

Final Report

Capacity Building workshop on Innovative Use of ICT for Persons with Disabilities with a focus on Open Educational Resources

Themes:

- **Introduction to UNESCO work in the area of OER**
- **Benefits of OER, OER Basics, Using OERs**
- **Introduction to Open Licensing Basics**
- **OER and Open Licensing in Iran and the Region**
- **OER and Accessibility for Persons with disabilities (UN Frameworks, International Tools available for Accessibility)**
- **OER development for Teacher Training: Focus Accessibility**
- **Using, Sharing, Constructing and Re-using OER**

Facilitators:

- **Ms. Zeynep Varoglu**, Programme Specialist for ICT in Education
- **Naemma El Zarif**: OER Specialist
- **Alireza Darvishy**: Professor and head of ICT Accessibility Lab at Zurich University

Date: 24 and 25 October 2018

Venue: Ra'ad Charity Rehabilitation Complex, No 74, South Piroozan, Phase 2, Shahrak Gharb, Tehran, Iran

Table of contents

Day 1/ opening ceremony.....3

Session I: OER: Benefits of OER, OER Basics, Using OERs.....10

Session II: Introduction to Open Licensing Basics.....13

 Global Education Dilemma and OER.....14

 Accessibility and second level global digital divide.....14

 What do we know about disability.....16

Session III: OER and Accessibility for Persons with disabilities17

 Introduction.....18

 Assistive technologies.....19

 Potential barriers.....20

 Tools to create accessible content.....21

 Final remarks.....21

Session IV: OER development for Teacher Training: Focus Accessibility.....25

Day 2

Session V: Using, Sharing, Constructing and Re-using OER.....26

 What is Special about OER.....27

 What is sustainable OER.....28

 Where to find OER.....30

Session VI: Continuation of Group on creating OERs.....33

Session VII: Presentation of Group Work.....34

Capacity Building workshop on Innovative Use of ICT for Persons with Disabilities with a focus on Open Educational Resources

The two-day workshop on *Innovative Use of ICT for Persons with Disabilities with a focus on Open Educational Resources* was jointly organized by Ra'ad Charity Rehabilitation Complex, UNESCO Tehran cluster Office, ICT Organization, University of Applied Science and Technologies and Iranian National Commission for UNESCO. The participants included senior specialists and representatives from different governmental and non-governmental organizations and institutions working in the field of persons with disabilities.

Facilitators of the workshop included Ms. Zeynep Varoglu, Programme Specialist for ICT in Education z.varoglu, Ms. Naemma El Zarif, OER Specialist and founder of the Fifthcorp, and Alireza Darvishy, Professor and head of ICT Accessibility Lab of Zurich University.

The workshop included lectures, discussions, roundtables, group work and playing games. The mixture of modalities enabled participants to learn new concepts, use them in small groups and then discuss them. All the materials for the workshop were translated into the Persian language and simultaneous translation into Farsi was available for all the discussions and lectures.

Day 1

The agenda of the first day was divided into four parts: opening ceremony, four specialized sessions, and closing ceremony.

The event began with recitation of the holy Quran, followed by the national anthem of the IR of Iran and a musical performance by Dastane Guya group.

Opening Ceremony

Pursuant to the the recitation of holy Quran and the National Anthem, the workshop was formally opened by Mr. Ahmad Mirzakhani, head of the Raad complex's board of trustees, Dr. Maryam Soltanzadeh, officer in-charge of the UNESCO Tehran Cluster Office, Dr. Farhad Etemadi, head of the communication and information department of the Iranian National Commission for UNESCO, Dr. Shahriar Farahmand Rad, head of the west unit of the University

of Applied Science and Technology in Tehran, and Mr. Mahmoudi, representative of the Ministry of Information and Communications Technology .

Mr. Ahmad Mirzakhani, head of the Raad complex's board of trustees, welcomed the participants and talked about the measures undertaken by Raad complex to develop the required structures and environment for social inclusion of the persons with disability. "More than 3 decades have passed from the establishment of Raad complex and during these years, the main objective of Raad has been the achievement of employment-based education. Now, there are different centers of Raad in other cities, including Taleghan, Sanandaj, Mashhad and Kerman, and the important point is that these centers are working independently and according to the local needs and conditions of their environment; for example, Raad center in Kerman is working in the field of genetics and prevention of disabilities, and Raad center in Sanandaj mainly focuses on handicrafts", he said.

Mr. Mirzakhani went on to explain the approach of Raad. He said: "the approach applied by Raad is CBR or community based rehabilitation. CBR is aimed at enhancing the quality of life for the persons with disabilities through equalization of opportunities and facilitating social inclusion of the disabled. Therefore, in Raad complex, the disabled can receive different rehabilitation services including Physiotherapy, occupational therapy, life skills and psychological consultations."

He then briefed the participants on the activities of Raad complex in the last 30 years and then continued to talk about the number of the persons with disabilities in Iran. "According to UN statistics, 2% of any society's population lives with some forms of physical disability, which means that in Iran, with a population of 80 million, about 3 million people live with physical disability, but unfortunately, Welfare Organization of Iran only covers a population of 800,000 people and Raad complex has managed to provide services for more than 100,000 people over the last 3 decades. These statistics indicate that we need proper measures to support persons with disabilities in our country. There are three centers of Raad in Tehran, and each one is working in a specific field."

Mr. Mirzakhani continued by explaining about the main achievements of Raad University of Applied Sciences and Technology and said: "Raad University was established in 1389, and so far

around 913 students have graduated from the university. Currently, 375 students(83 of which are disabled) are studying at Raad at associate and bachelor levels in different university majors including, accounting, English translation, public relations and disability sport, and according to the regulation of the University, disabled students pay no tuition, while other students have to pay.” He added “We have had great achievement in some university majors such as accounting and 100% of the graduates have found relevant careers.”

He concluding by highlighting the great experiences of Raad complex and said: “we welcome any idea that strengthen the exchange of information and cooperation with UNESCO, and we also welcome the idea of sharing our experiences with others, because in the last three decades, Raad has gained great experiences in the field of education for persons with disability.”

Following Mr Mirzakhani’s speech, the floor was given to the Officer in charge of the UNESCO Tehran Cluster Office, Dr. Maryam Soltanzadeh. She initially welcomed the participants and thanked the organizers. The essence of the speaker’s speech is as follows:

“The UN member states commit to work together for a sustainable future for all, including persons with disabilities. Achievement of this aim requires the participation and cooperation of the governments, international organizations, private sector, civil society and experts. Sustainable development goes beyond the responsibility of the governments and must be internalized in the dignity of men and women, their capacities and expertise in enhancing life and predicting future.

According to the World Bank data, about 15% of the world's population lives with some form of disability. In fact, disability is part of the human condition and almost everyone will be temporarily or permanently impaired at some point in life. However, unfortunately, people with disabilities suffer from widespread discrimination and social exclusion in different parts of the world.

Due to inadequate legal frameworks to protect their rights, a lack of financial and skilled human resources to carry out their activities, a lack of opportunities to access education and information, the high cost of assistive technologies, these people have fewer economic opportunities and therefore, they are subject to poverty.

UNESCO promotes the concept of *Knowledge Societies* which are inclusive, pluralistic, equitable, open and participatory for all the citizens, and all the UNESCO programmes promote the concept of inclusiveness.

Today, we are witnessing the amazing impact of information and communication technologies and we have to ensure that persons with disabilities can benefit from using ICTs in their activities. The term “Open Educational Resources” (OER) was first coined in 2002 at UNESCO’s Forum on the Impact of Open Courseware for Higher Education in Developing Countries. OER provides a strategic opportunity to improve the quality of education and to facilitate policy-making, dialogue, knowledge sharing and capacity building.

OER is in agreement with the UNESCO’s concept of free exchange of ideas and knowledge. Free access to material learning allows the users to use the material according to their own needs and modify them according to their objectives. OER helps to improve education, especially in the developing countries that students cannot afford to pay for text books and access to quality learning course or teacher training courses is limited. OER is also important for the developed country, because it can provide broader access to education and reduce the training cost.

OER allows the students, teachers, ministries of education to legally and freely use the best learning programmes and materials. OER allows the teachers to use and adapt the learning materials to their local circumstances.

On December 2015, the “*National Consultative Meeting on the Role of ICTs for Empowerment of Persons with Disabilities*” was jointly organized by UNESCO Tehran Cluster Office and the Iranian National Commission for UNESCO in Tehran. The meeting was a great step in promoting the use of ICTs for Pwds in Iran. Building on the outcomes of this meeting, we held an expert meeting on *preparation of an action plan on “Model Policy for Inclusive ICTs in Education for Persons with Disabilities”*. The aim of the meeting was to discuss the suggestions put forth by specialists to increase access to ICTs for persons with disabilities.

Today’s workshop, in fact, builds on the achievements of the said meetings. During the two-day workshop on “*Innovative Use of ICT for Persons with Disabilities with a focus on Open Educational Resources*”, the participants will be acquainted with of the concept of Open Educational Resources (OER), and how to use, share, construct and re-use OER.”

The next speaker of the opening ceremony was Dr. Farhad Etemadi, head of the Communication and Information department of the Iranian National Commission for UNESCO. He initially explained about the concept of disability and number of the disabled in Iran. “Disability is a global phenomenon, it is part of the human life – almost everyone will be temporarily or permanently impaired at some point in life, due to sickness, accidents and reaching old age. According to the WHO, rates of the disabilities are increasing and about 15% of the world's population lives with some form of disability. Despite the technological advancement, prevalence of disability is increasing globally. It is estimated that currently about 11 million people are living with some forms of disability in Iran, and if we add the number of people injured in the war (500.000) to this population, we see that 14% of the total population are disabled in Iran”, said the speaker.

Dr. Etemadi then talked about the importance of ICTs in social inclusion of the persons with disabilities. He said: “effective use of ICTs can make society more inclusive for people with disabilities, i.e. ICT is the most effective strategy to empower persons with disability and reduce the information gap between the disabled and other people. Through ICTs, persons with disabilities can access the information, which is difficult to access in the real world, i.e. digital empowerment of the persons with disability, with emphasis on removing barriers to access information, can help them overcome their disabilities and participate in society.”

He referred to the UN Convention on the Rights of Persons with Disabilities (2006) and other documents which provide the legal framework for protecting the rights of the persons with disabilities. “The development of international conventions and documents such as 2030 agenda is not sufficient for protecting the rights of the disabled, and we need to develop the required policies and plans at national levels. In Iran, the *Comprehensive Law on Protection of the Rights of Persons with Disabilities* was adopted in 1383, and the *Convention on the Rights of Persons With Disabilities* was adopted in 1387; however, unfortunately, no proper policy or plan has been developed to increase access to ICT and education for persons with disability. In Iran, government has not provided sufficient medical care or social support for the disabled, and the process of developing, implementing, monitoring and evaluation of national policies and programmes does not take into account the needs and challenges of the persons with disability.”

Dr. Etemadi then continued to explain about the UN Convention on the Rights of Persons with Disabilities (2006), and said “some articles of the Convention refer to the empowerment of the

persons with disability through ICTs; for example, Article 9 requires countries “to promote access for persons with disabilities to new information and communications technologies and systems, including the Internet”; or in Article 32, countries are encouraged to facilitate cooperation in research and access to scientific and technical knowledge”; and Article 24 requires countries “to ensure that persons with disabilities are able to access general tertiary education, vocational training, adult education and lifelong learning without discrimination and on an equal basis with others”. He added: “in addition to the Convention (2006), target of the goal 4 of the Sustainable Development Goals is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all by 2030. The important point is that to achieve inclusive and equitable quality learning, we have to use online school and open educational resources.”

He then referred to the statistics of the Global Education Monitoring Report, published in 2016, and said that only 70% of children in developing countries will complete primary education by 2030; however, all countries must have achieved the goal of universal primary education by 2015. “It indicates that many measures and activities must be undertaken by governments and organizations to achieve this goal”, the speaker said.

He concluded by emphasizing the importance of using OER as a means to “achieve inclusive and equitable quality education and promote lifelong learning opportunities for all”.

The floor was then given to Dr. Shahriar Farahmand Rad, head of the west unit of the University of Applied Science and Technology in Tehran. The essence of the speaker's speech is as follows:

"A person with disability is anyone who lives with impairment, including physical, sensory, psychiatric, neurological, cognitive and intellectual or a combination of these impairment, and has limited access to ICTs. The 3rd of December is the International Day of Persons with Disabilities. The Day not only aims to mobilize global support for the persons with disability, it also encourages us to reduce the number of people at risk for disability, eliminate discrimination against the persons with disability and create a world free from disability. It is estimated that 11 million people in Iran are living with some form of disability, including visual, hearing, sensory, psychiatric, cognitive impairment and speech disorders. Due to these impairments, caused by war, earthquake, work accident, and car accidents, persons with disabilities are left behind in social progress.

ICTs, by providing education resources for the persons with disabilities, can help them to overcome their impairment and to be included in social activities. In order for the persons with disabilities to enjoy benefits of using ICTs, at first, they should acquire a deeper understanding of ICTs, including the software and hardware specifically developed for them. When persons with disabilities are empowered through ICTs, they can participate in social activities as successful experts, but to empower these people, at first, we need to train the teachers, librarians and parents of these people to use ICTs.

Persons with disabilities use assistive technologies, including specialized software and hardware that help them access to information and knowledge. Some important assistive tools used by disabled people includes kindle e-book reader, vehicles for the disabled, computer training for persons with foot paralysis, mobile phones equipped with **voice** command applications, refreshable braille display, magnifier devices for persons with visual impairment, Braille Elba keyboard, light keyboard, devices that demonstrate the input text in braille format, Ovation device that converts any written text into audio, device for the blind who are unfamiliar with braille, head-controlled mouse, mouth-controlled mouse, software that converts text to braille. However, access to assistive technologies is not easy and it is suggested that open educational resources be provided for persons with disabilities and their educators.

As a teacher with more than 26 years of experience in open and distance education, I believe that those who prepare open educational resources for the persons with disabilities must take into account two important criteria; 1) learning process must be designed based on self-learning materials, prepared by the expert who are fully aware of such contents, and 2) using animation as a tool to improve the effectiveness of learning and to add entertainment value to training process.”

Mr. Mahmoudi, representative of the Ministry of Information and Communications Technology, was the last speaker of the opening ceremony. In his opening remarks, Mr. Mahmoudi said: "To address disability, we need inter-sectoral actions and measures of all the governing bodies, organizations, institutions and private sectors, i.e. it is every one's duty to improve the living conditions of the disabled people, and in this regard, ICTs, by providing access to knowledge and information, can help us reach educational and social justice."

He then referred to the latest measures undertaken by the Ministry of Information and Communication Technology to improve the quality of life of persons with disability through ICTs and said: "*Consultative working group on Adapting and Developing Electronic Access for Persons with Disabilities*" was established in the Information Technology Organization. Members of the working group have held several meetings, the outcome of which is a document listing the measures required to improve the quality of life of disabled people; of course, implementation of the measures requires financial resources."

He continued to talk about the efforts of the Ministry of ICT to reduce the barriers experienced by the persons with disabilities in accessing information, and said: "a project entitled "developing cyberspace for Children" has been developed by the Ministry of ICT. The project consists of 73 national plans, some of which are directly aimed at enhancing the educational conditions of the children with disabilities".

In his closing remarks, Mr. Mahmoudi referred to the working group of "Developing Persian language in Computer Environment", established by the Ministry of ICT to increase the Persian contents of the cyberspace and explained that the working group places great emphasis on free flow of information as well as content production and distribution.

The opening ceremony was finished with a group photo and after a coffee break, the first session of the workshop began.

Session I: OER: Benefits of OER, OER Basics, Using OERs

The first part of the session I was moderated by Ms. Zeynep Varoglu, Programme Specialist for ICT in Education. At first, she expressed her gratitude to the organizers for their invitation and briefed the participants on the OER basics and explained about the concepts which were going to be further developed during the two-day workshop.

Ms. Varoglu continued to talk about the commitment affirmed by Universal Declaration of Human Rights and said: "all the work of UNESCO is based on UN commitments, and in this regard we have Universal Declaration of Human Rights, written about 70 years ago. According to the document, all the people have basic rights and inalienable freedom to seek, receive and impart information and

ideas through any media and regardless of frontiers, and everyone has the right to education. UNESCO's constitution is based on these commitments.”

She defined the concept of Open Educational Resources as “any educational content, a book, video or any learning resource which is available under an open license. It is free and legal to share, use and re-use.” Then she explained about the licenses for sharing and said that the most common licences are creative commons licenses, which basically defines the conditions that an author can apply for his/her; for example, for any resource, the following issues must be taken into account by users:

- we have to give attribution for any resource (to tell who the author is)
- sharing the resource in the same licensing condition that it is given
- whether we can use the resource for commercial purposes or not
- whether we can make changes to the document or not

She continued to talk about “Public Domain”, the materials that are not protected by intellectual property laws and said: “that public domain is the most open license, i.e. it is a license with no restriction and a document in the public domain is free to do anything with”.

Ms. Valoglu pointed out that licences are categorized into 3 parts, including human-readable, machine-readable and lawyer-readable version and went on to explain UNESCO's measures in the field of OER. “OER was first used at UNESCO's 2002 Forum on the Impact of Open Courseware for Higher Education in Developing Countries. We have had two world congresses in which we had brought together as many people as we could from all over the world to discuss how this concept can be more widely shared. The first congress was held in 2012 in Paris, and the second congress was held in 2017 in Ljubljana. The outcomes of Ljubljana congress were Ljubljana OER Action Plan and Ministerial Statement, produced by fourteen ministers. Ljubljana OER Action Plan points out the areas in which governments can work to make open educational resources more merged into education”, said the speaker.

Then she briefed the participants on the main aspects of Ljubljana OER Action Plan. A summary of her presentation follows:

According to the Action Plan, the possible actions that address the OER challenges are divided into six categories:

1- Building the capacity of users to find, re-use, create and share OER

One of the greatest challenges of OER is that people do not know how to use, develop and share it; therefore, we need to build the capacity of educators, learners and librarians to find, use, re-use, create and share the materials created under an open license.

2- Language and cultural issues

OER should be produced and available in diverse languages. Currently, most of OER are available in English, and therefore, accessible only to English-speaking world or those who know English. To overcome the language barriers, measures should be undertaken by governments, in particular by governments and educational institutions to produce OER in local languages “particularly those that are less used and under- resourced”. OER should be adapted to the cultural context where it is used, and gender-sensitive as well as cultural issues of the local context must be taken into account when developing OER.

3- Ensuring inclusive and equitable access to quality OER

“OER should be accessible to all learners who are both, in formal and non-formal education contexts irrespective of age, physical ability, socio-economic status, as well as those who live in remote areas (including nomadic populations), internally displaced and refugees, in all instances under a framework that ensures gender equality” (Ljubljana OER Action Plan 2017, 4). To ensure the quality of open educational resources, we need to develop some mechanisms which could include “systems for collaborative open reviews, social ratings and comments by users and producers of content”.

4- Developing sustainability models

To make OER sustainable to for the entire educational community, we need to develop innovative models for creation and use of educational resources. This could include value-added models to ensure that learners have access to high quality educational environment and “to help member States to bring OER into mainstream.”

5- Developing Supportive Policy Environment

- It is suggested that OER policies be incorporated into ICT or any other larger policy, rather than being used as a stand-alone policy.
- OER Policy initiatives are developed at governmental and institutional levels.
- OER policy addresses the areas such as “raising awareness on the benefits of OER , providing incentive for following the good educational practices, and fostering the practices that support the use of OER”

Ms. Valoglu concluded by refereeing to the Recommendations, which have been adopted by UNESCO since 1987 and explained that a Recommendation is a tool that provides suggestions to the Member States on any particular area and does not create a legally binding obligation on the countries which have signed it. She said: “Member States have asked UNESCO to develop a Recommendation about Open Educational Resources. The process has started about 4 years ago and currently the draft recommendation has been sent to all the 195 Member States for their review. We hope to have a meeting of experts to finalize the draft in May 2019 and to present it to Member States in November 2019 for their consideration.”

Session II: Introduction to Open Licensing Basics: Using Creative Commons Licenses

The second part of the first session was moderated by Ms. Naeema Zarif, OER Specialist and founder and managing director of TheFifthCorp.com. In her opening remarks, Ms. Zarif, introduced the topics she was going to further developed during the session. Her presentation was divided into three parts, as follows:

- 1) Global Education Dilemma and OER
- 2) Accessibility and second level global digital divide
- 3) What do we know about disability

The main points explained in each part are as follows:

1. Global Education Dilemma and OER

In today’s world, education is changing on a global scale, and we should discuss education, taking into account the context in which it is developed, which is a fast moving world. Education should keep up with our fast moving world; otherwise, it cannot meet learners’ needs. The skills needed to work today change so fast that no education system can keep up with the constant need to reinvent

how we work. The changes of education are driven by the expectations of **students, employers** and **governments**:

- **Employers**

Today, the set of skills needed to enter the market place or perform a job are different from the skills needed previously. Employers are expecting the learners to have some sets of skills to enable them to work in a fast moving world; for example, a journalist needs to know how to use a digital platform.

- **Students**

In Iran and in the region, students prefer to go to private schools despite the fact that many public and free schools are available to them. Because they look into the new sets of skills required for keeping up with the fast moving world.

Governments

All the governments develop some plans to continue to meet the human needs and development goals of their country. They need a skilled workforce to design and implement the processes required for reaching the goals; therefore, they have to either use outside expert or invest in their human capital, students and educators.

To keep up with the changing perspective of education, we have to use new emerging technologies on teaching and learning processes.

New definition of disability

Disability is created when a student is learning in an environment that no longer suits his personality, and if we don't change the learning environment to suit the learners' need, we are creating a kind of disability which not only affects the persons with physical disability, but also affects all the learners.

2. Accessibility and second level of global digital divide

Open Educational Resources

OER is defined as “The open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non-commercial purposes” by UNESCO.

Content development is an important aspect of OER. But, open educational resources are not limited to contents, in fact, OER has many different infrastructures such as the tools used by people, policies and licencing. It should be noted that there are differences between OER and other learning processes, such as MOOC, e-learning and distance learning. A MOOC or massive open online course is an online course aimed at unlimited participation and open access via the web, but it is not an open educational resource.

Global Digital Divide

Digital divide is not any more about the countries that have internet and the countries that don't have internet. Today, even in the most distant rural areas of a country, everyone has a mobile phone. So, having a mobile and connecting to the internet are the criteria for defining digital divide. To redefine the concept of digital divide, we have to take into account household income, which include how much money each household can pay to update the devices like computer, mobile phones and laptop, how much each household can pay for data and etc. In some countries like Lebanon and Turkey, data is very expensive, so we have to find strategies to make it accessible to all, even low-income families.

Socio-Demographic Characteristics Foster or Limit Ict Access & Usage

It is globally proved that women are getting paid less than men and the disabled are paid much less, so when these people have less income, they cannot update their devices and software. We have to remove the barriers caused by gender issues and ethnicity to equalize opportunities and income among the different groups of society.

Information Overload and Ability to Find and Use Reliable Information

Today, most of the countries are being bombard with the fast and open Internet. There will be no problem if what is on the internet is in line with cultural, religious or political issues of the country, but, unfortunately, if the content does not support the said issues, it is blocked. For example, when we search about a specific subject in two different countries, we will get different results. Basically,

the way internet is built is putting any one in an information bubble. By developing open education and open educational resources, we plan to fight against this information bubble, because we have the complete right of putting all the information we have on the internet and making it open as much as possible for all the people. We don't need to block other people to keep our point of view hearable and accessible, and all of us should have an equal opportunity to develop and share our contents.

3. What do we know about disability

About 15% of the world's population live with some form of disability. There are two kinds of disability; the disability you are born with and the disability you acquire at some point in time, which might be caused by war, accident and getting old; for example, up to 40% of people will have some form of disability by the time they are 60 years old.

To address the barriers of OER for the disabled, the following actions need to be taken at governmental level:

1. Adopt A National Disability Strategy And Plan Of Action

Most of the countries have adopted national disability strategies, but the problem is that the processes implemented for developing policies for the disabled do not include persons with disabilities. To make national policies more inclusive and practical, we need to involve people with disabilities in policy-making processes.

2. Enable access to all mainstream systems and services

3. Strengthen and support research on OER for disability

Currently, there are many forms of content development for the persons with hearing and visual impairment; however, there is a need to do more research to include the full spectrum of disability in the process of content development. The undertaken researches should include not only the people who cannot hear or talk, but also the dyslexic people and those who have trouble paying attention.

4. Invest in specific programs and trainings for people with disabilities

5. Ensure inclusive and equitable access to quality OER

Ms Zarif continued the session by explaining the different kinds of open content licensing. The main points discussed are as follows:

Open licensing

There are two kinds of open content licensing for OER: Creative Commons and Public Domain.

Public Domain (PD)

PD covers any old content whose author is dead or no longer has a family to benefit from the content. It also covers the contents that are free and accessible to all. Public Domain consists of the works to which no copyright applies, and author gives away rights to the public to reproduce and distribute creative works.

Creative Commons license

- It allows the author to retain the rights he deserves while grants broad rights to the public to use, reproduce and distribute creative works.
- It is built on copyright law and does not replace, substitute, or provide an alternative to copyright.
- It does not preclude fair use, but reinforces the fair use of content.

Ms. Zarif wrap up the session by showing a short video clip on Creative Commons license.

Session III: OER and Accessibility for Persons with disabilities

The third session of the meeting, entitled “OER and Accessibility for Persons with disabilities”, was moderated by Ms. Varoglu and Dr.. Alireza Darvishy, Professor and head of ICT Accessibility Lab at Zurich University of Applied Sciences.

At first, Dr. Darvishy welcomed the participants and thanked the UTCO for inviting him.

Initially, he briefed the participants on the subjects he was going to further develop during the session. His presentation was divided into 5 parts, which included introduction, assistive technologies Potential barriers, tools to create accessible content and final remarks. The issues discussed in each part will follow in detail.

1- Introduction

It is very important to use the right term when we discuss the issues related to disability. The word *disabled* and *Persons with disability* are used by people; however, it should be reminded that a person with visual impairment is not disabled, because he might be capable of performing many things that others may not be able to do.

Some common behaviors toward the persons with disability are very important. These persons must be treated as equal citizens and independent individual.

About 15% of the world's population lives with a disability, of whom 2-4% experience significant difficulties in functioning. For example, Switzerland has a population of 8 million people, of whom 500.000 people have hearing impairment, and more than 300.000 people have visual impairment.

What is digital accessibility?

It is an accessible digital product or service that can be used by all its intended users, taking into account their differing capabilities. A good sample of accessibility is the tactile dot on key 5 of the keyboard's number pad, which makes the keypad accessible for the persons with visual impairment.

UNESCO requirements for accessible OER

The Guidelines for OER in Higher Education were launched at the 36th General Conference in November 2011. These guidelines address key stakeholder groups, such as governments and higher education providers and include 9 requirements for accessibility, as follows:

1. Include **labelling** to indicate what learning needs the resource addresses
2. Allow the creation of variations and enhancements through **open licences**
3. Support **flexible styling** (e.g., enlarging the font, enhancing the colour contrast and adjusting the layout for students with vision impairments or mobile devices)
4. Support **keyboard control** of functions and navigation (for students who cannot use or do not have access to a mouse or pointing device)

5. Provide **audio or text descriptions** of non-text information presented in videos, graphics or images (for students who have visual constraints or who have limited displays)
6. Provide **text captions** of information presented in audio format (for students who have hearing constraints or lack audio interfaces)
7. Cleanly separate text that can be read in the interface from underlying code or scripting (to enable translation)
8. Use **open formats** wherever possible to make it easier for alternative access systems and devices to display and control the resource; and
9. Adhere to **international standards** of interoperability so that OER can be used on a wide variety of devices and applications.

Web Accessibility

One of the important aspects of open educational resources is web accessibility, which is defined as equal access to internet, web application and websites for all the people, including persons with disabilities. “Web accessibility refers to the inclusive practice of removing barriers that prevent interaction with, or access to websites, by people with disabilities.”

2- Assistive tools

Assistive tools are all the software and hardware that enable persons with disabilities to reduce or eliminate the barriers they face in their daily work, in their education or wherever they need. To put it another way, assistive technologies are used “to increase, maintain or improve functional capabilities of individuals with disabilities.” A video clip on assistive technologies was shown to participants. Some of the assistive technologies that can be used to make open educational resources more accessible for persons with disabilities are as follows:

Assistive technologies for visual impairment: Magnification software, Screen readers

- **Magnification Software:** Zoomtext help low-vision users in using computer so that they can see text in larger size. Some of the features include cursor and pointer enhancement that change the size and color of cursor and pointer. Color contrast is a major problem for low-vision users,

And Zoomtext offers a color enhancement feature which allows the user to change the text against the background color, so that it is more easily read.

- **Screen reader:** It is software that allows the blind and visually impaired users to understand the text that is displayed on a computer screen through translating visual information into audio.
- **Eye-tracking software:** Eye-tracking technology is a technology which is used to see where a person is looking on a computer screen. This technology could be used to control a computer instead of using traditional keyboard and mouse. You can control the computer by using your eyes. Illuminators in the eye-tracker send out infrared light that is reflected by the user's eyes, and camera registers these reflections and through filtering calculations, it can determine where on the screen user is looking at, and then places the computer cursor consistently and accurately.

Assistive technologies for hearing impairments: Automated captioning

- **Automated captioning:** it is the process of converting the audio content of a television broadcast, film, video, or other productions into text and displaying the text on a screen, to make it accessible for persons with hearing impairments.

3- Potential Barriers

The most common potential barriers for the persons with visual impairment are as follows:

- **Insufficient colour contrast**
- **Visual focus**
- **Wide text blocks (horizontal scrolling)**
- **Inaccessible images**
- **Inaccessible navigation**
- **Lack of structure (headings, enumeration, etc.)**
- **Inaccessible forms (labels, error messages, tab order)**
- **Inaccessible tables (headings)**

The most common potential barriers for the persons with hearing impairment are as follows:

- **Complex text**
- **Multimedia content without text or sign language alternative**

4- **Tools for accessible content:**

Some of the tools which can be used to improve access to learning contents include:

- **PDF Accessibility validity engine:** it is an online tool which is used to make PDF files accessible to the blind and the visually impaired.
- **RoboBraille:** It is a web service which converts documents into a range of accessible formats including Braille. Braille services provide translation to and from Braille.
- **Free Automated captioning tools:** *YouTube auto-captioning* and *IBM Watson Speech-to-Text service*
- **ePUB3:** it is a digital (eBook) format with accessibility features

OER system types

There are three types of OER system:

- **Directory:** it provides lists of OER and links to resources available on the Web, (Directory of Open Educational Resources (DOER))
- **Platform:** it refers to digital tools designed to "do" something with the OER. This could include tools to develop new, or adapt existing OER. (Merlot Content Builder)
- **Repository:** a repository is a database or collection of OER, usually ones developed by a particular institution. (MIT OpenCourseWare,)

5- **Final remarks**

- **Apply “universal design”:** universal design is a term used to describe a product or service that is usable to different types of people. We need to apply universal design in the development of guidelines and standards to make our learning contents accessible to different kinds of people.
- **Involve persons with disabilities:** if we design a product, software or technology for persons with disabilities, we should involve persons with disability from the beginning

of the process, because they know what makes the service or product suitable for them.

- **Awareness training for different stakeholders**
- **Use open-source software to create accessible content**
- **Keep different potential barriers in mind while creating content**

When Dr. Darvishy's presentation was finished, some questions were asked by the participants regarding the structure of Braille device and other assistive tools, and Dr. Darvishy provided response to them.

The session continued by a panel, jointly moderated by Ms. Valoglu and Dr. Darvishi. Initially, Ms. Valoglu briefed the session on the UN frameworks, including UN Convention on the Rights of Persons with Disabilities (CRPD) and Universal Declaration of Human Rights. She said: "According to UN convention, Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others. The purpose of the Convention, as stated in the article 3 of the document, is to ensure and promote

(a) Respect for inherent dignity, individual autonomy including the freedom to make one's own choices, and independence of persons;

(b) Non-discrimination;

(c) Full and effective participation and inclusion in society;

(d) Respect for difference and acceptance of persons with disabilities as part of human diversity and humanity;

(e) Equality of opportunity;

(f) Accessibility;

(g) Equality between men and women;

(h) Respect for the evolving capacities of children with disabilities and respect for the right of children with disabilities to preserve their identities."

She then referred to the Article 9 of the Convention and explained that this Article requires Member States to take appropriate measures to promote access for persons with disabilities to new information and communications technologies and systems, including the Internet. The speaker continued by explaining the concept of universal design and said: "as mentioned by Dr.

Darvishy, in his closing remarks, we need to apply a universal design in the development of guidelines and standards. The concept of universal design is also emphasized in the Article 4 of the Convention, which requires State Parties to undertake or promote research and development of universally designed goods, services,...and to promote universal design in the development of standards and guidelines”

Who are the stakeholders that should take appropriate measures to implement the UNESCO action plan at national level

Ms. Valoglu continued to talk about the stakeholders that should take appropriate measures to implement the UNESCO's educational action plan at national level. She said: “according to UNESCO formula, there are 5 regular stakeholders for educational activities, including governments, institutional decision-makers, professors and teaching staff, student bodies, quality assurance bodies and recognition bodies. Of course, this classification does not count anymore, and to implement the UNESCO action plan, we need everyone, we need educators, teachers trainers, librarians, parents, educational policy-makers, student associations, teacher associations, teacher-student unions and other members of civil society, intergovernmental organizations like UNESCO and funding bodies”

She then emphasized the importance of inclusive access to open educational resources and referred to the suggested actions of Ljubljana OER Action Plan to ensure inclusive and equitable access to OER. The suggested actions are:

- 1) “Ensure access to OER in media that most suitably meet both the needs and material circumstances of target learners and the educational objectives of the courses or subjects for which they are being provided.
- 2) Ensure that OER accessed through different media, including mobile devices, are available and accessible in formats which allow for its use, adaptation, combination and sharing ;
- 3) Ensure that OER is available in formal, non-formal, distance and blended learning environments
- 4) Provide OER in accessible formats that support its effective use by all, including persons with disabilities, by using existing international guidelines for accessibility
- 5) Support for public investments in bandwidth infrastructure to provide increased access to mobile learning, particularly for rural and remote communities

- 6) Ensure that the principle of gender equality and inclusiveness is reflected in the processes for accessing, creating and sharing OER throughout the global OER community.”

She continued to talk about the examples of using accessible technologies in the development of OER and said: “unfortunately, we have no example of accessible OER to give you, because it is an area that has not been focused on and because it has not been considered as a priority. The only example I can give you regarding the use of accessible technologies for development of OER that I have been involved with was in Kenya. The process was implemented in a committee which brought together educational experts who dealt with teacher training. We also developed a course on how teachers can use ICT in their work. In addition to representatives from the ministry of education and higher education, representatives from quality assurance body and national body of ensuring inclusive education for persons with disability (a national body in Kenya) were also present in the committee. When the material were being designed, they were taken into consideration. The process was replicated in Rwanda, which involved the national bodies responsible for accessibility”. Then she invited Dr. Darvishy to discuss the issues that should be considered when making an open educational resource accessible.

Dr. Darvishy provided an overview of some of the tools and features which could be used to make a learning resource accessible. The suggested tools are:

PDF tags: to make an accessible PDF document, we can use PDF tags. A tag is a meta-information that could be added to a PDF file by the author who creates it or by a software. Visually, we cannot see a tag on a PDF file, but a screen reader can get the information of a tag and convey it to the blind user.

Optical Character Recognition: Once we scan a page, the information is available in the form of an image, which cannot be read by a screen reader for the blind. Optical character recognition is a technology which recognizes the text from the images of typed, handwritten or printed text and translates it into character codes used in data processing. Therefore, a screen reader can present the data into the blind user.

Web Content Accessibility Guidelines (WCAG) 2.1: WCAG 2.1 covers a wide range of recommendations for making Web contents more accessible to a wider range of people with disabilities, including persons with hearing and visual impairments, blind or deaf persons and

those who live with some form of disabilities, such as limited movement, speech disabilities, cognitive limitations, and etc.

The panel ended with a question and answer session, which was followed by a coffee break.

Session IV: OER development for Teacher Training: Focus Accessibility

The last session of the first day, entitled “OER development for Teacher Training: Focus Accessibility”, was moderated by Ms. Varoglu. She began her presentation by explaining the UNESCO ICT CFT Version 3. She explained that “ICT CFT is a framework that outlines the competencies that teachers need to integrate Information and Communication Technologies (ICTs) into their work.” She added: “ICT can support six educational areas across three growth phases of knowledge acquisition”. The following table indicates the 6 educational areas:

ICT can support 6 major education areas across 3 growth phases of knowledge acquisition:

Educational areas	‘Modules’ - Phases of knowledge acquisition		
	Technology Literacy	Knowledge Deepening	Knowledge Creation
Understanding ICT in Education	Policy Awareness	Policy understanding	Policy Innovation
Curriculum and Assessment	Basic Knowledge	Knowledge Application	Knowledge Society Skills
Pedagogy	Integrate technology	Complex problem solving	Self management
ICT	Basic tools	Complex tools	Pervasive tools
Organization and Administration	Standard classroom	Collaborative groups	Learning Organizations
Teacher Professional Development	Digital Literacy	Manage and guide	Teacher as model learner

Question and answer session

Ms. Varoglu concluded by posing two questions regarding the material presented during the first day of the Workshop. The two questions were as follows:

- 1) Do you have any question regarding what I presented?

- 2) Generally, how do you think about the contents presented in different sessions of the workshop? Are the contents and discussions practical and useful?

The discussion indicated that the presentation was well-received and that the participants were eager to further discuss the presented topics and to build up their knowledge after the workshop.

Some questions were asked by participants and Ms. Varoglu provided response to all of them. Beginning at 9:00 O'clock in the morning, the first day of the workshop ended at 16:30 pm.

Day 2

Session V: Using, Sharing, Constructing and Re-using OER

The second day of the workshop began by Ms. Tiva Kamran, Officer for communication and information at UNESCO Tehran Cluster Office. She welcomed the participants and then, Ms. Valoglu officially began the fifth session of the workshop by giving a brief overview of the activities of the first day of the workshop. She also provided a review of the second's day agenda and objectives.

The floor was then given to Ms. Zarif. She began her presentation by explaining the topics she was going to further develop during the second day of the workshop. Her presentation was divided into 4 parts, including:

- 1- What is special about OER
- 2- What is sustainable OER
- 3- Finding OER
- 4- Sharing OER

The issues discussed in each part will follow in detail.

1- What is special about OER

a) OER is the future of open educational content because

- educators, professors and teaching staff want educational materials that are more engaging, more easily updated and adaptable to individual instructor's needs and more

affordable for students. OER material can be easily updated and teachers can create an innovative teaching process using OER.

- Because OER is easily customizable and delivered directly to students' mobile devices, it's more than a replacement for textbooks. It's an entirely new model for educational content creation and sharing.

b) Why should we use OER?

- **Economic Reasons:**

Some texts book and learning material are expensive and unattainable. The growth of open educational resources can help students and teachers access the free learning material and courses. Open educational resources also let students preview high quality resources prior to applying at an institution which is a good practice and boost recruitment.

- **Good Sharing Practice**

Publishing re-sources openly is reclaiming traditional academic practice of sharing knowledge. Community and collaboration over the process of creating and sharing OER connects educational institutes with wider public. Furthermore, when an institution shares its resources freely and openly, it will reach a wider audience.

- **Institutional Perspectives**

- Creating OER puts content-rich material on the the web that will be indexed by Google and can be used to attract potential students
- OER can make it easier for staff to find what other educators have produced, which encourages sharing within institutions

- **Learner Perspectives**

OER can help informal learners to build up confidence about formal education and support their transition into institutional contexts. Furthermore, using OER allows students to be educators and start experimenting with learning and teaching materials. In other words, as a learner, students can become an educator, mentor, facilitator, or simply a much better informed citizen.

c) What is open educational resources

Open educational resources are teaching, learning, and research materials that reside in the public domain or have been released under an open license that permits their free use and re-purposing by others.

2- What is sustainable OER

a) Is OER the same as e-learning?

- Openly licensed content can be produced in any medium: paper-based text, video, audio or computer-based multimedia, but e-learning is learning using electronic technologies to access educational content. In other words, electronic media is central to e-learning, but it is not necessary for OER; however, it can facilitate the creation and sharing of OER.
- A lot of e-learning courses may harness OER, but this does not mean that OER are necessarily e-learning. If a resource is available in an e-Learning platform, it does not mean that it is under an open license, and we are not allowed to take the material and share it.

b) Is OER the same as MOOC?

In OER, the word “Open” refers to the content of the source or learning material, i.e. the author of OER allows the user to reuse, revise, remix and redistribute the content without paying any fee. A massive open online course (MOOC) is an online course freely available to anyone who wants to participate. The word “Open” in MOOC means that the course is open to any one i.e. anyone can take the course online, but it does not necessarily mean that the content is shared under an open license. If a MOOC has an open license then it is OER.

c) What is the difference between OER and Open access publishing?

OER refers to teaching and learning materials released under such a license, but open access publishing refers to research publications of some kind released under an open license. Clearly, especially in higher education, there is an overlap, as research publications typically form an important part of the overall set of materials that students need.

d) What are the 5 Rs of OER?

Open educational resources should meet the *5 Rs Framework*. 5Rs is a tool developed by David Wiley, to help understand whether a teaching resource is, in fact, an open educational resource.

The five Rs are:

- **Retain:** The right to make, own, and control copies of the content
- **Revise:** The right to adapt, adjust, modify, or alter the content itself
- **Reuse:** The right to use the content in a wide range of ways (e.g., in a class, in a study group, on a website, in a video)
- **Remix:** The right to combine the original or revised content with other open content to create something new
- **Redistribute:** The right to share copies of the original content, your revisions, or your remixes with others

e) **Different types of open educational resources**

The following resources can be developed in the form of open educational resources:

- Complete courses
- Individual course units or modules
- Textbooks Lesson plans
- Syllabi
- Lectures
- Assignments
- Games Quizzes
- Podcasts Videos

f) **What are the characteristic of a quality OER?**

An open educational resource should meet the following features:

- **Findable** – it must be easily found
- **Clearly described** - so that the user know what the resource is about
- **Clearly licensed** (normally through Creative Commons or Public Domain)
- **From a source you trust-** the resource we get an OER from must be reliable
- **Easy to modify**
- **Free-standing** – it does not assume knowledge of other resources- it should be self-sufficient and provide the necessary information for the user)
- **Free of copyright content**

- **Being used by/recommended by people**
- **Imperfect** – The purpose of creating a resource and sharing it online is that others can take the resource and make it better, so it just needs to work for you

3- Where to find OER

The scope and availability of OER is ever expanding, and everyday new resources are being added to the global body of resources. In order to find appropriate OER, the searcher should employ a number of search strategies. The suggested strategies were as follows:

- **Using a specialized OER search engine**, such as *Open Education Consortium* and *CC Search*. Searching through these engines, we can only find the materials produced and shared under an open license.
- **Using OER repository such as MIT and MedEdPORTAL**. Most OER repositories are institutionally based, providing the materials released by that organization.
- **Using directory sites such as OER Africa and OER COMMONS**. A directory is an online list or catalogue of useful websites.

4- Sharing OER

Once a resource has been developed and an open license has been selected, the resource will need to be stored in an online repository in order for others to access it. Authors and creators of open educational resources can use the following options for sharing their resources:

- **Using the institutional repository**: Many organizations, universities and institutions have created their own repositories and have made them available online as OER or OCW
- **Using an open repository such as OER Africa and OER COMMONS**. Open repositories require the person to register and log in before uploading the resource. He also needs to provide information about the resource to allow it to be catalogued and tagged. Finally, the submitted resource is evaluated by a team to ensure its quality, and then it is added to repository's database.
- **Build the OER online**: A few sites encourage development of OER within their online environments.
- **Using Social Networks, such as Flickr and Vimeo**: Social networks have created new possibilities for publishing OER online.

The session continued with a short question and answer session. Participants asked some question about the use, creation and sharing of OER and Ms. Zarif provided response to them.

After a short coffee break, Ms. Zarif continued the session by explaining different types of Creative Commons Licenses. At first, she introduced the icons of Creative Commons and explained that “Creative Commons licenses are the standard for sharing free content online for individual creators, governments, foundations, and academics.”

The following icons can be used to indicate the rights that author grants to the public in using his/her resource.



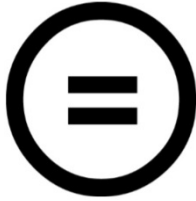
Attribution (by): Others can copy, distribute, display and perform the work and make derivative works based on it only if they give the author or licensor the credits in the manner specified.



Non-commercial (nc): Others can copy, distribute, display, and perform the work and make derivative works based on it only for non-commercial purposes.

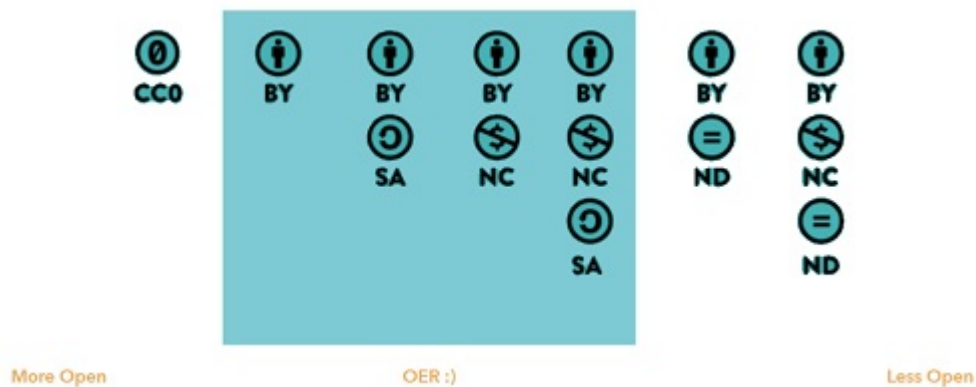


ShareAlike (sa): Others can copy, distribute and modify the work, as long as they distribute any modified work under a license identical to the license that governs the original work.



NoDerivatives (nd): Others can copy, distribute, display and perform only original copies of the work, not derivate works based on it.

After introducing the icons, Ms. Zarif explained about the six licenses that users can choose to publish a work under an Creative Commons license. She indicated a picture in which the six licenses were listed from the most accommodative license type to the most restrictive licence type. The picture is as follows:



Session VI: Continuation of Group on creating OERs

Exercise 1

Ms. Zarif began the session by an online Game, consisted of 10 questions about the Creative Commons Licenses. The purpose of the game was to measure the participants' understanding of open licenses. Most of the participants participated in the game through their mobile phones, and

finally the one who had answered 7 questions correctly was the winner. The winner was awarded a chocolate box by Ms. Zarif.

Exercise 2

Then, the participants were divided into seven groups of six people and they were asked to choose a name and a leader for their group. Ms. Zarif asked the groups to write the names of the members of each group on a piece of paper and to explain the reasons why OER was important for them. Groups discussed the question and then the leaders explained the reasons why OER was important for their group.

Exercise 3

To test the knowledge of participants on OER, Ms. Zarif asked them to take a piece of paper and write some words or draw something on it which could be an OER. After a group discussion, the leader of each group put the papers on the white board. Ms. Zarif classified the written words and pictures into six groups, including written contents, video, photo, audio, games and OER values. The exercise revealed that the participants did have sufficient knowledge about the content forms which can be produced and shared as OER and they were aware of the OER values.

Then, Ms. Zarif asked the groups to prepare an institutional open education plan. Each group was assumed to be an institution. The education plan consisted of the following parts:

- **Vision Statement:** it is the major vision you are aiming for. Vision statements are thematic and extremely long-term.
- **Mission Statement:** what will you do with open education in the next five to seven years?
- **Goals:** goals should be reviewed and revised annually. It lists your achievable and measurable commitments.
- **Actions:** each goal should have between 3-5 action items that are specific steps you can take toward meeting the goal.
- **Assessment:** it describe how you can evaluate your performance to see whether you've met each of your goals or not.

The groups were given 15 minutes to prepare their open education plan.

Session VII: Presentation of Group Work

After a coffee break, the seventh session of the workshop began with the groups' presentations on open education plan. One person of each group was chosen to present the plan of his/her group. The discussions indicated that the participants were aware of the importance of open education and they knew how open educational resources could be used to facilitate the achievement of a long-term educational vision.

The meeting continued with a short question and answer session. Then, Ms. Zarif introduced some of the useful websites which help us find open educational resources. These websites are:

- 1- **General Research:** Google
- 2- **Photo/Image Search:** Wikimedia Commons- Google Images- Open Clip Art Library- The Noun Project- Encyclopedia of Life- Public Library of Science (PLOS)- Europeana
- 3- **Video Search:** YouTube- Internet Archive- Ted – Ideas Worth Spreading
- 4- **Music/Audio Search:** SoundCloud- Free Music Archive- Internet Archive- ccMixer
- 5- **General Education Search:** OER Commons: Recorded Lectures & Video Tutorials Search: Khan Academy- UC Berkeley- Open Yale Courses
- 6- **Open Textbook Search:** Siyavula- CK-12- Open Stax College- College Open Textbooks- BCcampus OpenEd- Open Textbook Library
- 7- **Simulation and Animation Search:** PhET
- 8- **Modular Course Components:** Wikiversity- Connexions
- 9- **Complete Courses:** UK Open University Learning Space- OpenCourseWare Consortium Search- MIT OpenCourseWare

Exercise 4

The session continued with an exercise about creating OER. The groups were asked to create an open educational resource and publish it online under an open license. The aim of the exercise was to raise awareness on a particular area by creating a video, brochure, recording a sound, creating a word document or downloading an OER file and making it work for a particular

context. The groups were given 30 minutes to accomplish the exercise. All the groups actively and eagerly participated in the process of creating and publishing OER.

A general conclusion of all the discussions, by Ms. Varoglu, wrapped up the workshop.

Beginning at 9:00 O'clock in the morning, the second day of the workshop ended at 16:30 pm.