ODEdu
OPEN DATA EDUCATION

Innovative Open Data Education and Training Based on PBL and Learning Analytics

Innovative Open Data Education and Training Based on PBL and Learning Analytics

A major objective of the project is to organise trial pilots for maximum knowledge exchange and co-creation.

All pilots are based on the course models developed by ODEdu and are structured according to the novel Problem-Based Learning (PBL) methods identified and designed by the project that underpin the in-depth knowledge and skills acquisition (e.g. problem solving, critical thinking, entrepreneurship, creativity).

The objectives of the trial pilots are to:

▪ Apply the innovative teaching practices and methods in the university-level education.

▪ Apply the training practices and methods in private and public sector organisations.

▪ Increase entrepreneurship skills and innovative engagement of students and private and public employees.

▪ Perform events and promote real-life practice with Open Data to demonstrate their benefits and added values.

▪ Gather learning analytics results to determine trials' process and stakeholders' progress.

So far, the following trial pilots have been implemented:

University of Macedonia (UoM)

UOM performed five educational trials targeting graduate and post-graduate University students and one training trial targeting public employees. In specific:

Undergraduate courses on "Open and Linked Data"

A course on "Open and Linked Data" was included in two undergraduate elective modules of the Applied Informatics department of the University of Macedonia in Thessaloniki, Greece. The first module was on "Advanced Information Systems" and was attended by 12 students; the second module was on "eGovernment" and was attended by 16 students. Both courses aimed to introduce students to the Open and Linked Data topics and allow them to experiment with existing datasets towards developing skills they can use in their future professional careers.

Masters courses on "Open Data" and on "Open and Linked Data"

A course on "Open and Linked Data" was included in the "Innovative Systems for e-Business" elective module for the Masters of Applied Informatics of the

University of Macedonia in Thessaloniki, Greece, and was attended by 5 students.

Moreover, a course on "Open Data" was included in the "eGovernment" elective module for the Masters of IT and Law of the same University and was attended by 9 students. The courses aimed to teach students about the culture and academic practice of Open Data, and allow them to experiment with obtaining, presenting, visualizing and linking Open Data. This would allow them to produce added value through Open Data in their existing or future professions.

MOOC course on "Open and Linked Data"

A course on "Open and Linked Data" was partly recorded as MOOC in cooperation with the Delft University of Technology in Netherlands and will be included as educational material in the upcoming relevant courses of the Delft University. This MOOC will reach large number of stakeholders from all different sectors (academia, business, public sector) and fields (computer science, statistics, marketing, government, etc.) and teach them the value of Open Data as well as fundamentals on how to obtain, present and visualize Open Data.

Training course on "Open Data"

A course on "Open Data" was included in public employees' training by the National Centre for Public Administration and Local Government (EKDDA) in Athens, Greece, attended by 16 employees. The public employees were taught the basic characteristics of Open Data, the culture of Open Data

and how they can generate value for the public sector.

Open Data Institute (ODI)

The ODI carried out two courses, "Fundamentals of Data Science" and "Better Data, Better Decisions".

Whereas both the two courses addressed the topics of data culture, management, and processing, they addressed them from different points of view and had distinct target groups.

Fundamentals of Data Science

This course was run in conjunction with the Southampton Data Science Academy between 6 November and 15 December 2017. It was an online six week course, targeted at public and private sector employees. A total of 37 students enrolled, of whom 29 completed and passed the course. The course was slanted towards the concepts proper to data science, rather than open data.

Better Data, Better Decisions

This course addresses a new target audience of ODI members, and as such the course has been organised and facilitated solely by the internal ODI Learning Team. Broken down into six academic weeks, the course ran from 10 September to 26 October 2018. Whereas it shares much of its content with the prior course, "Better Data, Better Decisions" aims to highlight the value of using data (specifically open data) to aid the decision making process at an organisational level. 21 participants have enrolled in the course.

Aalborg University (AAU)

AAU designed and ran two blended learning activities, "Open Data Crash Course" and "Open Data for IT management". The target of the activities was students from the Faculty of Humanities and the Faculty of Social Sciences at AAU respectively. Apart from implementing the two courses, AAU also produced an instructional video explaining The Open Data Problem Based Pathway model.

The "Open Data Crash Course" activity

The activity was a part of a bigger 5-ECTS module "ICT for Learning, Content and Knowledge Management". Its aim was to give the students an overview of the different aspects of working with open data. The participants were asked to use the knowledge gained from this activity while working on the different assignments presented to them later in the module. Eight students enrolled at Information Studies Master's program took part in the activity. "Open Data Crash Course" ran over the course of 8 days, between February 19th and March 1st, 2018. The topics covered fell into the area of the open data lifecycle, culture, and academic practice.

The "Open Data for IT management" activity

The activity was a short, blended learning activity with students from the MSc programme in IT management at the Faculty of Social Sciences, Aalborg University. The activity was part of a 5-ECTS module titled 'IT based improvement of organisational processes' of spring 2018. The aim of the learning activity was to introduce students to the area of Open Data and discuss the role of Open Data in the context of business innovation. 30 students participated. The activity was delivered through the ODEdu platform and ended with a four hours face-to-face lecture.

Across Limits

AcrossLimits organised a half-day event titled ""Open Data and its uses"" on 18 April 2018 in Qwara, Malta. The event aimed at raising awareness of Open Data in Malta. College and University

students were invited to the event where there were several presentations including those by MITA - the Maltese governmental agency for IT which explained the different types of data that the government is aiming to make available. After the presentations, participants were also invited to brainstorm together in a workshop format about what might be an interesting app in Malta to be built with the open data that exists locally.

Association of Information Technology Companies of Northern Greece (SEPVE)

SEPVE implemented two online courses titled "Introduction to Open Data" and "Advanced Issues on Open Data". The target group of the courses was employees of SEPVE's member-companies with a keen interest in open data.

The "Introduction to Open Data" Course

The scope of the course was to familiarize trainees with the basic concepts of open data and basic techniques of data organisation and validation. After the completion of the course the trainees would be able to retrieve, validate and organize open data. The course lasted 3-weeks and took place twice: from April 23rd until May 13th 2018 and from October 22nd until November 11th 2018. 23 trainees in total participated in the course. The main topics covered were: obtaining and cleaning open data.

The "Advanced Issue on Open Data" Course

The scope of the course was to provide trainees with the theoretical and practical knowledge covering the entire life cycle of open data, from data gathering to the creation of useful information. After the completion of the course the trainees would be able to generate valuable information from open data. The course lasted 8 weeks and took place from May 14th until July 8th 2018. 14 trainees participated in the course. The topics covered the entire

lifecycle of open data: obtaining, cleaning, analyzing and presenting data.

ProXML

ProXML has been giving a half-day 'Open Data' introduction seminar to the civil servants of the city of Louvain. The aim of the workshop was to investigate open data opportunities and to make an inventory of concrete needs in addressing lacking knowledge, skills and tooling. The topics addressed were: the what, why and how of Open Data.

Linked Organisation of Local Authority ICT Societies (LOLA)

LOLA is a network organisation of local ICT organisations. Its Belgian partner, V-ICT-OR, designed and setup two courses based on the PBL learning module in Dutch, specifically tailored towards the Flemish public sector, and using concrete examples from Flanders.

Course on "Using open data in Flanders"

This course provides a simple but comprehensive introduction to open data: the rationale behind it, formats, syntax, applications and even linked open data. All of this is based on problem-solving exercises with typical Flemish datasets.

Course on "Publishing open data in Flanders"

During this course, participants learn how to publish open data, how to set up an open data portal, and how to adhere to dominating best practices and standards in Flanders. Furthermore, participants learn how to connect their open data portal to the Flemish, Belgian and European open data portal. These courses run from September 2018 until December 2018.

Future Actions

The implementation of the trials will end in the next couple of months and the Consortium will then report the conclusions and evaluate the results.

In particular, each trial will be described in terms of the methodology followed, the learning methods and materials used, the duration of the trial, practical applications, engagement learning methods, etc.

The evaluation of the trials will examine the effectiveness of the innovative curriculum on Open data along with PBL methods and learning analytics towards stakeholders' in-depth acquisition of knowledge and skills on Open Data. The evaluation will result in a number of recommendations for the content and systems designers, implementers and curriculum designers.

ODEDU WEBSITE

For further information, you can visit the ODEdu website on: http://odedu-project.eu

CONSORTIUM

University of Macedonia, Greece
Open Data Institute , Great Britain
Aalborg University, Denmark
AcrossLimits, Malta
Association of Information Technology Companies of Northern Greece, Greece
ProXML, Belgium
Linked Organisation of Local Authority ICT Societies, Belgium

MORE INFORMATION

Prof. KonstantinosTarabanis

University of Macedonia (UOM)

email: kat@uom.gr

Ass. Prof. EfthimiosTambouris

University of Macedonia (UOM)

email: tambouris@uom.gr