DISCO
Democratic and Inclusive School Culture in Operation

Digital teaching technologies as scaffolding tools in inclusive education

Final Conference

Brussels, 10 October 2019

Democratic and Inclusive School Culture in Operation (DISCO)

Funded by the European Union and the Council of Europe

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Implemented by the Council of Europe

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Presentation - Structure

- Aims of the Project

- Achievements

- Challenges faced and Key lessons learned

- Follow up and Sustainability of the results

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Aims of the project

- Development of new or adapting the existing one digital learning tools, for collaborative learning between students with disabilities and students without disabilities.

- With the implementation of the Unified Theory of Acceptance and Use of Technology (UTAUT2) determine the factors that significantly affect behavioral intentions and the actual use of educational technology in this case in inclusive education among teachers in schools.

- With the implementation of the same method, we tried out to identify the factors that significantly affect students accepting of technology in cooperative learning between students with disabilities and without disabilities.

- Testing the contribution of implementation of digital technology in collaborative learning between the students with disabilities and students without disabilities on quality of students' knowledge, the sustainability of student's knowledge, students' motivation (in both groups).

- Developing the materials witch in the future could be used for teachers' training in the field of implementation of digital technology in inclusive education.

- **Examination, how collaborative learning influences the empathy, acceptance, and integration between students with disabilities and without disabilities.**

- Delivering the technological equipment to the Montenegrin and Bosnian schools.

Achievements

- About 200 primary and secondary school teachers from 10 different schools from Austria, Montenegro and Bosnia and Herzegovina, voluntary participated in the teacher in training.

- About 300 students from these schools have begun using digital technology as a tool for collaborative learning between students with disabilities and students without disabilities.



Teachers workshops are presented at first three photography, at fourth photography is visually impaired students who use created learning tools.

Developed digital dichotomous key for visually impaired students for biological education

Differences between teaching tools

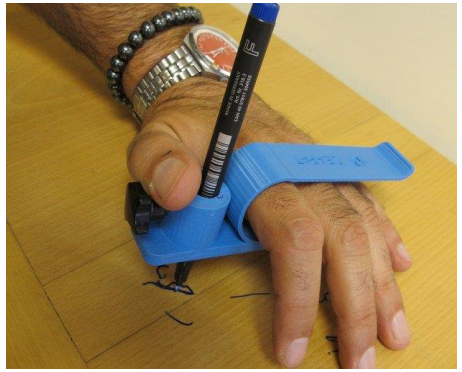
Digital dichotomous keys for students without disabilities

Digital dichotomous keys for blind and visually impaired students

3D printers and producing teaching tools for individual students needs

Models made by teachers



Models made by students

- Basic demographic about institutions from which teachers and students participate in the project.

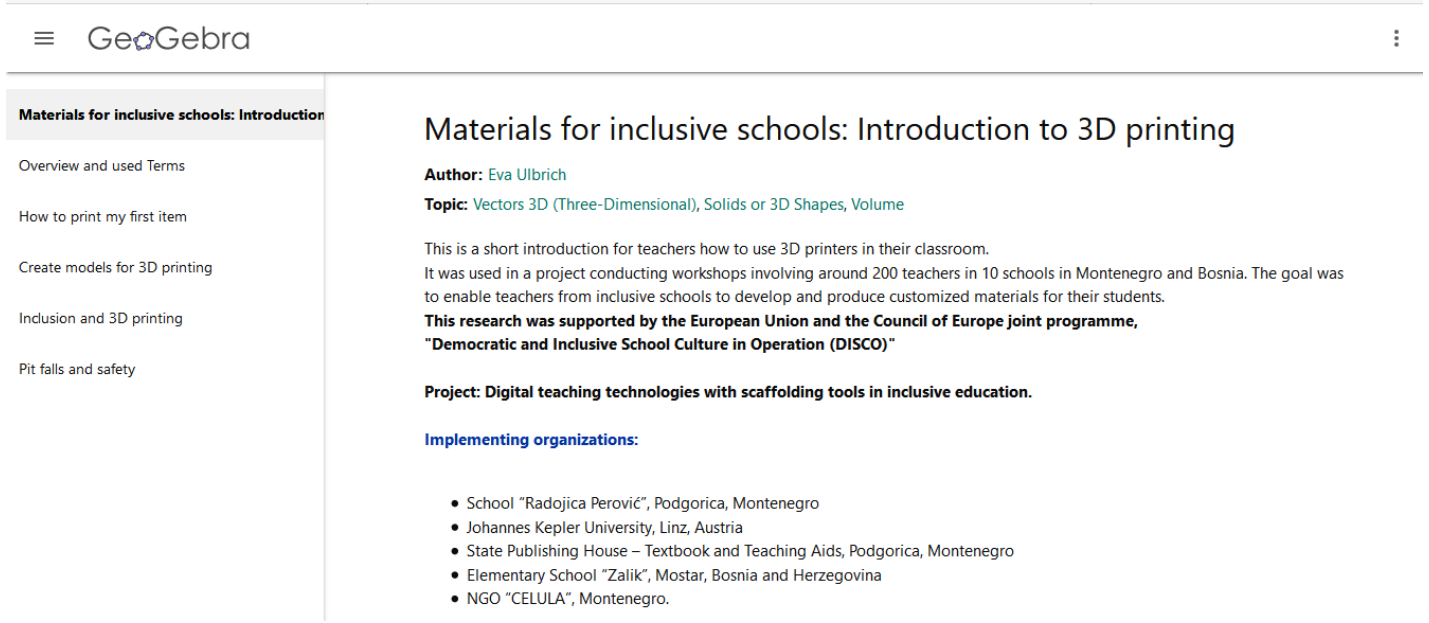
Institution:	Type od school:	Country:
Odilien-Institut Graz (Secondary school)	A special school, for students with disabilities.	Austria
Resursni centar „Podgorica“; (Secondary school)	A special school, for students with disabilities.	Montenegro
Zalik”, Mostar, (Primary school)	Inclusive school	Bosnia and Herzegovina
,,Mileva Lajović Lalatović“, Nikšić; (Primary school)	Inclusive school	Montenegro
„Dašo Pavičić“, Herceg Novi; (Primary school)	Inclusive school	Montenegro
„Božidar Vuković Podgoričanin“; (Primary school)	Inclusive school	Montenegro
„Štampar Makarije“, Podgorica; (Primary school)	Inclusive school	Montenegro
“Secondary School of Economics”, Nikšić;	Inclusive school	Montenegro
Technical and Vocational School “Petnjica”; (Secondary school)	Inclusive school	Montenegro
Art school „Vasa Pavić“, Podgorica; (Secondary school) .	Inclusive school	Montenegro

- First accepted scientific publication:

Anđić, B., Cvjetićanin, S., Hayhoe, S., Maričić, M. (2019): Dichotomous Keys in the Botanical Learning of Non-visual (Blind) People. *Journal of Baltic Science Education*, 18, (4) xx-xx.

- Technological equipment (3D printers, tablets) are provided for all school which participated in the project.

- Continuous support for 3D printing in an inclusive classroom provided through the GeoGebra platform.



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Participants satisfaction with training

At the basis of the qualitative and quantitative data it could be concluded:

- Teachers are satisfied with training which were provided;
- For the teachers, the highest value has practical usability of achieved knowledge in inclusive teaching;
- Teachers had opinions the collaborative learning between students with disabilities and without disabilities is the right way for achieving real inclusive education.

- Teachers liked the project and they promoted the value of it by themselves in media:

ODRŽANA OBUKA ZAPOSLENIMA ZA UPOTREBU 3D ŠTAMPAČA

Datum kreiranja: 29 maj 2019 | Štampa | El. pošta

U srijedu, 29. maja 2019. godine u JU Resursni centar za djecu i mlade „Podgorica" održana je obuka zaposlenima za upotrebu 3D štampača. Obuku su vodili nastavnici sa Univerziteta Johana Keplera u Lincu i predstavnici za ovaj projekat u Crnoj Gori Desanka Malidžan i Branko Anđić.

Obuka je omogućena kao rezultat učešća Ustanove na projektu „Digitalne tehnologije kao potpora inkluzivnom obrazovanju" u organizaciji Zavoda za udžbenike i nastavna sredstva – Podgorica. Pored obuke Ustanova će dobiti 3D štampač i materijal za štampu.

Obuci su prisustvovali: Dragana Mijatović, Marijana Antonijević, Sonja Ćuković, Zorica Baša, Irena Bogićević, Suzana Koletić, Tijana Dedeić, Gabrijela Janić i Toni Koletić.

SREDNJA MJEŠOVITA ŠKOLA U PETNJICI DOBILA 3D ŠTAMPAČ

29. maj, 2019 0

www.cedis.me

Srednja mješovita škola u Petnjici je jedna od osam škola u Crnoj Gori koje su dobitnice 3D štampača u okviru projekta Digitalne tehnologije kao potpora inkluzivnom obrazovanju. Poziv za učešće u ovom projektu, čiji je autor nastavnik bilogije **Branko Anđić**, objavljen je na sajtu Zavoda za udžbenike i nastavna sredstva Podgorica. Koordinator projekta za školu je prof. informatike **Mirela Ćeman**.

NAJNOVIJE

PROMOCIJA KNJIGE "VELIČANJE ALAHA" U BKC "SANDŽAK"
4. okt, 2019

POMOĆ PORODICI AGOVIĆ: KRAVA I TELE ZA BOLJI ŽIVOT
4. okt, 2019

LOVĆEN BANKA OTVARA FILIJALU U PETNJICI
4. okt, 2019

OTVORENO PRVENSTVO CRNE GORE U STRELJAŠTVU U PETNJICI

OŠ "DAŠO PAVIČIĆ" U PROJEKTU „DIGITALNE TEHNOLOGIJE KAO POTPORA INKLUZIVNOM OBRAZOVANJU"

MJESTO ZA VAŠU REKLAMU

U okviru projekta „Digitalne tehnologije kao potpora inkluzivnom obrazovanju" (Digital Teaching Technologies as Scaffolding Tools in Inclusive Education), Osnovna škola "Dašo Pavičić" dobila je vrijednu donaciju, 3D štampač. Održan je i seminar na kojem su nastavnici obučeni za upotrebu 3D štampača u inkluzivnoj nastavi. Tom prilikom obuhvaćen je i rad u programima za 3D modeliranje, kao i štampanje 3D objekata.

Uz OŠ "Dašo Pavičić", pojekat realizuju OŠ „Radojica Perović" Podgorica- vodeći partner, Univerzitet Johanes Kepler Linz, Austrija, Zavod za udžbenike i nastavna sredstva Crne Gore i OŠ „Zalik" Mostar, Bosna i Hercegovina.

Challenges faced and Key lessons learned

- The greatest challenges were delivering 3D printers for schools in Montenegro and Bosnia and Herzegovina. In these countries, there is not firm which deals with selling or importing of 3D printers.

- Students were much more creative and willing for accepting the implementation of digital teaching technologies, especially 3D printers, in the inclusive classroom than teachers. Teachers were more suspicious concerning technologies.

- Students much faster become able to using digital teaching technologies than teachers.

Follow up and Sustainability of the results

- Continuous teachers' support in the future will be undertaken by GeoGebra.
- On the global learning platform (GeoGebra) is organized a page with instructions and practical examples for teachers on how to implement digital technologies in inclusive education, this information will be updated, from time to time.
- As a part of this page continuing support of future users (students and teachers) are provided through updating the data, publishing the frequently asked question and direct support via online communication.
- A huge qualitative and quantitative data collected during the training will be processed turned into papers and published.

- Two other publications are on revision in international scientific journals.

- All publications contain suggestions for future developers and policymakers in the field of including technologies in inclusive education, about the main factors that influence actual using of these technologies in the classroom.

- Future research will complement data and knowledge in this area.

- State Publishing House – Textbook and Teaching Aids, Podgorica, Montenegro are in process of starting the including the instructions of using 3D printers in Teachers Handbook from the different subjects as a tool for collaborative learning between students with disabilities and without disabilities.

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Thank you

- Special thanks to Mrs. Arzu Burcu Tuner and Mr. Yusifov Shahin for very pleasant communication and support during the whole project life cycle..