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## **OER as an agent to support social justice**

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### **Introduction**

Technology improves human life in various ways. Technology in education changes the educational process, the role of students and teachers, but it can also be a leverage in establishing social justice. The paper deals with the thesis that open digital educational content can contribute to social justice because it supports the inclusion of students with poorer social status and students with special needs. The potential of open digital teaching materials to contribute to social justice is the consequence of their free access and technical features that enable students with special needs to use them without difficulty. This paper is a pilot study that has just begun since the content of the project has been recently released and their impact requires monitoring over a period of time.

### **About OER**

Open Educational Resources (OER) refers to "teaching, learning and educational materials in any media, digital or otherwise, that are in the public domain or are available with an open license that provides free access to these materials , their use, adaptation and redistribution, without limitation or with limited restrictions, and that such open licensing is established within the existing intellectual property rights already defined in relevant international conventions and as such, respects the authorship of each work. " (UNESCO, 2012)

Open educational content contributes to the enhancement of the quality of the education process and enables the availability of education to all under the same conditions.

Open access speeds access and flow of knowledge and information to everyone without limitation on a global scale, and enables visibility, evaluation and improvement of research processes and results.

Open educational content and open access contribute to the universal availability of education and its democratization and provide free access to educational materials, their multiple use, modification and sharing.

The claim of an advocate of open education is that it has the power to democratize knowledge and education, ensure a better approach and quality of education, and have the strength to contribute to the overall positive social transformation.

### **OER as an agent to support social justice**

Social inclusion refers to “the process of improving the terms for individuals and groups to take part in society ... It ensures that people have a voice in decisions which affect their lives and that they enjoy equal access to markets, services and political, social and physical spaces”. (Arinto, Hodgkinson-Williams, Trotter, 2017)

In education, social justice can be manifested in different ways, whether it involves inclusion of persons with a lower social status or persons with special needs.

If we observe social justice in the field of education then we talk about the availability of educational programs and teaching materials to all people regardless of their social status. If we consider that according to the UNESCO publication "Open Educational Resources: Policy, Costs and Transformation", price of textbooks in the United States since 1970 has increased by 15 times then it is clear that educational content needs to be made more accessible.

The impact of OER on social inclusion is the focus of many today's scientists. Rajiv Jhangiani and Robin DeRosa point out the following: “When faculty use OER, we aren’t just saving a student money on textbooks: we are directly impacting that student’s ability to enroll in, persist through, and successfully complete a course. In other words, we are directly impacting that student’s ability to attend, succeed in, and graduate from college. When we talk about OER, we bring two things into focus: that access is critically important to conversations about academic success, and that faculty and other instructional staff can play a critical role in the process of making learning accessible.” (Digital Pedagogy Lab, 2017)

Particularly interesting in their statement is the view that teachers have a direct impact on the establishment of social justice by promoting the use of OER. In a higher education environment, teachers can play a key role through the use and creation of an OER.

At lower educational levels, however, support should be provided by institutions as the curriculum is prescribed and the teaching materials are approved at the highest levels.

With regard to the potential for inclusion of persons with special needs, the OER in relation to printed textbooks offers all the features of digital media that can be used as an aid to the education of students with special needs.

### **Research questions**

1. Does open educational resources make education more accessible to lower social status students?

2. Do the open educational contents created by the universal design principle have such features that can facilitate learning to students with special educational needs?

## **Methodology**

In this paper, using case study as qualitative method, research questions will be discussed. The case study will provide an example to how the digital learning materials developed within e-Schools project contributes to social justice in the area of education, making it more accessible to students with a lower social status and special needs students.

At this point, it is possible to provide only a qualitative description of the opportunities that open educational content may have in relation to increasing access to disadvantaged social status students and facilitating the concomitance of content with students with special educational needs since they provide the technical capabilities of materials developed according to the principles of universal design.

Since the implantation of open content for natural sciences has only begun the fieldwork of the research has not been carried out. This part will include quantitative methodology or questionnaire research of the attitudes and opinions of teachers and students and their experience with the pedagogical and technical characteristics of digital educational contents.

The sample of pupils involved in the project includes students with a lower social status and students with special educational needs, so in the second part of the survey, we will pair their status and answers from the questionnaire related to attitudes, opinions and experience in using the material. This would mean that social status and special educational needs would be independent variables, and the student's opinion on increasing content availability and facilitating reading and understanding content would be dependent variables.

## **Case study: e-Schools open digital learning resources**

Within the national project “e-Schools: Establishing a System for Developing Digitally Mature Schools (pilot project)” open digital educational content for students and science teachers (chemistry, biology, physics and mathematics) in the 7th and 8th grades of primary school and 1st and 2nd grades of grammar school will be developed. Open digital educational content is intended for use in education, and with textual and visual content it can contain audio, video and other multimedia and interactive elements. They are designed so that they can be used as a whole for the whole subject and class, but also in smaller independent units, modules. Materials

covers the entire classroom and subject matter and enable the application of contemporary teaching and learning methods.

In this paper two main features of these materials are the most important: they are available publicly and free of charge and are made according to the principles of universal design.

The fact that these materials are publicly available and free of charge provides the possibility of providing support to social justice. This type of support can be particularly manifested in a country where a large number of primary and secondary students are in a poorer social status. So far, the state has undertaken various measures by providing free textbooks. However, these measures were more or less successful but not sustainable.

The impact of open educational content created through the e-School project needs to be deeper explored, but the funding model of publishers for the development of open educational content could provide long-term solutions and support to social justice.

Inclusion of poorer social status student has a wider impact on the increase in the number of people with completed secondary education and higher education. According to the census of population in 2011, secondary education has 52.6% of the population, and the higher education only 16.4%. (Croatian Bureau of Statistics, 2016)

Another important feature of these materials is the fact that they are designed according to the principles of universal design. "Universal Design is the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability or disability." (National Disability Authority, 2012.)

Some of the features of the universal design that contain these materials are: a detailed description of all the elements for the blind reader, support for changing the font size, ability to change the font style for the dyslexics and the inclusive representation of the graphic elements.

This ensures the inclusiveness of students with special needs. One of the most important features is availability from anywhere that is the solution for students with physical disabilities. However, digital content designed according to the principles of universal design has properties that enable it to be used by students with different types of special needs.

## **Conclusion**

Taking into account the characteristics of the materials described in the case study, we can conclude that open educational materials can support the establishment of social justice in both segments, through support for disadvantaged social status students and through support for pupils with special needs.

This paper is just the beginning of research into the impact of open digital materials generated through the e-School project. Since implementation of these materials has recently started field

research on users should be carried out to test research questions by other research methods. The first steps will include online questionnaires for teachers and students which will be conducted in 151 schools involved in the project. The questionnaires will consist of two parts, one part will be related to attitudes and opinions of teachers and students about open content for natural sciences, and the second part of the questionnaire will examine their satisfaction with the pedagogical and technical characteristics of the content.

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