Climademy

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Deliverable 2.3 "E-LEARNING MODULES"

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v1.0	31/05/2024	reviewed - University of Crete
Reviewed	YES	

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Contents

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Executive Summary

The purpose of CLIMADEMY E-learning modules (Task 2.3 in WP2) is to provide high-quality educational material for teachers on climate change drivers, impacts, mitigation and adaptation as part of CLIMADEMY teacher training activities. E-learning modules serve as backbone for all CLIMADEMY education, as they present the basic information on climate change, accessible for all. The e-learning modules consist of a short video and a quiz. E-learning modules are used in CLIMADEMY trainings as learning material. They are published publicly in YouTube, as well as in the CLAUDI platform. Videos have been subtitled to all CLIMADEMY languages.

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Abbreviations and acronyms

Abbreviation / Acronym	Description
WP	Work Package

Partner short name used in this document	Full Partner Name
EA	Ellinogermaniki Agogi Scholi Panagea Savva A
FG	Fondazione Golinelli
RDPSEC	Regional Directorate of Primary and Secondary Education of Crete
UBREMEN	University of Bremen
UH	Helsingin Yliopisto (University of Helsinki)
UNIBO	University of Bologna
UOC	University of Crete

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1. Introduction

CLIMADEMY aims to developing educational material co-designed with teachers for perceiving climate change, getting aware of the impacts and mitigation and adaptation strategies, tailored for secondary education student teachers and serving teachers (Objective 1). The educational material is developed in WP2 according to CLIMADEMY pedagogical model (WP3) and shared via CLAUDI platform (WP4). Educational material is utilized in teacher trainings (WP5).

Task 2.3 is to produce e-learning modules for teachers on climate change drivers, impacts, mitigation and adaptation.

2. Project Description

This deliverable reports work done within WP2 of the CLIMADEMY project.

The Climademy project is divided into 6 work packages, listed below.

• WP1: Project management, coordination and governance

• WP2: Educational materials on climate change

• WP3: Development of educational model for teacher training

• WP4: Establishment of a common virtual Climate Auditorium (CLAUDI) and National Hubs

• WP5: Implementation of the Training Activities

• WP6: Impact assessment, dissemination and sustainability

In WP1 the project coordination and management bodies will be established, in order to ensure the general project coordination and monitoring of progress. In WP2 educational material will be collected and further developed to understand the main drivers of climate change. WP3 will focus on the development of an educational model suitable for teacher training. WP4 is concerned with the establishment of the four national hubs and the development of the virtual Climate Auditorium (CLAUDI) platform. The aim of WP5 is to organize the large-scale implementation of the Training Activities leading to an enhanced notion on Climate Change Education of participating teachers and eventually to their professional development. Finally, WP6 is concerned with the dissemination and sustainability of the project deliverables.

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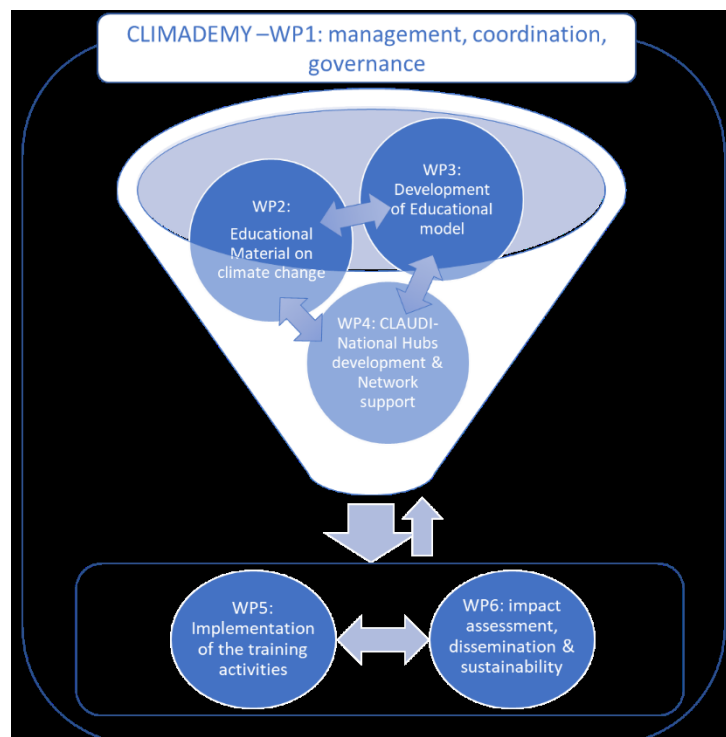
3. Description of the e-learning modules

The goal of the Task 2.3 was to produce three e-learning modules, up to 10 minutes each, for teachers on climate change drivers, impacts, mitigation and adaptation, and publish and distribute them through CLAUDI (https://claudi.chemistry.uoc.gr/, under "Material and courses in English"). Three sub-sections were designed on i) Drivers ii) Impacts, iii) Mitigation/Adaptation of climate change to lead the trainees from the causes of climate change to the various impacts and consequences of climate change and the actions taken to alleviate and adapt to it. Purpose of the e-learning modules was to give a common background for all trainees on the most important aspects of climate change, in a coherent way. Also, we wanted to highlight CLIMADEMY collaborators' expertise and focus areas and invite our key academics to provide content to the e-learning modules.

Three e-learning modules on climate change drivers, impact, mitigation and adaptation were produced and added to the CLAUDI platform (Task 2.3; https://claudi.chemistry.uoc.gr/course/view.php?id=188). Modules consist of an approximately 8-minute video and a quiz with 5-6 multiple choice questions. All three videos have been added to CLIMADEMY YouTube channel (https://www.youtube.com/@Climademy) with subtitles in English, Italian, German, Greek and Finnish languages. At the moment, the quizzes are only available in English, but we plan to translate them into all five local languages. We wanted to bring in the multilingual approach where introductory lectures would be in English and all local perspectives in local languages. However, not all speakers followed these instructions. All videos represent international perspectives from CLIMADEMY countries and abroad.

Videos were scripted by Laura Riuttanen and Nesrine Bouhlal from UH, as well as all speakers. Videos were edited by Ivo Neefjes from UH. Filming was done by Ivo Neefjes, Emmanuel Zouraris from UoC and Emma D'Orto from UniBo. Animations to video 1 were done by Dimitris Sgouros (Dot Creative Studio). Quizzes were designed by Nesrine Bouhlal and Laura Riuttanen from UH. All partners as well as some pilot teachers were asked to comment on the videos as well as e-learning modules.

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First module explains basics of climate change (Laura Riuttanen, UH) with animations produced for this purpose, measurement of climate change in Hyytiälä SMEAR II station (Markku Kulmala, UH) as well as remote sensing and modelling of climate change (Mihailis Vrekoussis, UBremen). Link to video: https://www.youtube.com/watch?v=cWbHwucAbbs

Examples of quiz questions in e-learning module 1:
- What is the role of the greenhouse gases in the energy balance of the Earth?
- Carbon dioxide, methane and nitrous oxide have a small contribution to the energy balance, because their concentrations are very small in the atmosphere.
- What can on site measurements and datasets be used for?
- What are climate models?
- The net effect of aerosols and clouds on the climate is cooling.

Figure 1: Screenshot of Climademy educational video 1: Drivers of climate change: Markku Kulmala (UH) explaining climate change measurements.
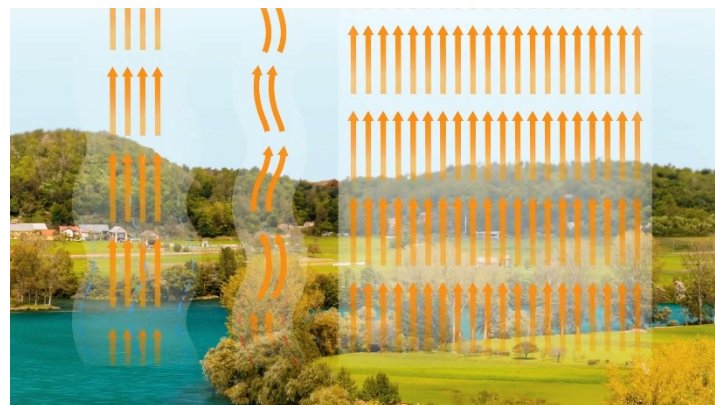

Figure 2: Screenshot of Climademy educational video 1: Animation on global energy balance and the greenhouse effect.

Second module explains climate change impacts (Guy Brasseur), with examples from Greece (Nikos Kalivitis, UoC) and Italy (Paolo Ruggieri, UniBo). Link to video: https://www.youtube.com/watch?v=yjMSqc_th8M

Examples of quiz questions in e-learning module 2:

- What is the main cause of ocean acidification?

- Why is the sea level rising globally?

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- Global warming will make all regional climates drier.

- How will the inland areas of Crete be affected by climate change?

- What impacts affect especially coastal regions in Italy according to the video?

Figure 3: Screenshot of Climademy educational video 2: Impacts of climate change: Nikos Kalivitis (UoC) explaining climate change effects on Crete.

Third module introduces to climate change mitigation and adaptation (Jos Lelieveld) with examples from Greece (Nikos Mihalopoulos, UoC) and Italy (Silvana Di Sabatino, UniBo). Link to video: https://www.youtube.com/watch?v=E-zHZ8fJx3c

Examples of quiz questions in e-learning module 3:

- People will be affected by climate change equally because its impacts are similar on a global scale.

- Which of the following is an example of adaptation to climate change?

- Current mitigation measures are not enough to limit global warming to 1.5°C, a target set by the Paris Agreement.

- What examples of adaptation and mitigation were mentioned for the city of Bologna? (choose 2)

Figure 4: Screenshot of Climademy educational video 3: Climate change mitigation and adaptation: Silvana Di Sabatino (UniBo) telling about city of Bologna carbon neutrality plans.

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A fourth extra module has also been planned on the learning of climate change, with introduction to Climademy pedagogical model (Olivia Levrini, UniBo) and Climademy national hubs (hub leads) as well as CLAUDI platform (Emmanuel Zouraris, UoC). As this was not in the original plan, it is not to be reported here.

4. Conclusions

Task 2.3 has been successfully completed, as all of the three planned e-learning modules have been produced in time and added publicly available in YouTube as well as in the CLAUDI platform.