45%, view it as fairly important. Around 10% find it slightly important, and 15% consider it least important.

In Turkey, opinions are diverse. About 30% of respondents see it as the most important, while 25% regard it as fairly important. Another 20% find it slightly important, and 15% view it as least important.

The results indicates that monitoring students' collaborative work is highly valued in Portugal and Austria, with majorities in both countries considering it the most important. In contrast, Sweden and Turkey display more varied opinions, with significant portions of respondents rating it as fairly important or less critical.

The combined analysis of the three charts reveals significant differences in perceptions across Austria, Portugal, Sweden and Turkey (TR).

Feedback on Students' Work: Overall, feedback on students' work is highly valued across all countries. In Portugal, nearly 90% of respondents consider it the most important, indicating the highest level of importance among the four countries. Austria follows closely, with around 80% rating it as the most important. Sweden also values feedback, with 75% considering it the most important, while Turkey shows a more varied perspective, with 60% rating it as most important and 30% as fairly important.

Clarification of Student Doubts: Clarification of student doubts is seen as crucial, especially in Portugal, where 90% of respondents view it as the most important. Austria also places high importance on this aspect, with about 70% considering it the most important. Sweden and Turkey show more diverse opinions; in Sweden, 40% see it as most important and 35% as fairly important, while in Turkey, only 35% rate it as most important, with another 30% viewing it as fairly important and 20% as slightly important.

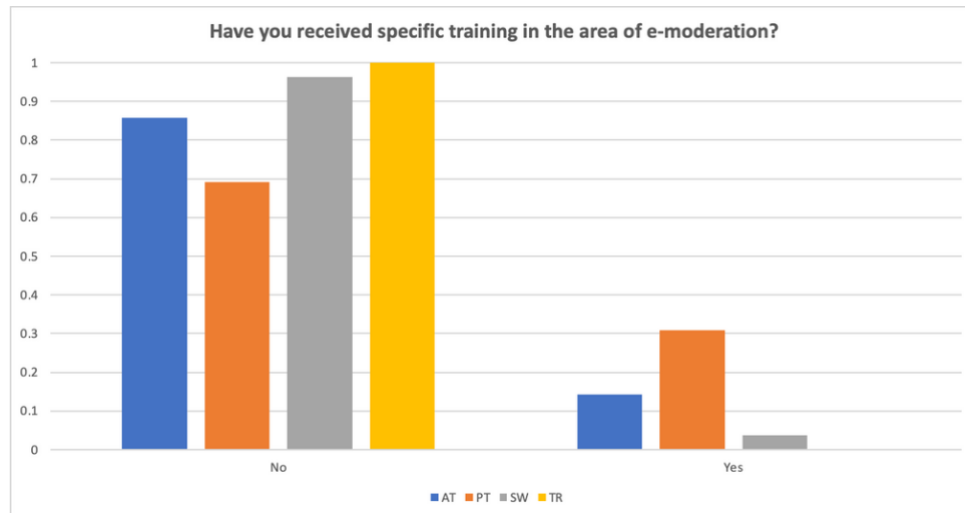
Monitoring Students' Collaborative Work: There is notable variation in the perceived importance of monitoring collaborative work. Portugal again places high value on this aspect, with 70% of respondents considering it the most important. Austria follows, with 65% rating it as most important. In contrast, Sweden displays more balanced views, with only 30% considering it the most important and 45% viewing it as fairly important. Turkey exhibits the most diverse opinions, with 30% considering it most important, 25% fairly important, and 20% slightly important.

The data highlights significant differences in educational priorities across the four countries. Portugal consistently places the highest importance on all three aspects—feedback, clarification of doubts, and monitoring collaborative work. Austria also values these aspects highly but to a slightly lesser extent. Sweden and Turkey show more varied opinions, with a notable portion of respondents in these countries rating these aspects as fairly or slightly important.

Specific training in the area of e-moderation

The following chart provides a detailed overview of the prevalence of specific e-moderation training among educators in different countries.

Chart 18- Specific training in the area of e-moderation



In Austria, a large majority of respondents, approximately 85%, have not received specific training in e-moderation, while only about 15% have received such training. In Portugal, around 75% of respondents have not undergone e-moderation training, but about 25% have, marking the highest percentage of trained individuals among the four countries. Sweden shows an overwhelming majority of around 95% of respondents who have not received e-moderation training, with a very small percentage, approximately 5%, having received training. In Turkey, almost all respondents, approximately 99%, have not received specific training in e-moderation, with only a negligible percentage, around 1%, having undergone such training. This data highlights a significant need for increased professional development in e-moderation across these countries, particularly in Turkey and Sweden.

This indicates a general lack of specific e-moderation training among respondents, with some notable differences between countries.

Skills to be a good e-moderator

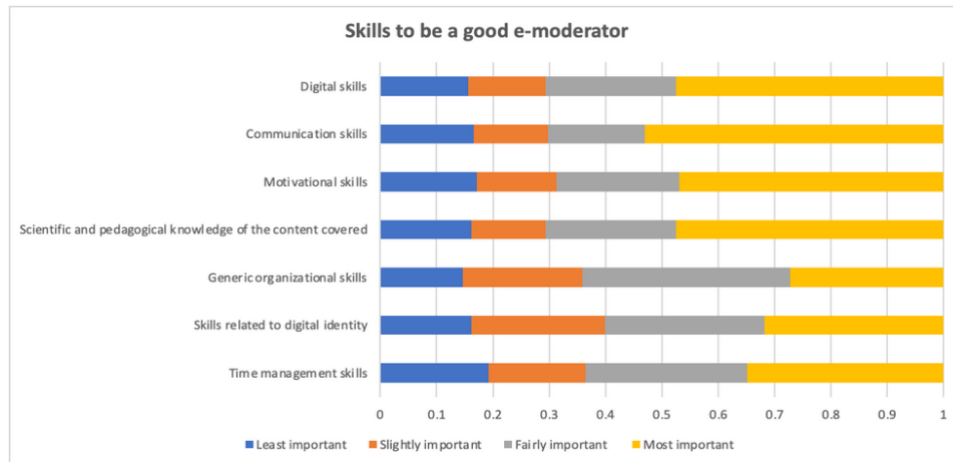


Chart 19- Skills to be a good e-moderator

The bar chart illustrates the perceived importance of various skills required to be a good e-moderator. The skills evaluated include digital skills, communication skills, motivational skills, scientific and pedagogical knowledge of the content covered, generic organizational skills, skills related to digital identity, and time management skills.

Digital skills are deemed highly important, with approximately 60% of respondents considering them the most important, 25% viewing them as fairly important, 10% rating them as slightly important, and a small fraction, around 5%, considering them the least important. Communication skills are similarly valued, with nearly 55% of respondents rating them as the most important, 30% as fairly important, 10% as slightly important, and about 5% as the least important.

Motivational skills are considered crucial by about 50% of respondents who see them as the most important, 30% who rate them as fairly important, 15% who find them slightly important, and a small portion, approximately 5%, who view them as the least important. Scientific and pedagogical knowledge of the content covered is also highly valued, with 45% of respondents rating it as the most important, 35% as fairly important, 15% as slightly important, and 5% as the least important.

Generic organizational skills are considered most important by around 40% of respondents, fairly important by 35%, slightly important by 15%, and least important by 10%. Skills related to digital identity are rated as the most important by about 35% of respondents, fairly important by 30%, slightly important by 20%, and least important by 15%.

Time management skills are crucial for e-moderators, with around 55% of respondents rating them as the most important, 25% as fairly important, 15% as slightly important, and 5% as the least important.

In summary, digital skills, time management skills, and communication skills are rated as the most important for e-moderators by the majority of respondents. Motivational skills and scientific and pedagogical knowledge of the content covered are also highly valued. Generic organizational skills and skills related to digital identity are important but to a slightly lesser extent. This indicates a broad consensus on the critical competencies required for effective e-moderation.

E-ASSESSMENT

Frequency of eAssesment activities to assess student's learning

The survey aimed to investigate the frequency of using eAssessment activities to evaluate students' learning. Participants were asked how often they use eAssessment activities to assess students' learning. The following chart shows the distribution of the answers:

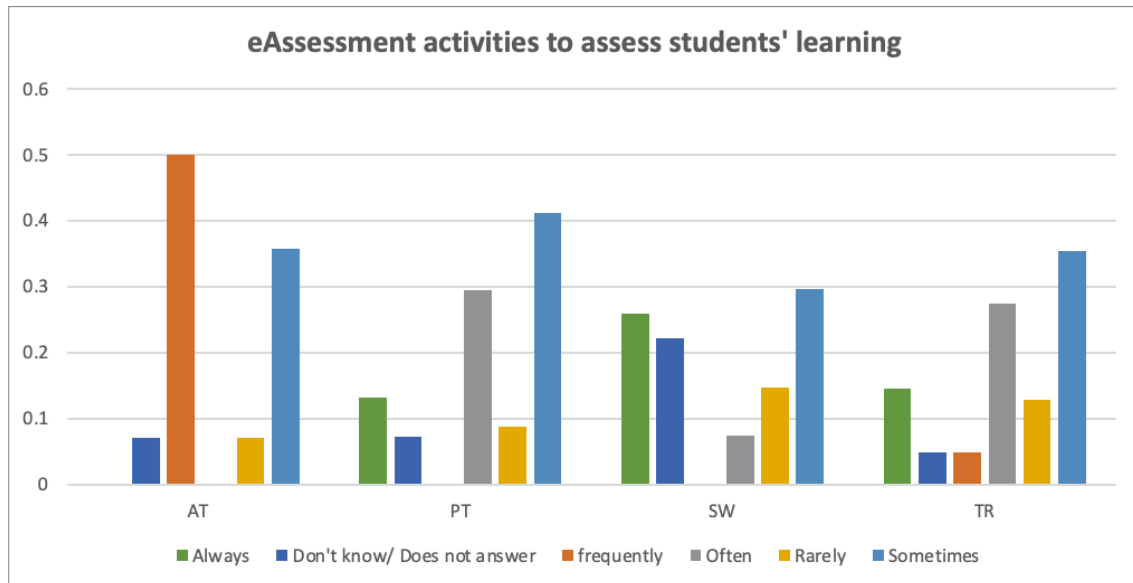


Chart 20- Frequency of eAssesment activities to assess student's learning

The bar chart shows the frequency of involvement in eAssessment activities across the four countries and responses are categorized into six frequencies: Always, Don't know/Does not answer, Frequently, Often, Rarely, and Sometimes.

The data reveals distinct patterns in the frequency of eAssessment involvement across Austria, Portugal, Sweden and Turkey.

In Austria, the majority of respondents frequently engage in eAssessment activities, with over 50% selecting 'Frequently', while around 30% indicated 'Don't know/Does not answer', and minimal responses were seen for 'Always', 'Rarely', and 'Sometimes'.

In Portugal, 'Don't know/Does not answer' is the most common response, making up about 35%, followed closely by 'Often' at around 30%, with 'Always' and 'Sometimes' being less common and 'Rarely' having minimal representation.

Sweden shows a similar trend, with 'Don't know/Does not answer' accounting for approximately 35% of responses, and significant involvement also seen in 'Always' and 'Frequently', each around 20-25%, while 'Often' and 'Rarely' are less common.

In Turkey, 'Don't know/Does not answer' is again the most prevalent response at about 35%, with 'Often' and 'Sometimes' each around 20-25%, and 'Always' and 'Frequently' having less representation.

The results reveals that there is significant variation in the frequency of involvement in eAssessment activities across the four countries. Austria stands out with a high frequency of 'Frequently' responses, indicating a consistent use of eAssessment activities. Portugal, Sweden, and Turkey, on the other hand, have a substantial proportion of respondents selecting 'Don't know/Does not answer', suggesting some level of uncertainty or non-engagement in eAssessment activities. Despite these variations, it is evident that eAssessment practices are integrated to some extent in all four countries, with a notable portion of respondents indicating regular involvement in these activities, either frequently or often.

eAssessment activities for formative/summative assessment

The survey wanted to explore the use of eAssessment activities in both formative and summative assessments, providing a view of how digital tools are integrated into educational evaluation processes. Specifically, respondents were asked about their engagement with eAssessment activities for both formative and summative purposes. The results synthesized on the following chart offer a detailed look into the frequency and extent of eAssessment practices among educators in various countries.

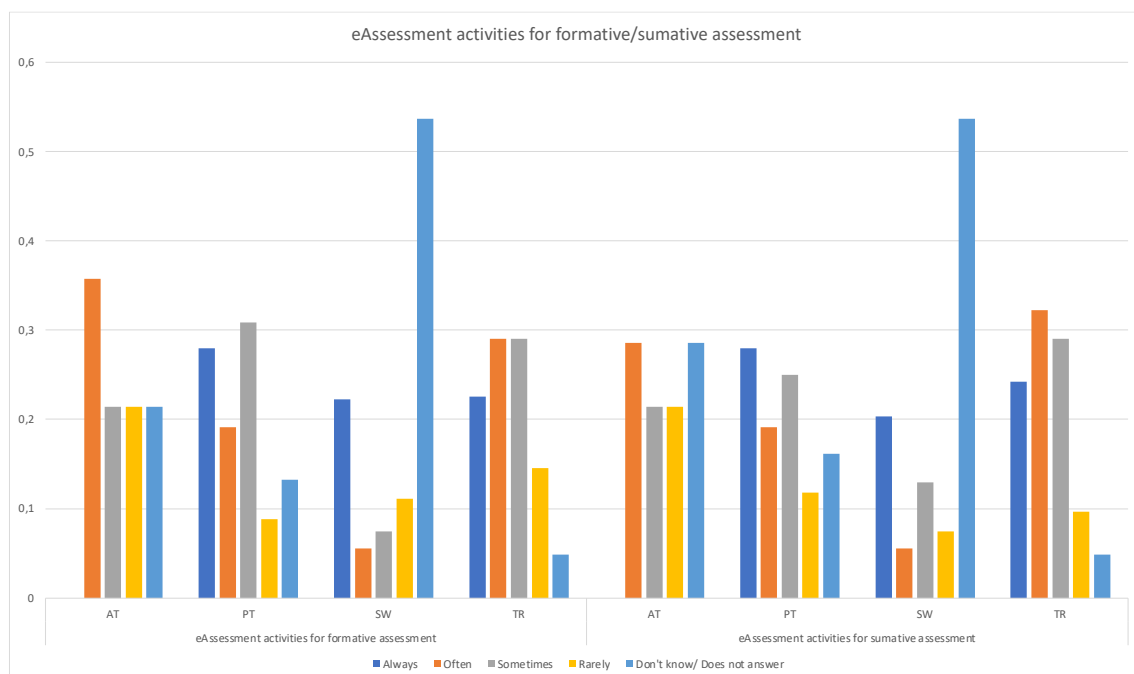


Chart 21- eAssessment activities for formative/summative assessment

Austria:

Formative Assessment: The most common responses are 'Often' and 'Sometimes', with fewer respondents selecting 'Always' (blue). 'Rarely' (yellow) and 'Don't know/Does not answer' have minimal representation.

Summative Assessment: Similar to formative assessment, 'Often' and 'Sometimes' are predominant, followed by 'Always' (blue).

Portugal:

Formative Assessment: Responses are fairly balanced, with 'Sometimes' and 'Don't know/Does not answer' being the most common. 'Often' and 'Always' are also significant.

Summative Assessment: The distribution is similar, with 'Sometimes' and 'Don't know/Does not answer' leading, followed by 'Often' and 'Always'.

Sweden:

Formative Assessment: 'Don't know/Does not answer' is the predominant response, indicating a high level of uncertainty or non-response. 'Always' and 'Often' are also notable, with 'Sometimes' and 'Rarely' being less common.

Summative Assessment: Similar to formative assessment, 'Don't know/Does not answer' is dominant, with 'Always' and 'Often' also being significant.

Turkey:

Formative Assessment: The responses are varied, with 'Often' and 'Sometimes' being the most common, followed by 'Always'. 'Rarely' (yellow) and 'Don't know/Does not answer' have notable representation.

Summative Assessment: The distribution is similar to formative assessment, with 'Often' and 'Sometimes' leading, followed by 'Always' and 'Don't know/Does not answer'.

These results indicate a diverse approach to eAssessment activities across the four countries. Austria shows a regular use of eAssessment activities with 'Often' and 'Sometimes' being the most frequent responses. Portugal exhibits a balanced distribution with significant responses across all categories, including a high level of uncertainty or non-response. Sweden stands out with a high level of 'Don't know/Does not answer', suggesting either uncertainty or lack of engagement in eAssessment activities. Turkey displays a varied distribution with a presence in all response categories, indicating a diverse approach to eAssessment.

Frequency of eAssessment tasks

In the survey the participants were asked about the frequency of eAssessment tasks. The results are showed in the following chart:

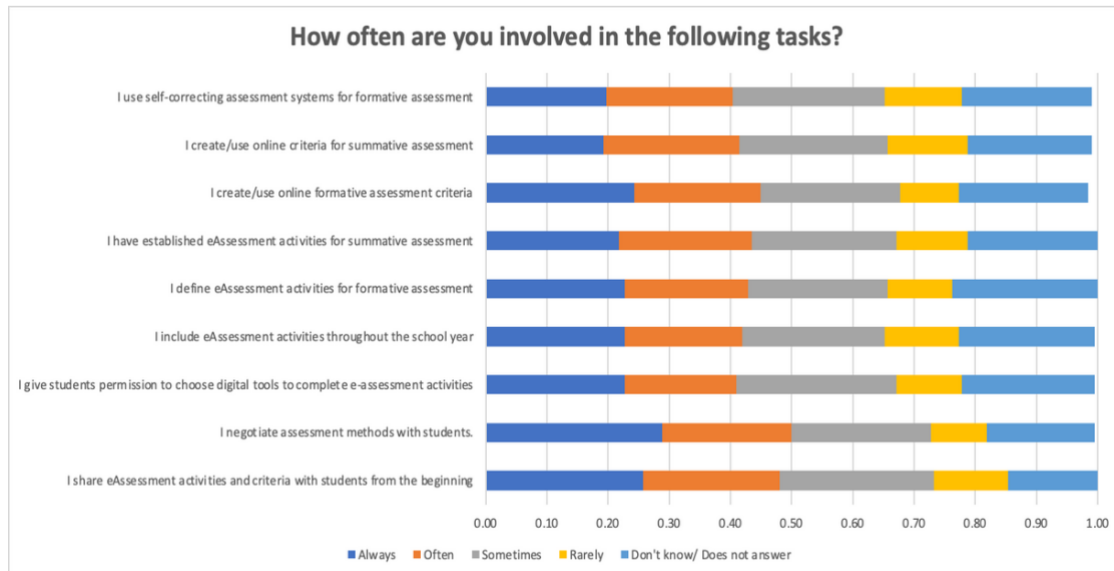


Chart 22- Frequency of eAssessment tasks

The involvement in various eAssessment tasks among respondents shows a diverse yet consistent pattern. A significant portion of educators frequently use self-correcting assessment systems for formative assessment, with approximately 35% always and around 25% often engaged in this practice. Similarly, about 30% of respondents always create or use online criteria for summative assessment, and 25% often do so, indicating regular involvement in this activity. When it comes to creating or using online formative assessment criteria, around 35% always participate, with an additional 25% often involved. Establishing eAssessment activities for summative assessment is also common, with approximately 30% always and 25% often engaged in this task. Defining eAssessment activities for formative assessment shows regular involvement as well, with about 30% always and 25% often participating. Including eAssessment activities throughout the school year is a frequent practice, with around 30% always and 25% often involved. Giving students permission to choose digital tools to complete e-assessment activities is practiced by approximately 25% of respondents always, with around 20% often doing so. About 25% of respondents always negotiate assessment methods with students, while another 15% often engage in this practice. Lastly, sharing eAssessment activities and criteria with students from the beginning is regularly practiced, with around 25% always and 25% often involved. These insights highlight a strong integration of eAssessment activities in educational practices, with varying degrees of engagement across different tasks.

The bar chart reveals several key trends in the involvement of eAssessment activities:

High Engagement: A significant portion of respondents 'Always' or 'Often' engage in activities such as using self-correcting assessment systems, creating online criteria for both formative and summative assessments, and establishing eAssessment activities.

Moderate Engagement: Tasks like defining eAssessment activities, including these activities throughout the school year, and sharing criteria with students are moderately engaged in, with a mix of 'Always', 'Often', and 'Sometimes' responses.

Varied Engagement: There is more variability in tasks such as giving students permission to choose digital tools and negotiating assessment methods, with notable proportions of 'Sometimes', 'Rarely', and 'Don't know/Does not answer'.

Frequency of feedback mechanisms

The following chart presents the survey results regarding the frequency of eAssessment activities used to assess students' learning:

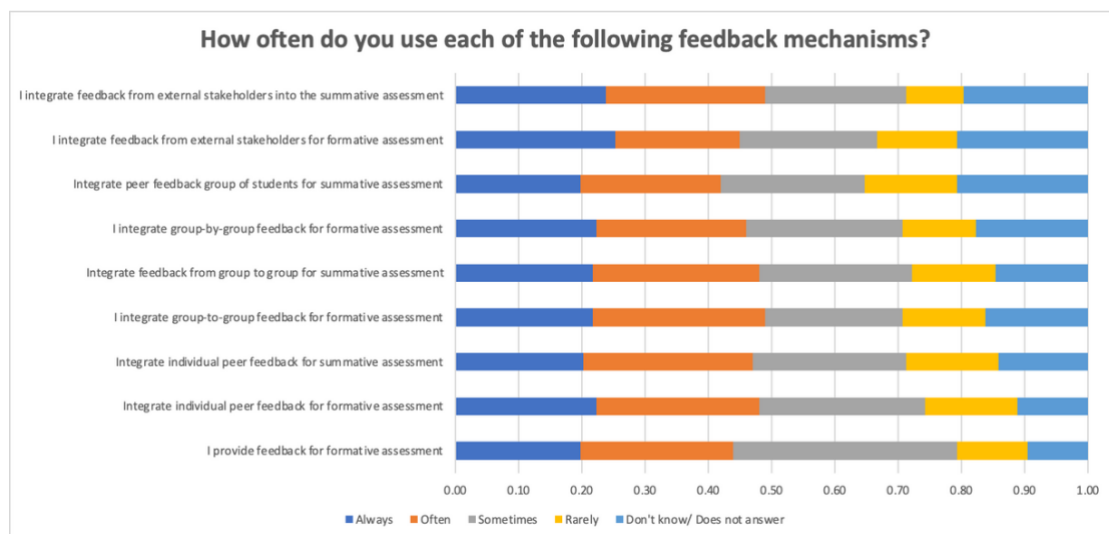


Chart 23- Frequency of feedback mechanisms

These results provide insights into the frequency of various feedback activities. When it comes to integrating feedback from external stakeholders into the summative assessment, approximately 25% of respondents do so always, while around 20% often incorporate this feedback, indicating a significant reliance on external insights. Similarly, for formative assessments, about 20% always and another 20% often integrate feedback from external stakeholders, though a notable 25% are either unsure or do not provide an answer.

Peer feedback plays a critical role in assessments as well. For summative assessments, integrating peer feedback from student groups is always done by close to 20% of respondents, and often by about 20%, with the largest group, around 25%, doing so sometimes. Group-by-group feedback for formative assessment sees about 20% of educators always incorporating it,

and approximately 25% often, suggesting it is a common practice, though another 20% sometimes use this method.

Feedback from group to group for summative assessments is always integrated by approximately 25% of respondents and often by about 20%, highlighting its importance in summative contexts. For formative assessments, group-to-group feedback is always used by about 20%, and often by another 20%, while a similar number sometimes use this approach, indicating a balanced usage across different frequencies.

Individual peer feedback is another key feedback mechanism. For summative assessments, close to 20% always integrate individual peer feedback, with about 20% doing so often and 25% sometimes. For formative assessments, approximately 20% always, 20% often, and 20% sometimes use individual peer feedback, showing a consistent engagement with this feedback method.

Finally, providing feedback for formative assessment is a regular practice, with approximately 25% of respondents always involved and around 20% often doing so. Another 20% sometimes provide feedback, indicating a strong overall commitment to formative assessment feedback among educators.

In summary, these results reflect a diverse yet consistent approach to using various feedback mechanisms across summative and formative assessments. There is a significant proportion of educators who regularly engage with both external and peer feedback, though there remains a considerable segment that is either uncertain or less frequently involved in these practices. The categories 'Always' and 'Often' show a significant presence across all tasks, indicating regular use of these feedback methods. 'Sometimes' and 'Rarely' also have considerable representation, suggesting that while some educators are heavily involved, others are less frequent in their use of these practices. The 'Don't know/Does not answer' category is also significant in several tasks, pointing towards a degree of uncertainty or lack of engagement in specific feedback mechanisms. Overall, the results reflect a diverse approach to using feedback in educational assessments, with varying levels of engagement across different methods.

FINAL CONSIDERATIONS

The COVID-19 pandemic significantly disrupted education systems worldwide, compelling countries to adopt various strategies to ensure continuity of learning. This unprecedented situation highlighted the importance of digital preparedness, flexible policy frameworks and targeted support for vulnerable students. Different countries adopted unique approaches based on their existing infrastructure, resources, and educational philosophies. In this report was examined the educational responses of four countries—Austria, Portugal, Sweden, and Turkey—during the pandemic, analyzing their strategies, challenges and outcomes.

Austria's approach to managing education during the COVID-19 pandemic was characterized by decentralized decision-making and flexibility at the school level. The Federal Ministry provided limited guidelines, which resulted in significant variation in the implementation of distance learning across schools. Teachers were given autonomy to organize their lessons using different digital platforms such as Microsoft Teams and LMS. The primary aim during the first lockdown was to consolidate already learned content before gradually introducing new material. Initially, many teachers were unprepared for digital instruction. This led to the organization of internal school training sessions, primarily conducted by IT teachers, to standardize the use of digital tools across subjects. A substantial proportion of students lacked adequate digital devices at the start of the pandemic. The government and schools made efforts to provide necessary equipment, reducing the number of students without access from 16% to 2%.

Portugal's response to the pandemic was marked by rapid and comprehensive policy measures designed to support remote learning and ensure educational continuity. The Ministry of Education implemented various policies, including a comprehensive online resource portal, guiding principles for distance learning, and a distance learning plan through Decree-Law no. 14-G/2020. Technological roadmaps were developed to help schools integrate Microsoft and Google platforms and a TV channel. Special guidelines were issued to support students with special educational needs, ensuring they received appropriate resources and support during remote learning.

Sweden's approach was relatively moderate, with schools remaining open for the most part, but national exams were canceled and higher education institutions shifted to distance learning. Unlike many countries, Swedish schools remained open, with only national exams canceled to reduce the risk of COVID-19 transmission. Sweden had a pre-existing strong digital infrastructure, which facilitated a smoother transition to remote learning. Tools like digital platforms were already widely used, and these were further utilized during the pandemic. Exceptions were made for students with special needs who struggled with distance learning, allowing them to attend school in person to receive necessary support.

Turkey's response involved a swift transition to distance education facilitated by pre-existing digital infrastructure and significant investments to enhance it. The Ministry of National Education (MoNE) enhanced the EBA (Education IT Network) platform to support remote

learning, providing course content and learning materials across all education levels. Collaborations with GSM operators provided students with free internet access to participate in online classes. MoNE also developed professional development programs for teachers in collaboration with UNESCO, focusing on improving digital teaching skills.

These differing approaches highlight the importance of digital preparedness, flexibility in policy implementation, and targeted support for vulnerable student populations in managing education during global crises. Austria's decentralized approach allowed schools to adapt based on their specific needs, while Portugal's comprehensive policies ensured a uniform response across the country. Sweden's strategy of keeping schools open maintained stability for students but required robust digital support systems to manage potential transitions to remote learning. Turkey's rapid enhancement of its digital platform and provision of internet access ensured continuity in education despite initial challenges.

The survey conducted provided insights into the use of digital tools, moderation strategies and assessment methods during the COVID-19 pandemic across four countries: Austria, Portugal, Sweden and Turkey.

The pandemic necessitated a shift toward remote learning, prompting significant changes in technology usage and acquisition among educators. The survey revealed several key trends in this regard. One of the most notable was the universal increase in laptop acquisitions, particularly in Austria and Sweden. This trend reflects the growing need for mobile and flexible work and learning solutions. Additionally, Turkey experienced substantial growth in smartphone and tablet acquisitions, indicating a strong shift towards mobile connectivity. Similarly, Sweden saw a significant rise in tablet usage, while Portugal demonstrated balanced increases in both laptops and tablets. Usage patterns further revealed that smartphones were heavily utilized in Turkey and Portugal, underscoring their central role in communication and learning. In contrast, laptops were the primary devices used for remote education in Austria and Sweden, aligning with their acquisition trends. Although desktop usage is declining, they remain relatively common in Austria.

In terms of the perceived usefulness of educational services during the pandemic, several tools were highly valued. E-portfolios, online tests, virtual seminars, interactive multimedia materials, and class support materials were considered very useful or useful by 80-90% of respondents. These tools played a crucial role in maintaining continuity in education by enabling assessments, facilitating collaboration, and providing access to learning materials. Software tools such as video software, graphics software, word processing software, and presentation software were also highly appreciated, reflecting their essential role in content creation and dissemination. However, some tools received mixed responses, with simulations, internal mailing lists, and podcasts/vodcasts eliciting varied opinions regarding their educational utility.

Overall, there was a clear preference for mobile and flexible digital tools, driven by the need for remote access and versatility in teaching and learning environments. This shift not only facilitated the continuation of education during the pandemic but also highlighted the critical importance of adapting to digital solutions in the face of unprecedented challenges.

Moderation strategies are crucial for managing digital learning environments, especially during periods of confinement. The survey highlighted significant differences in the adoption and frequency of moderation strategies across the four countries.

Austria and Portugal demonstrated high adoption rates, with approximately 70-80% of respondents regularly using moderation strategies. This high rate reflects a strong recognition of the importance of moderation in maintaining engagement and managing online interactions effectively. In contrast, Sweden had about 70% of respondents reporting that they did not use moderation strategies, indicating a significant gap in the implementation of these practices. Turkey showed a moderate adoption rate, with around 60% of respondents utilizing moderation strategies.

Key aspects of moderation were also examined. Feedback on students' work was highly valued across all countries, particularly in Portugal and Austria, where nearly 80-90% of respondents considered it the most important aspect. The clarification of student doubts was seen as crucial, especially in Portugal, where 90% of respondents viewed it as the most important aspect of moderation. Monitoring collaborative work was highly prioritized in Portugal and Austria, while Sweden and Turkey showed more varied opinions, with significant portions considering it fairly or slightly important.

These results underscore the critical role of moderation strategies in digital learning environments. They emphasize the need for comprehensive training and consistent implementation to enhance the quality of online education. Ensuring that educators are well-equipped to manage digital classrooms effectively is essential for maintaining engagement and supporting student learning, especially during challenging times such as a pandemic.

The survey results provided insights into the frequency and use of eAssessment activities across the four countries studied.

Austria showed a high frequency of engagement in eAssessment activities, with over 50% of respondents frequently using these methods. In contrast, Portugal, Sweden, and Turkey had a significant proportion of respondents who were uncertain or less engaged in eAssessment activities, with around 30-35% selecting 'Don't know/Does not answer.'

When considering the use of eAssessment for formative and summative assessment, Austria regularly employed these methods for both purposes, with 'Often' and 'Sometimes' being the most common responses. Portugal exhibited a balanced distribution, with significant responses across all categories, including a high level of uncertainty. Sweden showed a high level of uncertainty or non-response, particularly for summative assessments, reflecting potential

challenges or gaps in their eAssessment practices. Turkey displayed varied responses with a presence in all categories, indicating a diverse approach to eAssessment.

The frequency of engagement in specific eAssessment tasks varied. High engagement was noted in tasks such as using self-correcting assessment systems and creating online criteria for assessments, with a significant portion of respondents frequently involved in these activities. Moderate engagement levels were seen in activities like defining eAssessment activities and sharing criteria with students. However, tasks such as allowing students to choose digital tools and negotiating assessment methods showed more variability in engagement, reflecting differing levels of adoption and implementation across the surveyed countries.

Feedback mechanisms were another critical aspect of eAssessment. There was consistent engagement with both external and peer feedback mechanisms, with a significant portion of educators regularly integrating these methods into both formative and summative assessments. The 'Always' and 'Often' categories showed a significant presence across all feedback tasks, indicating regular use of these feedback methods. In contrast, the 'Sometimes' and 'Rarely' categories pointed to less frequent engagement by some educators, highlighting areas for potential improvement in the consistent application of feedback mechanisms.

Overall, the results underscore the crucial role of eAssessment in supporting student learning during the pandemic. They emphasize the need for robust and flexible eAssessment practices, comprehensive training for educators, and the integration of effective feedback mechanisms to enhance the quality of digital education. As countries continue to navigate the challenges posed by the pandemic, these insights can guide the development and implementation of more effective eAssessment strategies to support student learning outcomes.

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