REPUBLIC OF CROATIA
Ministry of Science and Education

CROATIA - HOW HAVE WE INTRODUCED DISTANCE LEARNING?

Ministry of Science and Education of the Republic of Croatia

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WHAT MAKES DISTANCE EDUCATION POSSIBLE IN CROATIA?

Croatia started the curricular reform of education in 2016, and since 2017 the reform has been particularly focused on improving students' and teachers' digital competences as well as equipping schools.

Already in 2017 we started a project of introducing digital literacy to various subjects and after-school programs by using microcomputers. In cooperation with the Institute for the Development and Youth Innovation, CARNET acquired 45.000 microcomputers for 6th grade primary school students with the aim to develop students' digital competences, foster creativity and innovation and an interdisciplinary approach to the use of information technologies.

Furthermore, Information Technology was introduced in 2018 as a compulsory subject in the 5th and 6th grades of primary school. To prepare for the introduction of the new subject, additional teachers were hired, specialised classrooms were equipped, and teachers were trained to implement new curricula focused on learning programming.

In addition to that, in 2018 the regulations on textbooks were changed to provide for budgetary funding of digitalising textbooks and learning materials.

Carnet, the Croatian Academic Network, launched in 2015 the pilot phase of the e-Schools project which equipped 150 schools and developed various support tools for them. All schools in Croatia will be included in the project this year.

In implementing digitalisation, the priority of the Ministry of Science and Education (MoE) was to ensure teachers' digital independence, which meant ensuring that teachers own laptops and classrooms are equipped with overhead projectors or interactive/smart whiteboards, so that various types of content and multimedia can be used in all classes. Thus 26.000 laptops were bought for teachers in 2019, and as many will be bought this year for the remaining teachers; projectors and smartboards were bought for classrooms that lacked them.

After that, we focused on equipping students through the Comprehensive Curricular Reform project funded by the EU. The plan was to digitalise schools according to the age of students, based on evidence collected in experimental schools and international comparisons. This meant that students in lower grades (6 to 10 years of age), who need to develop graphomotor skills, should only use tablets for activities such as group work, and thus get four to five tablets per class. In higher grades, when students (11 to 15 years of age) get subject classes, the principle was to provide each student with a tablet, thus encouraging the use of digital content and materials, and providing students with an opportunity to learn to use the learning technology responsibly. So far, tablets have been bought for all students in 5th and 7th grade of primary school, and 10.000 tablets were given to schools to use with their lower primary students under teacher supervision.

In secondary schools, equipment was provided only to students with lower socio-economic backgrounds, as the research in the pilot phase of the curricular reform showed that the majority of secondary school students already own equipment with Internet access.

In Croatia, primary education is compulsory and the emphasis is put on equal access. Thus the challenge was to provide all students with Internet access at home, so that they would be able to access digital content. Mobile network operators joined the initiative by providing all students who received tablets with SIM cards enabling free access to digital educational content and additional 2 GB of Internet traffic per month.

Together with tablets, a Mobile Device Management (MDM) system was bought that connects the tablets and enables centralised control. The system monitors tablet usage and enables centralised problem-solving.

Strong emphasis was put on developing teachers' digital competences and enabling them to work in a virtual environment. Teacher training for curricular reform was launched online in 2018, via the Loomen platform which includes virtual classrooms and online cooperation tools. In almost two years more than 50.000 teachers participated in such training. This was the key experience that later enabled teachers to establish virtual classrooms and communicate with students and other teachers without difficulty.

All of this contributed to the swift and effective establishment of distance learning in the context of the COVID 19 crisis.

HOW HAVE WE PREPARED TRANSFORMATION TO DISTANCE LEARNING IN TWO WEEKS?

When school closure was announced as a potential measure, at the beginning of March, the Ministry started preparations for distance learning. It took two weeks to move all classes online, and distance learning was successfully launched on March 16th.

The concept was based on two key principles:

1.   Access has to be provided to all, adapted to student age

2.   There needs to be a backup for every solution

The priority was to create the content needed to launch distance learning, so that teachers would have time to establish the communication infrastructure and adapt to online teaching.

For lower primary students the Ministry decided to cooperate with the public television, because this age group is too young to use digital technology independently. The teachers needed to establish communication channels with the parents rather than the students, and for this they were encouraged to use social networks and chat groups for parents to access with their smartphones.

For older students, 15 minute videos were created on the basis of a national schedule which should enable all students to reach all learning outcomes planned in the curriculum by the end of the school year.

Another priority for older students was to equip and provide Internet access to all of them.

Higher education institutions have also received guidelines to transfer to distance learning, and SRCE University Computing Centre centrally provided software and support through its distance learning centre. The higher education institutions are able to autonomously determine how these will be implemented in practice.

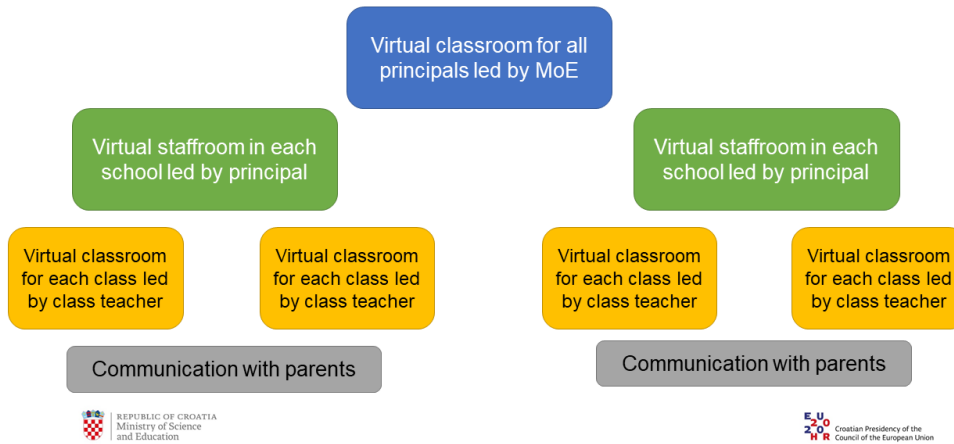Technical support to primary and secondary schools has been successfully provided by CARNet.

While preparing for distance learning, the Ministry published instructions for schools (Instructions to all primary and secondary schools for the organization of distance learning and Guidelines for distance learning for primary and secondary schools) focusing on:
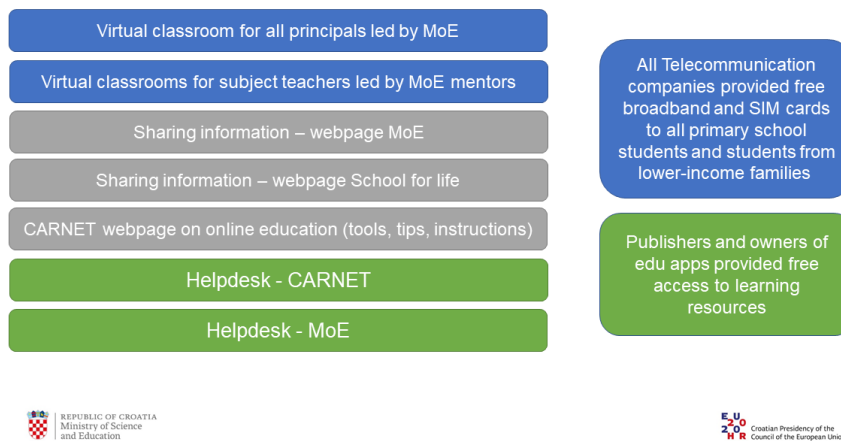
- establishing communication channels

- equipping students from lower socio-economic backgrounds

- instructions for the age-appropriate use of the pre-prepared content

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- monitoring and support.

Organizational plan for schools

Support – multiple levels and agents

The day before school closure, the minister, prof. dr. sc. Blaženka Divjak, provided all school principals with instructions and answered frequently asked questions in a public announcement (Address to Principals by Minister Blaženka Divjak).

The principle of always providing backup was implemented as follows.

Using multiple channels for publishing and sharing information:

- Three TV channels: HRT3, SPTV, RTL2
- Several websites: MoE, School for life, agencies
- YouTube channels
- Mail
- Messaging apps
- Social networks

Technical solutions

- AAI@Edu.Hr nation-wide authentication protocol is used by all primary and secondary schools for all students and teachers.
- Different platforms accessible with AAI@Edu.Hr:
    - Moodle
    - Teams
    - Yammer
    - Google classroom
    - Edmodo
- Distributed set of systems, not a single platform – distributing the load
- We used to have 100 access/minute, now we have 1100 access/minute

How to be ready for changes in education

- Lean and agile management
- Continuous improvements - transferring knowledge from each day/activity to another one
- Fast learning and even faster knowledge sharing
- "Never-ending story" - changes and innovations in schools must be continuous

WHICH GUIDELINES HAVE WE PROVIDED IN THE FIRST TWO WEEKS?

From the first day of distance learning, direct communication with a helpdesk was established, and various media were used to answer frequently asked questions and provide guidelines to schools and higher education institutions.

In addition to that, the questions frequently asked by schools, teachers, parents and students were answered in the following documents:

Internet access and devices

For distance learning to be able to function, every student must have **Internet access and an appropriate device at home**. Since a number of students do not have Internet access at home due to socio-economic reasons, teleoperators have been involved, providing a SIM card with free-of-charge access to educational content and an additional 2 GB of Internet per month for all students who needed it. More than 90,000 tablets are distributed to students.

26,000 computers were procured for teachers in 2019. The computers were distributed to schools in October and November 2019. Additionally, the principals can distribute computers that are located in IT classrooms in schools to teachers. In case some teachers still do not have a computer, or one of their own, the principal can contact the Ministry for funds to purchase a computer.

Work of employees during distance teaching

Since distance teaching began on 16 March 2020, the Ministry recommended teachers to spend at least part of their working hours in school to be able to cooperate and provide assistance, in order to establish a functional distance teaching system. This was possible because at that time there were no epidemiological restrictions.

However, the situation has changed significantly after a few days, **and as of 19 March 2020 a majority of teachers have been working from their homes**.

Requirements for work from home include: defining what should be done, how to contact employees, expected outcomes, equipment needed by the employees in order to work from their homes etc. For teachers without a personal equipment for working from their homes or teachers lacking technical knowledge for virtual teaching, advantages for working in the schools are obvious, at least during the initial period.

Vocational schools, secondary school graduates, practical subjects and student participation

The problem of vocational schools and numerous programmes for which online teaching cannot be centrally organised. The teaching of practical subjects is particularly problematic. **The Ministry of Science and Education has created online content for all general subjects taught in secondary schools.** This will ensure that when students in vocational education come back to their schools, they have time for practical subjects. Moreover, vocational teachers are encouraged to develop creative solutions to also teach practical subjects online if possible. Additional resources for teachers are available at the web of the Agency for VET.

Virtual content and organising classes

The basic principle of online teaching is that the content and the learning have to be made accessible to all students, regardless of the conditions at home and the support provided by teachers in the first week of online teaching, when the students were getting used to a new form of classwork.

The School on Channel 3 and two other channels programme of online classes together with teaching and learning in virtual classrooms will ensure that all learning outcomes are achieved by the end of the school year. We are aware that some students have already achieved some of the learning outcomes while some are lagging behind, and it is the teachers' support to make up for the differences in pace.

By the end of the first week, more than 50.000 virtual staffrooms and classrooms were established, with the participation of 450.000 teachers and students. In addition to that, more than 70.000 higher education students used the systems provided by SRCE, and the number does not include other distance learning systems which are used by higher education institutions.

In the second week the emphasis was on psychological support to students (via phone and email) and topical guidelines for other stakeholders in the system.

During the first two weeks of distance learning, to prevent imbalances in student workload, the Ministry published the document Recommendations for organizing a students work day in distance teaching and learning which defined the age-appropriate workload to help teachers plan.

HOW ARE WE CONTINUING IN THE WEEKS THREE AND FOUR?
The Ministry is working on developing the Guidelines for assessment and grading in a virtual environment and evaluating various scenarios for the implementation of the State Matura national exam for secondary school graduates.

The Guidelines focus on determining and evaluating importance of a specific content, so that the assessment supports the development of 21st century competences rather than rote learning of facts. The Guidelines will include concrete examples and tools to be used in the virtual environment.

More details available here (https://mzo.gov.hr/en)

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