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Dissemination Report

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January, 2021

Project acronym:	**TeComp**
Project full title:	**Strengthening Teaching Competences in Higher Education in Natural and Mathematical Sciences**
Project No:	598434-EPP-1-2018-1-RS-EPPKA2-CBHE-JP
Number of grant contracts	2018-2467/001-001
Web address of project	www.tecomp.ni.ac.rs
Funding Scheme:	Erasmus+
Coordinator Institution:	University of Nis
Coordinator:	Prof. dr Jelena Ignjatović
Project duration:	15.11.2018. – 14.11.2022
Work package:	WP5 – Quality assurance and monitoring
Lead organization of	University of Korce
WP6:	Activity 6.3 Annual joint report disseminated
Version of the document:	second
Status:	Final
Dissemination level:	Institutional, Internal

Introduction

The dissemination report is organized in relation to the tasks foreseen by the logical frame matrix, i.e., Creating the project website, Printing and distributing promotional material, Disseminating reports on the project achievements, Organizing popularization lectures, Developing a Rulebook on CPD of teaching staff, Developing Strategy for the support and ongoing improvement of the quality of T&L and Developing a unified questionnaire.

Disseminations

Top notch education platform

One of the Project members Prof. Dr. Miroslav Marić, Faculty of Mathematics University of Belgrade, Serbia, led a team that created an educational platform(http://edusoft.matf.bg.ac.rs/). During the creation process, the methods of good practice already familiarised within the frame of TeComp, were implemented and used, increasing the visibility and dissemination of the Project results. This effort did not go unrecognized, because this platform received a prestigious award at a world competition "Zero Project 2020", organized by the Essl Foundation and the United Nations in Vienna, and presented on the main Serbian TV station, RTS.

Edusoft.matf.bg.ac.rs
(https://youtu.be/3mc7USkrMEw)
(https://youtu.be/lUTPA8SvByU)

One of the TeComp activities was research aimed at determining how students adapted their learning strategies in the sudden interruption of normal study patterns in the first period of the pandemic (March 2020 - June 2020). The online questionnaire was distributed to several universities in Serbia (Belgrade, Novi Sad, Niš, Kragujevac) to 521 students of different faculties. Research results were presented and published at the Tie2022 conference.

Questionnaire results published.

9th International scientific conference
Technics and Informatics in Education – TIE 2022
16-18 September 2022

Session X:*Technics and informatics in education*
Professional paper
UDC: XX.XX

Resilience of Higher Education Institutions in Serbia: A Student's Perspective

Olja Jovanović[1*], Ana Pešikan[1] and Slobodanka Antić[1]
[1]University of Belgrade/Faculty of Philosophy, Belgrade, Serbia
*olja.jovanovic@f.bg.ac.rs

Abstract:*The present study investigates the experiences of undergraduate students in pursuing their studies in the initial months of the COVID-19 pandemic. In this study, we use an exploratory descriptive approach through an online survey with a convenient sample of 467 undergraduate students. The results indicate that the students have experienced emergency remote education (ERE) as more demanding in comparison to the pre-pandemic face-to-face learning/teaching. Since the ERE has been largely dependent on the resources of learners and their families, it is important to highlight that 25.1% of students reported that none of the teachers showed interest in differences among students in their living and learning contexts,while 34.5% reported that none of the teachers individualized their teaching, accordingly. Recommendations are presented to build the resilience of higher education institutions in Serbia during future emergencies.*

Keywords:*resilience; higher education; COVID-19 pandemic; education in emergencies*

1. INTRODUCTION

In the face of disturbances,such as pandemics, natural disasters, wars, and social unrest, higher education(HE) has an important role to maintain academic quality and continuity. As Bartusevičienė et al. [1] emphasize, educational institutions have to be able to respond to a crisis and continue to provide uninterrupted services through adaptation and adjustment. In this context, resilience as a quality of being able to return quickly to a previously good condition after facing disruptions is becoming crucially importantforHE institutions (HEIs).

One of such disturbances calling for resilient HEIswas the COVID-19 pandemic.The pandemic has imposed increased demands on HE and seriously shaken the established ways HEIs run their courses [2]. This process, emerging from a global context burdened with uncertainty and prosocial concerns and characterized bya rapid and unplanned shift towards remote education, is recognized in the literature as emergency remote education (ERE) [3]. Overview of the studies on the ERE shows that the main challenges areassociated withlack of technical and material resources,lack of digital and pedagogical/learning skills, as well as lack of social interaction in learning/teaching process[4]. Consequently, the ERE is associated with increased stress, burnout and mental health problems for both teachersand learners [4].

The first recorded case of the coronavirus in Serbia occurred in early 2020. Following its rapid spread, the government announced restrictions with stringency increases as the COVID-19virus spread.An expansion of government-imposed restrictions continued until May 2020, after which a first steps towards limited reopening were introduced. In the initial months of the pandemic, university classrooms and dorms were emptied. HEI'smanagement have responded by moving academic and related activities online with a sense of urgency.Researchindicates that for a majority of the HE teachers in Serbia online teaching was a novel task, i.e.,they did not have the experience with online teaching prior to the ERE [5].HE teachers have experienced a mismatch betweenavailable resources and support, and previous experiences with remote teaching practices and technologies, on the one hand, and demand for high quality online teaching/learning practices, on the other hand.However, how has the transition from in-class to remote education been experienced by HE students in Serbiaremains under-researched.

1.1. Organizational Resilience

The concept of resilience regained attention following the COVID-19 pandemic. Ithas been used to describeindividuals, organizations, and/or systems that are able to respond to and recover from threatening experiences with minimum disruption to their stability and functioning [6].The authors focusing on a level of institution describethis feature as organizational resilience. If organizations are not sufficiently prepared to mitigate impacts and effectively respond to crises, it could have a negative impact on their

The Working Group for Educational Software of the Faculty of Mathematics, University of Belgrade deals with the improvement of teaching mathematics, computer science and informatics through the development of electronic platforms, professional development of teachers, as well as creating electronic materials for teaching and retraining in the IT sector. All created teaching materials, electronic courses and software packages are free and publicly available at: http://edusoft.matf.bg.ac.rs/. Among the educational materials, we highlight the currently very current educational platform "Final Exam – a platform for equal inclusion of students in the educational process", which was recently awarded at the world competition "Zero Project 2020", organized by Essl Foundation and the United Nations in Vienna (http://zavrsniispit.matf.bg.ac.rs/).

This event was reported by the Serbian Government (https://www.srbija.gov.rs/vest/448647/platforma-nasihstrucnjaka-nagradjena-na-svetskom-takmicenju-zero-project-2020.php), Radio Television of Serbia (https://www.youtube.com/watch?v=3mc7USkrMEw&feature=emb_title) as well as educational institutions and other relevant institutions (http://ezbirka.matf.bg.ac.rs/?action=news).

In addition to the "Final Exam" platform, the Mathematical Society of Serbia, the Faculty of Mathematics University of Belgrade and the GeoGebra Centre Belgrade, the "eCollection" and "Entrance Exam" educational platforms were also created. The "eCollection" is an electronic collection of math tasks for primary school higher years students (http://ezbirka.matf.bg.ac.rs/). The collection contains over 12,000 tasks with solutions, grouped by grades and areas.

The "Entrance exam" (http://www.prijemniispit.matf.bg.ac.rs) contains tasks in mathematics and Serbian language intended for students who are preparing to take entrance exams at the faculties where the program includes the listed subjects. Within these two platforms, more than 4,000 teacher accounts have been opened so far, the number of users has exceeded 100,000, and in the midst of preparations for the final exam, over 50,000 users have accessed the platforms daily. The platforms have been recommended by the Ministry of Education, Science and Technology Development, the Social Inclusion and Poverty Reduction Unit of the Government of the Republic of Serbia and UNICEF as platforms with educational resources for all levels of distance education and they are on "List of digital tools for working with children and students who need additional support" (http://www.mpn.gov.rs/wp-content/uploads/2020/05/3.a.-Listadigitalnih-alata-za-dodatnu-podr%C5%A1ku-u%C4%8Denje-na-daljinu.pdf). The platforms were presented by invitation at the first online digital conference "Digital Education 2020" (http://edtech.center/sr/konferencija-2020/).

MATΦ
University of Belgrade
Faculty of Mathematics
11001 BELGRADE, SERBIA
Studentski trg 16
P.O.Box 550
Phone (+381 11) 20 27 801
Fax (+381 11) 26 30 151
matf@matf.bg.ac.rs
www.matf.bg.ac.rs

Report on the implementation of the TeComp Erasmus+ project at the Faculty of Mathematics, University of Belgrade

It is my pleasure to briefly report on some activities of the Faculty of Mathematics, University of Belgrade, which were largely implemented on equipment purchased under the Erasmus + project "Strengthening Teaching Competences in Higher Education in Natural and Mathematical Sciences (TeComp)", No. 598434-EPP-1-2018 -1-RS-EPPKA2-CBHE-JP.

Namely, the Working Group for Educational Software of the Faculty of Mathematics, University of Belgrade deals with the improvement of teaching mathematics, computer science and informatics through the development of electronic platforms, professional development of teachers, as well as creating electronic materials for teaching and retraining in the IT sector. All created teaching materials, electronic courses and software packages are free and publicly available at: http://edusoft.matf.bg.ac.rs/.

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MATΦ
University of Belgrade
Faculty of Mathematics
11001 BELGRADE, SERBIA
Studentski trg 16
P.O.Box 550
Phone (+381 11) 20 27 801
Fax (+381 11) 26 30 151
matf@matf.bg.ac.rs
www.matf.bg.ac.rs

Finally, the "eSchool of the Web" platform (http://edusoft.matf.bg.ac.rs/eskola_veba/) is an electronic school of web programming, which enables interactive learning of the most modern free web technologies through carefully designed courses. There are a large number of courses on the platform, which cover modern free web technologies: HTML, CSS, Bootstrap, JavaScript, TypeScript, jQuery, AngularJS, Angular, React, Vue.js, PHP, Laravel, MySQL, Java, etc. We point out that over 5,000 users have attended the courses per month on average.

All the mentioned platforms have a very important role in teaching, and they were especially evident in distance teaching during the pandemic. The platforms have been recognized and proposed by the Institute for the Advancement of Education as teaching materials for the preparation of the final and entrance exam (https://zuov.gov.rs/ucenje-na-daljinu-alati-za-pripremu-zavrsnog-prijemnog-ispita-gotovi-testovi/), and teaching materials for distance learning (https://zuov.gov.rs/alati/#1585241840186-836632cd-a772).

Belgrade, 10. 11. 2020.

Prof. dr Zoran Rakić
Dean of the Faculty of Mathematics
University of Belgrade

UNIVERZITET U BEOGRADU, FIZIČKI FAKULTET
Studentski trg 12-16, Čara Dušana 13, 11000 Beograd, P.Fah 440, Tel: 7158-151, Fax: 3282-619
www.ff.bg.ac.rs webmaster@ff.bg.ac.rs
UNIVERSITY OF BELGRADE, FACULTY OF PHYSICS
Studentski trg 12-16, 11000 Belgrade, Serbia, P.O.Box 440, Tel: +381 11 7158-151, Fax: +381 11 3282-619

Belgrade, November 11., 2020

TITLE: Statement of performing online workshop on EU project entitled "TeComp - Strengthening Teaching Competences in Higher Education in Natural and Mathematical Sciences (598434-EPP-1-2018-1-RS-EPPKA2-CBHE-JP)" at the University of Belgrade, Faculty of Physics

To whom it may concern,

Within the mentioned project in the title, I declare that a one-day online workshop entitled "Training of teachers and associates for conducting online teaching on the G Suite for Education platform" was held four times: March 16 and 23, and October 5 and 12, 2020.

Regards,

Prof. Dr. Ivan Belča,
Dean

FACULTY OF BIOLOGY
UNIVERSITY OF BELGRADE
Studentski trg 16
11000 BELGRADE
Republic of SERBIA
Tel: +381 11 2186 635
Fax: +381 11 2638 500
E-mail: dekanat@bio.bg.ac.rs

Belgrade, November 5, 2020

TITLE: Statement of performing online workshop on EU project entitled "TeComp - Strengthening Teaching Competences in Higher Education in Natural and Mathematical Sciences (598434-EPP-1-2018-1-RS-EPPKA2-CBHE-JP)" at the Faculty of Biology University of Belgrade

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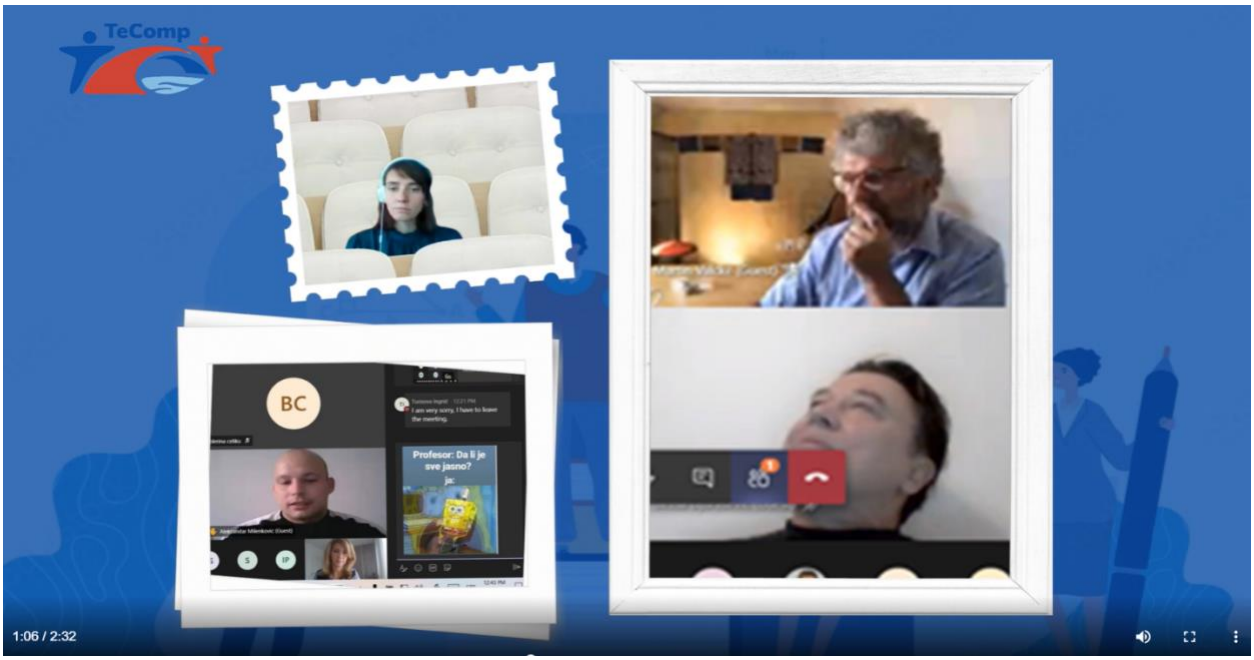
Best wishes,

Prof. Dr. Željko Tomanović, Dean

Dissemination recap

A promotional video containing all achievements of the project during the year 2020 has been made and uploaded to our official website.

(http://www.tecomp.ni.ac.rs/wp-content/uploads/2022/12/dissem_recap_1.mp4)




TeComp


TeComp
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University of Niš

The TeComp Consortium

www.tecomp.ni.ac.rs
e-mail:
tecomp@ni.ac.rs

tecomp.p2018@gmail.com

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