Educator's Handbook

Guidelines on how to deploy the materials

Content

COUNT ME IN – Course for educators

Welcome to our course "Digital Tools for Smart Development" a tool to learn more about application of new technologies in modern urban societies. The course developed within the Count me in project - an international partnership of eight European institutions developed within Erasmus+ programme co-financed by European Commission. Among the main objectives of the course there is increasing of digital literacy and civil participation of youth who might have limited access to knowledge on technology or lower chances to make decisions and we have designed this course for adult educators, employers, public officers, social workers and everyone who would like to know more about modern ways of solving problems and to be able to support young people better on their way to responsible, innovative and independent actions in their communities.

The content of this course is a combination of theoretical knowledge and examples of real life usage of different smart approaches and smart technologies that can be found in European cities in such target areas as: water management, waste management, energy management, e-governance, data mining, urban mobility, access for all and citizen services. Developing methodology of the course we put a lot of effort implementing theoretical approach, that is, we try to present solutions that can be used effectively in other areas. We also foster users independent learning and encourage them to search for their own ideas or examples from their surroundings on every stage of the course.

There are eight modules of the course corresponding to eight main target areas of modern city live. In each module you will find a module in a nutshell section to give you an idea about the topic; there are also learning outcomes listed and a short evaluation section in the end. All that in order to manage your self-study easily and to give you a sense of achievement.

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Going through our course you will learn how to live smarter in the city dealing with everyday challenges faster, cheaper, more environmental friendly or just more effectively. We hope that, even if you are not a technological freak, you will get involved in our course finding it attractive, interesting to read, and what is the most important for us, really inspiring!

TOPICS ADDRESSED

- New innovative curricula/educational materials/development of training courses
- ICT - new technologies - digital competences
- Inclusion & Equity

AREAS TARGETED:

- Citizen Services
- Urban Mobility
- Water Management
- Access for all
- e-Governance
- Energy Management
- Waste Management
- Data Mining

General Notes

This document is an integral part of the "Digital Tools for SMART Development" course within the European Erasmus+ project Count me in. It is intended to be used by educators, trainers, teachers and other types of professionals in the adult educational field who are interested in implementing totally or partially the content of the course.

We recommend reading the course materials and then read the contents below, which are meant to support the learning experience of the end users, as well as help educators better understand and how to organize, plan and implement adequate training sessions for them.

In this handbook, you will get acquainted with the main concepts of the course

Target group, materials, methodology and approach

Target groups:

The "Digital Tools for SMART Development" targets directly educators that will work with adult learners, and more specifcally those that work on a daily basis with adults with special needs, i.e. people with disabilities, disadvantaged youth, low-qualified adults, etc. The materials developed for the educators are the main ground to develop the knowledge, skills and competences they will need to implement the course or some of the course content with their learners. Some specifications that the educators need to take into account before starting to plan his/her sessions with adults are:

- If the course is to be implemented in English, they should have a minimum A1 level of English (beginners).
- Materials are developed especially for learners, adapted in an accessible and easy to read format here: https://countmein.eu/learners/
- Adults targeted can be:
    o Young people (below the age of 30) with disability (sensory, physical, intellectual)
    o Low-skilled or low qualified adults
    o People with learning difficulties and special needs

Materials:

When planning on how to implement the course, entirely or partially, you should first consider if you are going to carry it our online, face-to-face or in a blended manners. Here (https://countmein.eu/wp-content/uploads/2020/11/plantilla_approaches-to-education_v2.pdf) you can find some information you should take into account to make this decision.

Make sure you have access to the online materials before the class in order to be ready with them. If you are going to opt for an online session, also make sure all learners count with a digital device with internet connection (laptop, tablet, computer...) If you are going to opt for a face-to-face session, be ready with printed copies of the materials (enterily or partially) and with some visual supports (such as a pwp presentation).

Materials are adapted to learners' disability (if he/she has severe condition which stands in a way of the content, they should be adapted further). These have been adjusted according to the needs of the target group (people with visual impairments should be handed an option of assistant or screen reader, hearing impaired should be provided with an easy to read version.

Methods used:

Before you start the actual activity with your learners, you should prepare and plan every activity:

- Set up curriculum, timeframe and a set of rules to hand out to them.
- Ensure accessibility of facilities where the sessions will take place.
- Evaluate the abilities of group and possible challenges that need to be overcome during the activities (questionnaires etc.)
- Select materials appropriate for physical and intellectual abilities of the group.
- Prepare the necessary technical devices or make sure members of the group bring their own.
- Set a realistic timeframe

- Choose the best form of evaluation based on your pre-research (online questionnaire, paper form etc.)

Then, introduce the group to the corriculum and timeframe (explain what are the main objectives of the sessions, what will be done and how to do it)

Provide the target group with clear instructions and indications (how to complete the tasks, what is expected of the group, evaluation process).

The key to choosing the right methodology is knowing your learners, though every type of disability calls for a specific methods. Also, make sure you follow some simple rules when implementing the materials with disabilities:

Respect the Human Rights of people with disabilities (UN Convention on the Rights of Persons with Disabilities).

Create a professional and supportive learning environment for your pilot group (accessibility, respect for difference and learning materials).

Active inclusion – include everybody in the discussion and evaluation processes.

Skills and competences

These course has been developed with DIGITAL & SMART SOLUTIONS to community problems as core elements of the theory but with DIGITAL and SOFT skills as the main competences and skills educators will acquire upon its completion. These are the main frameworks and structures taken into account:

The Digital Competence Framework 2.0

This European Framework of reference DigComp 2.0 identifies the key components of digital competence in 5 areas. The "Digital Tools for SMART Development" course has been develop to cover all of them over the 8 modules. These are as follows:

1) **Information and data literacy:** To articulate information needs, to locate and retrieve digital data, information and content. To judge the relevance of the source and its content. To store, manage, and organise digital data, information and content.

2) **Communication and collaboration:** To interact, communicate and collaborate through digital technologies while being aware of cultural and generational diversity. To participate in society through public and private digital services and participatory citizenship. To manage one's digital identity and reputation.

3) **Digital content creation:** To create and edit digital content To improve and integrate information and content into an existing body of knowledge while understanding how copyright and licences are to be applied. To know how to give understandable instructions for a computer system.

4) **Safety:** To protect devices, content, personal data and privacy in digital environments. To protect physical and psychological health, and to be aware of digital technologies for social well-being and social inclusion. To be aware of the environmental impact of digital technologies and their use.

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5) **Problem solving:** To identify needs and problems, and to resolve conceptual problems and problem situations in digital environments. To use digital tools to innovate processes and products. To keep up-to-date with the digital evolution.

Soft Skills

Partners have designed the course in a way it enhances adults soft skills. These, can be understood as those skills that are non-academic but that are crucial to succeed in a longterm sense in personal, social and professional spheres of one's life. This course, will aim at improving educators soft skills, mainly:

1) **Communication & Teamwork**
2) **Problem Solving**
3) **Social and Emotional Intelligence**
4) **Cultural Competence**
5) **Organisational skills**
6) **Creative skills**

Training curriculum structure

Course structure

There will be 8 modules based on the 8 target areas defined by the project

- Module 1: Citizen Services
- Module 2: Urban Mobility
- Module 3: Water Management
- Module 4: Access for all
- Module 5: e-Governance
- Module 6: Energy Management
- Module 7: Waste Management
- Module 8: Data Mining

Module structure

- **Why studying this?** – Brief description of the module in an attractive and appealing visual presentation. It describes some of the benefits and advantages of

- **Introduction to the module** – Introduction to the module concepts and key aspects that will be covered. Overview of general understanding of the target area.

- **2 or 3 subtopics** – Main aspects and relevant aspects to be dealt with within each target area. These subtopics contain examples and good cases that can illustrtate the theory.

- **Check your understanding** –Easy and straight forwards interactive check your understanding questions that will consolidate knowledge gained.

Methodology and indications by target area

<table>
<tr><td></td><td># Citizen Services</td></tr>
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General Description and Logic:

This module gives an insight into citizen services and how technology and citizen-focused mindset can increase their quality and efficiency as well as improve access to them. This module will help adult educators to make students reflect on the importance of citizen services, how to use them responsibly and how to increase civic engagement.

In this module, the educator will find some **good practices cases** where smart approaches and technology have helped to improve the lives of the people. These examples can be useful to introduce the topic to the learners in a practical way.

Subtopics:

This module consists of two sections:

1. Citizen Services: Definition

2. Citizen Services and New Technologies

- Education
- Welfare
- Culture, tourism, leisure
- Civil participation

Learning outcomes:

By the end of this module, educators will have learned how to explain the following material:

- What the **concept** of citizen services refers to;
- The **different types** and **sectors** of citizen services;
- How the use of **new technologies** contributes to **better citizen services;**
- Examples and **good case**s of **technological** and **smart approaches** to citizen services.

Skills & competences

- Instructional design
- Methodology
- Reflective practices

- Collaborative learning
- Research

Tips for implementation:

It can be implemented face-to-face or online.

Face-to-face:
In this case, the educator can prepare a presentation (using PowerPoint, Canva or Genial.ly) to show the main point to the learners. To display the presentation, a projector can be used, if available.

Online:
The educator can show the presentation in a videoconference session or ask the learners to see it on their own.

The educator can raise questions, such as:
- What is a citizen service? Can you name some citizen services?
- How can technology improve citizen services and make them more accessible?

Divide learners in small groups (3/4 people) to discuss these issues, and they come together to share their opinions with the rest of the class.

Assessment:
To evaluate what students have learned, the educator can prepare an interactive quiz using Kahoot, Mentimeter or Google Forms.

Additional ideas:
The educator can present to the students the best practices collected in the webpage of the project, select the most interesting one and present it to the rest of the class. They can also look for similar practices in their countries or come up with a solution to a problem regarding citizen services in their community.

This activity can also be implemented in small groups, which will be helpful to improve learner's teamwork competences.

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Urban Mobility

General Description and Logic:

According to the European Commission, more than 60% of the population in Europe live in large cities. Nowadays, congestion and pollution are two of the main problems in the big cities in Europe, that come together with serious health problems.

This topic affects us all; for this reason, learners must reflect on the impact of pollution in their community and the existing alternatives.

This module also provides examples of some initiatives and actions carried out in different EU countries to solve these problems using smart approaches and technology, that the educator can use to illustrate this topic.

Subtopics:

This module consists of two main sections:

1. Urban Mobility: Definition

2. Urban Mobility Areas: Problems and Solutions

- Infrastructure
- Traffic Management and Safety
- Environment and health

Learning outcomes:

By the end of this module, educators will have learned how to explain the following material:

- what the concept of urban mobility refers to
- how technology can help improve key areas of the urban mobility system
- good practice cases of the transformation of urban mobility systems using smart approaches and technology

Skills & competences

- Instructional design
- Methodology
- Reflective practices
- Collaborative learning
- Guidance
- Actively engaging learners

- Goal setting and planning

Tips for implementation:

It can be implemented face-to-face or online.

Face-to-face:
In this case, the educator can prepare a presentation (using PowerPoint, Canva or Genial.ly) to show the main point to the learners. To display the presentation, a projector can be used, if available.

Online:
The educator can show the presentation in a videoconference session or ask the learners to see it on their own.

The educator can raise questions, such as:
- Have you ever wondered what travelling in cities will be like in the future?
- What measures can be taken to reduce the impact of pollution in cities?
- What can you do as an individual to reduce pollution in your town or city?

Divide learners in small groups (3/4 people) to discuss these issues, and they come together to share their opinions with the rest of the class.

Assessment:
To evaluate what students have learned, the educator can prepare an interactive quiz using Kahoot, Mentimeter or Google Forms.

Additional ideas:
The educator can present to the students with a study case and some related activities. Students will have to go online to provide solutions. They can do it individually or in small groups. Once they have finished this activity, all the class comes together to share the results. This can raise a discussion about the benefits and problems of each solution. In the end, students could come up with some ideas about how to improve mobility in their town or city and with a personal commitment to use more sustainable means of transportation.

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Water management

General Description and Logic:

Water is a precious and scarce resource. This module will help adult educators to make students reflect on the responsible and intelligent use of water and explain how technology can help them save water.

The material is presented in a way that allows educators to get ideas on how to introduce this topic to students and make them think about water and its importance through thought-provoking questions.

Subtopics:

The module consists of three sections:

1. Understanding the concept of Water management
2. Smart technologies and water management
3. Examples of smart solutions in the field of water management

Learning outcomes:

By the end of this module, educators will have learned how to explain the following material:

- Why water resources are running out – what exactly is the water problem of our planet;
- What is the role of smart water management in counteracting the loss of water and what it means;
- About intelligent technologies and life examples of their application, thanks to which it is possible to minimize water losses every day;
- How technology can help protect water and life on earth.

Skills & competences:

- Reflective practices
- Collaboratively learn problem-solving
- Research
- Design thinking
- Goal setting

Tips for implementation:

It can be implemented face-to-face or online.

Face-to-face:
In this case, the educator can prepare a presentation (using PowerPoint, Canva or Genial.ly) to show the main point to the learners. To display the presentation, a projector can be used, if available.
The educator can raise questions, such as:
- What can you personally save water actively?
- How can help us to save water?

Divide learners in small groups (3/4 people) to discuss these issues they come together to share their opinions with the rest of the class.

Online:
The educator can show the presentation in a videoconference session or ask the learners to see it on their own.

Assessment:
To evaluate what students have learned, the educator can prepare an interactive quiz using Kahoot, Mentimeter or Google Forms.

Additional ideas:
Ask students to work in small groups and search online some news related to water, droughts, floods or any topic related to water management and present this topic to the rest of the class. This will also be helpful to improve learner's teamwork competences.

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Access for all

General Description and Logic:

Autonomy and inclusion, freedom of choice, dignity and equality, most of us consider them a normal part of everyday life. But for persons with disabilities, these words are too often daily challenges and battles.

In this module, the educator will find many resources to make students aware of persons with disabilities and some basic needs they may require. It tackles the issue of dropping the barriers independent life can meet, in particular economic and cultural barriers, and how to overcome them with an open-minded approach and smart tools.

Subtopics:

The module consists of two sections:

1. Universal Design: definition
2. Disability Etiquette and Good Practices for the inclusion

Learning outcomes:

By the end of this module, educators will have learned how to explain the following material:

- Basic recommendations about how to deal with disability in public places: disability etiquette.
- Why are there facilities like ramps, touchscreens, voice reading, QRcode etc. in public places?
- Smart and cheap facilities that can be helpful for all in public places.

Skills & competences

- Instructional design
- Reflective practices
- Problem-solving
- Accessibility and Inclusion
- Design thinking
- Goal setting

Tips for implementation:

It can be implemented face-to-face or online.

Face-to-face:
In this case, the educator can prepare a presentation (using PowerPoint, Canva or Genial.ly) to show the main point to the learners. To display the presentation, a projector can be used, if available.

Online:
The educator can show the presentation in a videoconference session or ask the learners to see it on their own.

The educator can raise questions, such as:
- What problems can a person with a disability have when travelling?
- How can technology help to make their life easier?
- Have you had any personal experience in which technology has helped you? For example a translator in a foreign country.

Divide learners in small groups (3/4 people) to discuss these issues and they together to share their opinions with the rest of the class.

Assessment:
To evaluate what students have learned, the educator can prepare an interactive quiz using Kahoot, Mentimeter or Google Forms.

Additional ideas:
Activity: Put yourself in a person with disabilities' shoes.

Make groups of 3 or 4 people. Ask them that next time when they go from home to work or school, they have to imagine they have a disability. Each group covers a different disability, for example, wheelchair users, people with visual or hearing impairments Ask them to look at the details, for example, high pavements, steps, motorcycles or bicycles parked in the middle of the sidewalk...

Each group makes a list of the barriers they have encountered and discusses them with the rest of the class.

e-Governance

General Description and Logic:

This module aims to explain how the **E-governance** systems operate in different countries across the globe.

In this module, the educator will find many resources to make students familiar with the different ways to manage public and personal documentation, both paper-based and in electronic format and help them to reduce the time and space wasted working documents. Handling documentation in **e-format,** including **digitization,** would help to reduce the resources used.

Subtopics:

This module consists of three sections:

1. General description, main working principles and real-life examples
2. Pros and cons of **E-governance**
3. How to use different European **E-governance** systems

Learning outcomes:

By the end of this module educators, will have learned how to explain the following material:

- The main objectives of **E-governance systems (citizen registration, submitting documents etc.)**
- Some **countries** where E-governance is and will be implemented
- How to use some of the E-governance systems in EU
- The main options of E-governance

Skills & competences

- Instructional design
- Methodology
- Collaborative learning
- Guidance
- Design thinking
- Goal setting

Tips for implementation:

It can be implemented face-to-face or online.

Face-to-face:
In this case, the educator can prepare a presentation (using PowerPoint, Canva or Genial.ly) to show the main point to the learners. To display the presentation, a projector can be used, if available.

Online:
The educator can show the presentation in a videoconference session or ask the learners to see it on their own.

The educator can raise questions, such as:

- Have you tried to submit paper documents to your local government institution? Was it quite inconvenient?
- Have you heard anything about E-governance systems?
- Do you know how electronic citizen document management works?

Divide learners in small groups (3/4 people) to discuss these issues, and they come together to share their opinions with the rest of the class.

Assessment:
To evaluate what students have learned, the educator can prepare an interactive quiz using Kahoot, Mentimeter or Google Forms.

Additional ideas:
Ask students to work in small groups and search online the e-governance systems available in their town or city. The idea is that the learners get to know the resources available in their community. What do they need to get these services? Have they personal experience in using them? If not, do they know anybody that has used them? If possible, the groups should present personal experiences.
After the group presentation, the class comes together to discuss the advantages and disadvantages of the e-governance systems. The group work will help to improve learner's teamwork competences.

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Energy management

General Description and Logic:

According to the United Nations, about 54% of the world's population lives in urban areas nowadays. This percentage is expected to increase by up to 66% in 2050. The impact of those numbers not only reflects on our lives in the short-term but also on the environment. Therefore, one of the areas our course argues upon is **energy management**.

In this module, the educator will find resources to address the concept of *smart cities*, the current European policies and the areas of energy management and to raise awareness among the learners about the importance sustainability and what can be done to manage the resources effectively.

Subtopics:

The energy management module consists of 3 sections:

1. General description;
2. Energy management for cities;
3. Energy management for industries.

Learning outcomes:

By the end of this module, educators will have learned how to explain the following material:

- The definition of sustainability and energy management;
- The European policies around energy management;
- Good practices in cities/factories' framework
- The energy management cycle

Skills & competences

- Instructional design
- Methodology
- Collaborative learning
- Problem-solving
- Design thinking
- Goal setting

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Tips for implementation:

It can be implemented face-to-face or online.

Face-to-face:
In this case, the educator can prepare a presentation (using PowerPoint, Canva or Genial.ly) to show the main point to the learners. To display the presentation, a projector can be used, if available.

Online:
The educator can show the presentation in a videoconference session or ask the learners to see it on their own.

The educator can raise questions, such as:

- How much do you know about energy management? And to what extent energy management policies are developed and applied in your city/ country?
- Do you actively save energy?
- And finally, what's your behaviour towards the use of energy?

Divide learners in small groups (3/4 people) to discuss these issues, and they come together to share their opinions with the rest of the class.

Assessment:
To evaluate what students have learned, the educator can prepare an interactive quiz using Kahoot, Mentimeter or Google Forms.

Additional ideas:
Ask learners to reflect on their daily life and how they use energy. Are they using power efficiently and responsibly? Ask them to figure out three ways of reducing energy consumption.
You can use a video with some personal experience and discuss it afterwards. There are many interesting videos online; one idea could be this:
https://www.youtube.com/watch?v=pF72px2R3Hg
The educator can also prepare a survey for students to answer individually, discuss in groups and finally put all the results together.

Waste management

General Description and Logic:

In 2018, the European Parliament approved new guidelines to update current waste management rules, including new targets for recycling, packaging and landfilling. According to the guidelines, by 2035 – **65%** of municipal waste should be **recycled**.

In this module, the educator will find resources to present to the learners' **different solutions** to manage waste. In particular to **raise** their **awareness** about the fact that waste management is not only the collection, transport, processing and disposal of waste materials but also a multidisciplinary approach that involves engineering principles, economic, urban and regional planning.

In this module, the educator will find examples of good practices that can be presented and discussed in the class.

Subtopics:

 The module consists of three sections, as follows:

1. Introduction and general overview of "waste management" principles
2. The importance of waste management
3. Innovative waste management systems and how to apply them in your community

Learning outcomes:

By the end of this module, educators will have learned how to explain the following material:

- Understand waste management concept
- Identify the situation in your community
- Understand the importance of proper waste management

Skills & competences

- Instructional design
- Methodology
- Collaborative learning
- Accessibly and inclusion
- Problem-solving
- Design thinking

- Goal setting

Tips for implementation:

It can be implemented face-to-face or online.

Face-to-face:
In this case, the educator can prepare a presentation (using PowerPoint, Canva or Genial.ly) to show the main point to the learners. To display the presentation, a projector can be used, if available.

Online:
The educator can show the presentation in a videoconference session or ask the learners to see it on their own.

The educator can raise questions, such as:

- Imagine your community is full of waste, and you cannot do anything about it, how would you feel?
- Do you think that technology can improve waste management systems?

Divide learners in small groups (3/4 people) to discuss these issues, and they come together to share their opinions with the rest of the class.

Assessment:
To evaluate what students have learned, the educator can prepare an interactive quiz using Kahoot, Mentimeter or Google Forms.

Additional ideas:
The educator can organize a workshop to create new things from things we usually throw away. Students can be asked to think about or search for ideas online and present them to their peers.

Data mining

General Description and Logic:

In the current information economy, data mining is becoming more and more popular. Data mining is a process used by companies to turn raw data into useful information, that can be used to develop more effective marketing strategies, increase sales and decrease costs.

In this module, the educator will find resources examples and explanation of what the concept of Data Mining means and how it is affecting our daily life.

Subtopics:

The module consists of three sections:

- Understanding the concept of Data Mining
- Data Mining in Financial Industry
- Data Mining in Social Media Industry

Learning outcomes:

By the end of this module, educators will have learned how to explain the following material:

- The concept of Data Mining
- The application of Data Mining
- Creation of new knowledge through Data Mining

Skills & competences

- Instructional design
- Methodology
- Problem-solving
- Design thinking
- Goal setting

Tips for implementation:

It can be implemented face-to-face or online.

Face-to-face:
In this case, the educator can prepare a presentation (using PowerPoint, Canva or Genial.ly) to show the main point to the learners. To show - display presentation, a projector can be used, if available.

Online:
The educator can show the presentation in a videoconference session or ask the learners to see it on their own.

The educator can raise questions, such as:
- Have you heard about data mining before?
- Are you aware of how much "Data Mining" affects your life?
- Is data mining an advantage or a disadvantage? For whom?
- Is there any way to minimize the data we reveal?

Divide learners in small groups (3/4 people) to discuss these issues and, they come together to share their opinions with the rest of the class.

Assessment:
To evaluate what students have learned, the educator can prepare an interactive quiz using Kahoot, Mentimeter or Google Forms.

Additional ideas:
Students can research online what impact data mining has on them, how that data is revealed and what they can do to minimize the information they reveal. They can focus on social media and mobile applications. They can work individually or in small groups and present their findings to others.