https://doi.org/10.36315/2022v1end048
Education and New Developments 2022

# SUCCESSFULLY NAVIGATING DIGITAL STORMS IN CROATIAN EDUCATION SYSTEM

**Antonela Czwik**
*Education and Teacher Training Agency (Croatia)*

## Abstract

2020th was challenging for all teachers in Croatia. Although previously strengthened by the reform of the new Curricula in 2016 and the "School for Life" project in 2018, many have resisted the changes, including the digitalization of teaching. In March 2020th there were no alternatives. In the storm that threatened to stop education at all levels we had to strongly resist defeat and find the strength to fully digitalize teaching. It was no longer enough to have a systematic reform process or legalized curricula, but to make a personal digital transformation. It was imperative to carry out intrinsic reform of one's methodological skills, awaken creativity in teaching approaches and improve competences.
Cooperation and exchange of experiences, as well as investment in improving digital maturity, digital pedagogy, and digital skills, were crucial for strengthening teachers' personal potential. Series of webinars were designed to present new paradigms of teaching in the online environment in cooperation with the community of primary and secondary school mathematics teachers. Four areas in which digital competences of teachers are recognized are: Organization of online classes, Digital literacy, Communication in virtual classroom and External evaluation. E-student and E-teacher with obligatory Student-centered online teaching are key in organizing E-classroom. Subsets of such teaching for students are Project Assignment, Gamification, Flipped Classroom and Self-learning; and for teachers: Evaluation as learning, Formative and Summative evaluation and Individualized approach. Such schematic was upheld in organizing all 16 of webinars, building a foundation for perfecting teachers' necessary skills. Positive effects are visible in the school year 2021/22 not only in online classes but in during face-to-face classes increasing digital maturity in both teachers and students and strengthening collaboration between teachers.

***Keywords:*** *Digital, experiences, competences, teacher, online.*

## 1. Introduction

Aware of the need of improving education system Ministry of Science and Education of Croatia (MZO) started education reform in 2014. by publishing strategic documents, launching projects aimed at improving the digital competencies of all stakeholders in the education system, developing new curricula for all subjects that have not changed since 2006. high schools. Timeline:

- 2014. Education, Science and Technology Strategy (New Colors of Knowledge, Ministry of Science and Education of Croatia - MZO);
- 2015. – 2018. "e-Schools" pilot project (CARNET) - Establishing a system for development of digitally mature schools;
- 2015/2016. Cjelovita kurikularna reforma - CKR (Comprehensive curricular reform) and publication of new curricula for subjects, subject areas, cross-curricular topics and frameworks;
- 2018/2019 project "School for Life" - the beginning of the experimental implementation of new curricula
- 2018 - 2023 "e-Schools: Developing a system of digitally mature schools" (Phase II)
- 2019 - MZO introducing new curricula in all schools in school year 2019/2020.
- March 2020 - Covid 19, imposing obligatory online teaching for all (video lectures, LMS systems, online student-teacher-parent communication, new organization of learning, adapting teaching forms and methods in an online environment, production of digital educational materials, video lectures (expert working groups and MZO), comprehensive teacher support.
- June 2020 - Senior advisor support to mathematics teachers through 16 webinars
- 2021./2022.- reflection: increased level of digital maturity in the work of teachers and students

## 2. Objectives

The webinars were created in collaboration of Senior Mathematics Adviser with 16 leaders of county professional councils of mathematics teachers. Together, they each designed and conducted a webinar on two related topics: one from practice (experience of council leaders as a proposal of good practice to other teachers) and the other a recommendation for improvement of online teaching (methodical advice of a senior advisor with a proposal of a suitable available digital tool from the Office 365 package). The aim of these webinars is to support mathematics teachers in the implementation of online teaching and strengthening their competences to improve teaching practice in accordance with the new challenges of online environment. At each webinar, teachers had the opportunity to make a self-reflection of their own work and to get confirmation of whether they found a good way to conduct online teaching or need to make changes for improvement.

## 3. Webinar topics

Although webinars were intended for mathematics teachers, the topics of each webinar were interdisciplinary and applicable in online teaching in general. The webinars were published on the official portal of professional meetings of the Education and Teacher Training Agency in Croatia as part of the mandatory certified lifelong professional development of teachers. In each of the 16 webinars, in addition to a senior advisor, the lecture was given by the prominent mathematics teachers, whose topic described examples of good practice, experience and recommendations for distance learning. The second topic of the webinar was presented by a senior advisor as a recommendation for the improvement of online teaching: methodological advice and a proposal for a suitable available digital tool, mainly from the Office 365 package (available free of charge to all teachers and students with the support of the MZO), for better achievement of the educational goal in online teaching.

*Table 1. Topics and the number of participants with the results of the evaluation and the digital tools presented.*

| Topic | Date | Number of participants | Participants grade (1-5) | Tools |
|---|---|---|---|---|
| Formative evaluation / MS Forms (practical experience) | 15.06.2020. | 178 | 4.78 | MS Forms and Power Automate |
| External evaluation / Preparations for national exams (practical experience) | 16.06.2020. | 141 | 4.81 | Selfie |
| Flipped Classroom / Students Works in Liveworksheets (practical Experiences) | 17.06.2020. | 161 | 4.87 | Liveworksheets, PowerPoint, Windows 10 Game Bar and YouTube |
| Distance learning from a principal's perspective / Organization of online teaching | 18.06.2020. | 140 | 4.8 | Planner Office 365 and Carnet Delta (learning analytics) |
| Virtual Classroom Communication / Headroom teacher in Remote Classroom | 23.06.2020. | 136 | 4.67 | Nettiquete and media literacy |
| E-classroom / Distance learning with the Sway app | 24.06.2020. | 145 | 4.89 | Sway, LMS, One Note and Class Note |
| Self-learning and lifelong learning / Self-learning in distance learning | 25.06.2020. | 160 | 4.84 | YouTube and Erasmus+ (lifelong learning) |
| E-student / Homework in online teaching (practical experiences) | 29.06.2020. | 162 | 4.81 | Viber, Whatsapp and Kaizala |
| The other side of the coin / shortcomings of distance learning, E-teacher | 30.06.2020. | 155 | 4.89 | E-portfolio and SharePoint |
| The Road to Clear Rules in Distance Learning / Digital Literacy | 01.07.2020. | 175 | 4.82 | Word, Excel, PowerPoint |
| Evaluation as learning / Rubrics | 02.07.2020. | 205 | 4.86 | Rubrics and grading in Teams, Google Classroom and Moodle |
| Evaluation with the Testmoz tool / Summative evaluation | 06.07.2020. | 200 | 4.76 | Testmoz, Proctor, Excel, E-dnevnik+ |
| My calendar / Project assignments | 07.07.2020. | 189 | 4.86 | Geogebra and Word |
| Distance learning for gifted students / Individualized approach | 09.07.2020. | 232 | 4.74 | Accessibility in Windows 10 for students with disabillities |
| Digital Unlocking game / Igrification | 14.07.2020. | 249 | 4.81 | Games in Moodle, Edmodo, Labyrint Thinkport, PlayBrighter |
| Evaluation in Zoom / Online student-centered teaching | 15.07.2020. | 266 | 4.85 | Zoom, Reflection (MS Forms and Google Forms) |

## 4. Conclusions

Collaboration in online teaching was conducted through school professional councils of mathematics teachers, regional professional councils of teachers and at professional gatherings and trainings at all levels from regional to national. It turned out that collegial support was the most important help in accepting the challenges of online teaching and solving the difficulties they encountered during its implementation. By sharing educational materials, ideas and experiences, the collaboration between teachers working at the same level of education but also at the entire vertical of the education system has been continuously strengthened.

Positive effects in the school year 2021/2022 visible during the insight of the Senior advisor into the professional and pedagogical work of teachers are:

- increased level of digital maturity of each teacher
- easier use of digital technology as an auxiliary tool
- acceptance of videoconferencing tools for simple and fast communication (meetings and agreements with colleagues, preparation and assistance to students. parent meetings, class councils, teachers' councils, professional meetings and workshops)
- improving the infrastructure of each school: faster and more reliable internet, better availability, and reliability of all LMS systems and tools for online communication,
- using wide range of various digital tools applicable in online and live teaching
- using ready-made and creating new digital educational materials - several online repositories available
- availability of teachers through digital channels for helping students with learning difficulties or for advanced activities for the gifted ones
- establishing faster and better student-teacher communication
- establishing faster and better teacher-parent communication

### *References*

Croatian Academic and Research Network (2019). "*E-Schools*". Retrieved January 7, 2021, from https://www.e-skole.hr/

Ministry of Science and Education (2014). *Education, Science and Technology Strategy*. Retrieved May 22, 2022, from https://mzo.gov.hr/

Ministry of Science and Education (2015). *Comprehensive curricular reforms (Cjelovita kurikularna reforma – CKR)*. Retrieved October 12, 2021, from http://www.kurikulum.hr/

Ministry of Science and Education (2019). *Decision on the adoption of the curriculum for the subject of Mathematics for primary and secondary schools in the Republic of Croatia,* Retrieved May 22, 2022, from https://narodne-novine.nn.hr/

Ministry of Science and Education (2020) *National Project "School for Life"*, Retrieved June 2, 2021, from https://skolazazivot.hr/