



ZERO WASTE TRAINER CURRICULUM



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The BEZWA project (Building a European Zero Waste Academy) was an Erasmus+ funded collaboration between five organisations with the main aim to create a strong educational framework in support of the zero waste cities movement in Europe.



[Let's Do It Foundation](#) is a social enterprise that consults, trains and mentors public and private organisations to help scale societal change and innovation for successful implementation of zero waste and circular economy principles. LDIF also directly advocates and promotes policies and develops tools to create new solutions.



[Tallinn University](#) is a modern and dynamic research university in Estonia with a leading role in promoting an intelligent lifestyle through education, research, and a unique collaboration across disciplines. We view an intelligent lifestyle as making research-based decisions in order to improve society in general and the well-being of its citizens.



[Estonian University of Life Sciences](#) has priorities in academic and research activities, which provide the sustainable development of natural resources necessary for the existence of Man as well as the preservation of heritage and habitat. Research is carried out in three institutes: Institute of Forestry and Engineering, Institute of Agricultural and Environmental Sciences, and Institute of Veterinary Medicine and Animal Sciences. We are the first in Estonia to provide education about waste management.



[Zero Waste Europe](#) is the European network of communities, local leaders, experts, and change agents working towards the elimination of waste in our society. We advocate for sustainable systems and the redesign of our relationship with resources, to accelerate a just transition towards zero waste for the benefit of people and the planet.



[Društvo Ekologi brez meja](#) is one of the leading Slovenian NGOs dedicated to improving the state of our environment – focusing on efficient resource use and active citizenship. Most of their activities deal with waste at its source and they also run the Slovenian network of zero waste municipalities.



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TABLE OF CONTENTS

INTRODUCTION	1
What is the Zero Waste Trainer training course and why is it important?	2
Relation to the European Skills Agenda and key competences for lifelong learning	3
Authors and the creation of this curriculum	3
Definitions	4
CURRICULUM DESIGN	6
Overall goals and objectives	7
Expected achievements and results	7
Zero Waste Trainer Competence Matrix	8
Basis for selecting participants for the training	9
On-site training format and preparation	10
Modifications for online training format	11
CONTENT OF THE CURRICULUM	12
Structure of the curriculum, focusing on the core part of the training event	14
1. Basics of learning and how the brain works	15
2. Learning motivation and the three basic psychological needs	17
3. Misconceptions and how to overcome them	18
4. Learning assessment	19
5. Metacognition and self-assessment	20
6. General decisive (soft) skills	21
7. Putting learned things into practice	23
Concluding remarks	25
ANNEXES	26
Annex 1: Example of the on-site training programme for Zero Waste Trainers	27
Annex 2: Example questions for the pre- and post-task of the training course	30
Annex 3: Example final interview questions	31



INTRODUCTION



WHAT IS THE ZERO WASTE TRAINER TRAINING COURSE AND WHY IS IT IMPORTANT?

The European Union is steadily increasing its focus on moving to a circular economy, as evident by recent programmes like the Green Deal. A more effective way of handling waste and resources, increasing the reuse and recycling of materials will thus be a priority for governments in the coming years. Considering half of the EU Member States were unable to meet the 50% municipal solid waste recycling target in 2020 and are lagging behind the 2024 mandatory biowaste separate collection requirement and the 2025 55% recycling target, there is a clear and urgent need to support the waste management sector to become more circular. Achieving greater circularity requires constant work with local stakeholders, especially improving the skills and knowledge related to better resource management.

It is within this context and the subsequent urgent need for change that the authors decided to create structured curricula for Zero Waste Ambassadors and Zero Waste Trainers, who could help municipalities in this process.

While the aim of the Zero Waste Ambassador curriculum is to provide competences needed to support and drive communities in Europe towards long term systemic change for zero waste, the Zero Waste Trainer curriculum gives insights on how to train Ambassadors. This curriculum provides educators with a framework and a set of principles to be able to teach the most important concepts and practical knowledge of how to educate different target groups on zero waste and other complex topics.

There are a variety of workshops and training courses using both formal and non-formal education methods across the world that focus on teaching zero waste and circular economy. What makes this curriculum special is the strong basis on educational psychology. This means that the latest scientific knowledge on how the human brain learns and effectively acquires new information for long term memory has been embedded into this curriculum, which is unfortunately often not done in educational activities in general.

The curriculum was designed in a way so that educators who have familiarised themselves with the content of the Zero Waste Training Handbook,¹ can use this framework and resources provided within this document to create their own training activities. The authors believe that by making this curriculum and supporting material publicly available, they will help to enable the scaling up of zero waste knowledge and practical ability to apply such thinking across Europe. And since these teaching principles are universal and especially suitable for teaching complex topics, this curriculum can be used in a modified way to teach Trainers on any other complex topic, which includes most environmental and sustainability issues.

¹ Zero Waste Training Handbook, BEZWA, 2022

RELATION TO THE EUROPEAN SKILLS AGENDA AND KEY COMPETENCES FOR LIFELONG LEARNING

The Zero Waste Trainer curriculum supports the European Skills Agenda.² In particular by contributing to its Action 6: *Skills to support the twin transition* (to a Green and Digital EU), namely:

- Developing a European competence framework on education for climate change, environmental issues, clean energy transition and sustainable development, which will spell out the different levels of green competence.
- Supporting the development of a core green skills set for the labour market to guide training across the economy with a view to creating a generation of climate, environment and health conscious professionals and green economic operators.
- Helping to integrate environmental and climate considerations into school, higher education, vocational education and training, as well as professional training.

Although the Zero Waste Trainer curriculum puts main emphasis on how to teach and less on what to teach, it supports these goals in combination with the Zero Waste Ambassador curriculum. The design of this curriculum also took into account competences as defined by European Council's Recommendation on Key Competences for Lifelong Learning.³ Apart from the specific Zero Waste Trainer competences, the curriculum strongly supports the development of the personal, social and learning to learn key competence, in lesser extent also competences of cultural awareness and expression, citizenship, literacy and depending on the learning context, multilingual competence.

AUTHORS AND THE CREATION OF THIS CURRICULUM

This curriculum has been created as part of the Erasmus+ funded project *"Building a European Zero Waste Academy"*. The authors are from five organisations, bringing together necessary experience and expertise in the field:

- Zero Waste Europe: the main umbrella organisation in Europe for zero waste related work and research
- Ekologi brez meja: civil society organisation with long experience in national and local zero waste work and advocacy
- Let's Do It Foundation: civil society organisation with experience in active citizenship projects, environmental awareness and non-formal education
- Estonian University of Life Sciences, chair of rural building and water management: long term experience in teaching waste management and treatment
- Tallinn University, school of educational sciences: scientific knowledge of educational psychology

² [European Skills Agenda for sustainable competitiveness, social fairness and resilience](#), European Commission, 2020

³ [Recommendation on Key Competences for Lifelong Learning](#), European Council, 2018

The curriculum was developed in several stages, with a 2021 pilot training event with a test group in Belgium forming its core. First, information was collected through an open call for participants for the training course, where applicants had to share their background and motivation for joining the course. This gave insight into the main target group, their general profile, knowledge and needs for capacity building. Since from the beginning the aim was to create a longer learning process (a training course) than just one on-site training event, the pilot training course already included pre- and post-tasks for the learners, as well as webinars before and after the on-site training event, each of them giving further input for curriculum development. The post-task, which was about analysing participants' own teaching activities after the training event, helped to test and get feedback on the training format and content and its usefulness for the learners. Additionally the training course materials were tested in a shorter online training format in early 2022. Finally the project team also conducted interviews (13 in total) with all the people from the initial test group 4 months after the on-site training event, to assess the impact of the course in a longer time frame.

DEFINITIONS

To avoid any confusion, this section includes definitions of key terms related to the process and design of the training course. For content related questions consult the Zero Waste Training Handbook instead.

A **training course** is the implementation of a curriculum.

A **learner** is a participant of the training course (a person who is participating in the learning process) or a person who is in the situation of acquiring new knowledge.

An **educator** is a trainer, facilitator or consultant (a person who teaches, trains or facilitates people to help learners to acquire knowledge, competence or virtue).

A **learning activity or situation** is any activity or situation where the educators are aiming to help people to adopt a new way of thinking and acting, this can be from classical classroom settings to stakeholder meetings to engaging with people in informal settings.

Zero waste is the conservation of all resources by means of responsible production, consumption, reuse and recovery of products, packaging and materials without burning, and with no discharges to land, water, or air that threaten the environment or human health. This is the definition of Zero Waste as adopted by the Zero Waste International Alliance.

A **Zero Waste Ambassador** is a person who can argue, convince, advise local decision makers on zero waste policies and business models, with at least a medium level of zero waste expertise.

A **Zero Waste Trainer** is a person who can effectively develop and execute educational sessions (training, workshop) on different zero waste topics by taking into account the needs of the learners.

Competences are a combination of knowledge, skills and attitudes. As described in “Key competences for lifelong learning” by the European Commission:⁴

Knowledge is composed of the concepts, facts and figures, ideas and theories which are already established, and support the understanding of a certain area or subject.

Skills are defined as the ability to carry out processes and use the existing knowledge to achieve results.

Attitudes are the disposition and mindset to act or react to ideas, persons or situations.



⁴ [Key competences for lifelong learning](#), European Commission, 2019



CURRICULUM DESIGN



OVERALL GOALS AND OBJECTIVES

The objective of the curriculum is to guide educators to teach and empower their learners with a scientific approach to become Zero Waste Trainers who:

- Will help their learners (be it municipality workers, business owners, students at schools or anyone else) to truly understand the complexity of zero waste and sustainable waste management,
- Will create motivating environments for different stakeholders to get engaged in zero waste solutions,
- Will help to effectively overcome common zero waste related misconceptions;
- Will strive to promote zero waste values that will be vital in communicating proper reduction and disposal methods.

The main target group of the curriculum are members of different community groups and organisations, operating at local, regional or national level. This curriculum is also suitable for individuals with high levels of motivation from related sectors (municipalities themselves, teachers, consultants...). They should already be familiar with zero waste concepts on a systemic level and can be somewhat experienced educators or just starting with their training and teaching work.

EXPECTED ACHIEVEMENTS AND RESULTS

Learners shall demonstrate that the acquired competences match the target ones specified for each chapter of this curriculum. On top of that, some evaluation activities are proposed.

Learners will increase their competences in three focus areas:

- Educational psychology,
- Teaching zero waste,
- Decisive (soft) skills.

These focus areas were defined after grouping all the necessary competences needed for Zero Waste Trainers. The competences themselves were identified through expert discussions between the authors bringing in both zero waste and educational expertise, and supplemented with the information gathered from the test group at the pilot training. In essence they are a minimal set that answer the question of what sort of trainer would be most successful at creating lasting understanding of zero waste principles.

It's important to note that since educational psychology is not a very known field and might not be intuitive to many, the majority of the training course needs to be dedicated to these competences. This also means that due to the training course's volume constraints, zero waste competences are only touched upon in the context of teaching. The basic zero waste competences should be acquired from the Zero Waste Ambassador training course or from elsewhere.

ZERO WASTE TRAINER COMPETENCE MATRIX

Competences	Educational psychology	Teaching zero waste ⁵	General decisive (soft) skills
Attitudes	<ul style="list-style-type: none"> Valuing science-based approach to learning and teaching Open (and warm) curiosity towards the learners' perspective, especially in moments of stress/ misunderstandings Valuing the importance of proper assessment of learning 	<ul style="list-style-type: none"> Valuing the zero waste approach to resource management⁶ and general contribution to human wellbeing 	<ul style="list-style-type: none"> Patience and empathy towards learners and themselves Openness to change, to new ideas and scientifically sound but counterintuitive findings Acceptance that mistakes are normal part of being human and necessary for learning to happen
Knowledge	<ul style="list-style-type: none"> Knowledge of the basics of effective learning and how memory works Knowledge and understanding of the importance of supporting the 3 basic psychological needs Understanding of why and how misconceptions occur and how to correct them Knowledge of the complexity of proper assessment of learning Knowledge of the main learning-related biases and illusions 	<ul style="list-style-type: none"> Knowledge of zero waste principles and practices in different contexts Knowledge of the main zero waste misconceptions and how to correct them 	<ul style="list-style-type: none"> How to give and receive feedback Knowledge about conflict management
Skills	<ul style="list-style-type: none"> Ability to create motivating learning environments Ability to support long-term learning instead of short-term performance Ability to follow the main principles (validity, reliability etc) of assessment of learning Ability to inhibit the wish to give expert advice right away, and instead ask smart questions and listen 	<ul style="list-style-type: none"> Ability to transform zero waste skills and knowledge into educational activities Ability to help correct zero waste misconceptions 	<ul style="list-style-type: none"> Ability to adapt to the changes in learning setting and manage time, ability to improvise Step-by-step developing confidence to perform in public Ability to critically evaluate their own teaching and welcome failure as part of the learning process

⁵ In general it is assumed that the Zero Waste Trainer has the same zero waste competences as the Zero Waste Ambassador, more info in the Zero Waste Ambassador Curriculum, BEZWA, 2022

⁶ Producing only what we need, keeping it in use for as long as possible, trying to put it back into circulation after use, creating no harm during disposal...

It's important to note that the Competence Matrix does not reflect all the competences that are addressed in the example 5-day training event. Rather, they offer a wider scope of competences that are needed for continuous development of a Zero Waste Trainer. The table on the structure of the curriculum on page 14 will give a more detailed view about the different levels of the training.

BASIS FOR SELECTING PARTICIPANTS FOR THE TRAINING

The participants (learners) can be selected based on their interest and experience in teaching zero waste topics, working with municipalities and other local or national stakeholders. Additional criteria for selection of participants can be their motivation letters and positions within their organisations. They should already have a good understanding of zero waste principles and experience in working on zero waste topics. Ideally they would also have some experience in either teaching, training and/or consulting and want to upgrade their skills in effective teaching methods. For those who have some experience in teaching, but not much in zero waste, it is recommended to go through the Zero Waste Ambassador training course first.

As the end goal of this curriculum is a transition towards zero waste on the level of municipalities, ideally the learners should be active on the local level, either formally or informally.

Example of used criteria for the application process:

Who can apply?

- They work (including volunteering) in the field of waste management, zero waste, circular economy or any other sustainability field,
- At least some of their work is focused on the local (municipality) level,
- They have a good knowledge of zero waste principles and their practical implementation or they have participated in the Zero Waste Ambassador programme,
- They have some experience in running workshops and other educational activities.

To support and bring more transparency to the selection process it is advised to prepare some questions to help to understand the motivation and pre-knowledge of the participants, and foresee the potential impact they could have in their training/consulting/teaching work in zero waste and/or other sustainability fields.

Below are **example questions to help you with the selection process** and give you more information about the participants. After each question one can find the motivation behind it and the insights it can provide.

- **What is zero waste to you?** (Aim: to see the level of understanding of zero waste, is it mainly in terms of lifestyle, or does the person think of it also in the sense of systemic change. For the training the participants should already have a good sense of zero waste and the systemic approach to it).
- **What previous experience do you have with working on zero waste topics?** (Aim: to see the level of zero waste work that the person has done. For the training it is advisable if

participants have already experience in working on zero waste topics, educational or not, ideally beyond lifestyle direction, as the training course itself does not focus so much on this knowledge).

- **In your opinion, what are effective ways to teach and train people on topics such as zero waste?** (Aim: to see what kind of pre-knowledge and possible experience the person has in teaching and education, this question is to provide input for the educators in their preparation work).
- **What excites you about this training opportunity and how would it support your existing work to bring zero waste principles to communities?** (Aim: to see the motivation behind the application and potential impact that this training could have for the community).

ON-SITE TRAINING FORMAT AND PREPARATION

The format was designed as a 5-day training. The example agenda disclosed in Annex 1 is just a recommendation for educators on how to design their own training events. They are free to change this agenda and adapt it to the situation at hand.

When planning a training there are some general things to consider:

- length of the training,
- objectives of the training,
- length of the sessions,
- training material that will support the learning process,
- registration and promotion of the training.

Diversity of approaches: teaching and learning methods

While planning the sessions please refer to the Trainer's part of the handbook.⁷ Each educator has the freedom to decide which learning methods to use, but for those who need more practical guidance, some examples are included in each content chapter.

What to keep in mind when planning sessions to maximise learning:

The Trainer's checklist of the handbook presents some guiding principles. Educators can also reflect on the pilot training programme format, as the suggested activities were prepared to be compliant with both session objectives and best session planning practices.

⁷ Zero Waste Training Handbook, BEZWA, 2022

MODIFICATIONS FOR ONLINE TRAINING FORMAT

The main training event is strongly recommended to be organised physically, mainly for the reasons of the quality of discussion and especially better understanding and experience of the 3 basic psychological needs, which is one of the core topics in the training course. Alternatively though, the following training format could be organised online:

- At least 4 sessions, each lasting at least 2 h and focusing on one topic:
 - Main principles of teaching
 - Learning motivation and the 3 basic psychological needs
 - Misconceptions
 - Learning assessment
- Learners should come to each session already prepared by having read the corresponding chapter from the handbook.
- Additional sessions of icebreaking activities in the beginning and a Q&A round in the end can be added.
- As the teaching mini-sessions⁸ are a crucial part of the training course, this would have to be arranged separately as a physical training day, or if not possible, a separate small online session where each learner pair can put their learned skills into practice.

As seen from the both on-site and online test training events, on-site has clear advantages in terms of the full presence of the learners, more in-depth discussions and general networking.

⁸ More from the chapter: "Teaching mini-sessions", Zero Waste Training Handbook, BEZWA, 2022



CONTENT OF THE CURRICULUM



The training course covers different aspects of learning and teaching combined with zero waste topics. Each section consists of a short introduction to the topic, key objectives to cover minimum competences and some suggestions to go deeper into the topic – to level it up. These are complemented by examples and ideas for learning activities.

The structure of the content is built around the logic that one starts with the main principles of teaching and how the brain works, then continues with creating motivating learning environments, moving onto misconceptions and how to overcome them, followed by assessment of learning. This is supplemented with developing some general soft skills like public performance and then putting learned knowledge and skills into practice with teaching mini-sessions. In parallel, activities to support metacognition (thinking about how you think and learn) run throughout the training course.

The focus of the training course is on basic learning-related processes and not so much on different methods, which is often the more common approach in trainings-for-trainers. The reason for that is that applying teaching methods and techniques, without knowing why they are effective and what the processes and principles behind them are, may lead to their inflexible/inefficient use. Situations vary and thus it is needed to adapt the knowledge and methods all the time. And since these processes are unknown to many, our curriculum dedicates the majority of time to them.

The pilot training also included pre- and post-training homework and similarly two webinars (on learning, on misconceptions). The first homework is intended to see how learners analyse their own learning and teaching experience and what they view as good and bad teaching, the second to complement the on-site training and to nudge them to put their gained knowledge to a practical test. The webinars mainly serve to have extra time for learning activities: the first webinar before on-site training can provide the first networking between the participants but also help them analyse more deeply how to teach effectively. The second webinar can mostly be used to tackle topics that did not get enough time during the on-site training and where more discussion is needed.

The overall structure of the curriculum is shown in the table below, while the agenda for the pilot on-site training held in Belgium can be found in Annex 1. While the Zero Waste Trainer Competence Matrix gives an overview of all relevant competences that could be developed, the table shows them in basic and level up sections. This is because in the 5-day pilot training event the focus was only on gaining basic competences, which we can address in that timeframe. The table could be however used also in a vertical direction, by focusing on one topic and building a training event around only that, with the aim to reach both basic and level up competences.

Note that the included examples of learning activities are just examples and should not be used without the understanding why they are designed like that. For the basis of how learning activities should be set up and what to take into account, the authors recommend first reading the Zero Waste Trainer part of the handbook.⁹ For example one of the main principles to use is the productive failure design,¹⁰ where learners first practice and try out some exercises connected to the main content and only after that they discuss the expert knowledge and theory. This can be done at every session of the training event.

⁹ Zero Waste Training Handbook, BEZWA, 2022

¹⁰ More from the chapter: "Main principles of teaching aka how the brain works", Zero Waste Training Handbook, BEZWA, 2022

STRUCTURE OF THE CURRICULUM, FOCUSING ON THE CORE PART OF THE TRAINING EVENT

Every day	Day 1		Day 2	Day 3		Day 4&5
Metacognition and self-assessment	Basics of learning and memory	Learning motivation, 3 basic needs	Misconceptions	Assessment of learning	General soft skills: Public performance	Teaching mini-sessions
Basic competences						
<ul style="list-style-type: none"> • Ability to assess one's own skill level in being a Zero Waste Trainer • Ability to direct one's learning more effectively • Ability to critically evaluate their own teaching and welcome failure as part of the learning process 	<ul style="list-style-type: none"> • Understanding the basics of effective learning and how memory works • Recognising the importance of mistakes and creating possibilities for mistakes in learning situations • Understanding of how to support long-term learning instead of short-term performance • Ability to create exercises on zero waste topics based on effective learning principles 	<ul style="list-style-type: none"> • Knowing and understanding of the importance of supporting 3 basic psychological needs • Ability to recognise the 3 basic needs of the learners and to support at least some of them 	<ul style="list-style-type: none"> • Understanding of why and how misconceptions occur • Knowing the different types of misconceptions and how to correct them • Knowing the main zero waste misconceptions • Knowing the methods that help correct zero waste misconceptions 	<ul style="list-style-type: none"> • Understanding the limitations and possibilities of assessment of learning • Ability to assess the learning outcomes of planned educational activity in general terms 	<ul style="list-style-type: none"> • Building more confidence to perform in public through practice, feedback and identifying future opportunities to learn • Ability to adapt to the changes in a learning setting, ability to improvise • Understanding the basics of storytelling, what makes a good story and a speech 	<ul style="list-style-type: none"> • Testing all the competences from past days • Ability to transform zero waste skills and knowledge into educational activities
Level up						
<ul style="list-style-type: none"> • Ability to plan for the topics or skills one would like to improve • Ability to teach metacognitive skills 	<ul style="list-style-type: none"> • Ability to ask good questions that are designed to initiate more complex thinking in learners • Ability to always listen to learners' ideas first before giving own expert advice (inhibiting trainer's inner expert) • Understanding the concept of working memory and how it affects the amount of information the learner is able to handle in short period of time • Ability to help learners use effective retrieval strategies for long term learning • Understanding of growth vs fixed mindset and how to support growth mindset in learners 	<ul style="list-style-type: none"> • Ability to support the 3 basic needs also in more challenging situations (like online) and with difficult learners • Knowledge of intrinsic and extrinsic life aspirations, and how to support intrinsic life aspirations through educational activities 	<ul style="list-style-type: none"> • Ability to create learning situations where both misconceptions can be corrected and correct conceptions can be used in practical context • Knowledge of different specific methods for correcting misconceptions and how to use them • Ability to support and develop expert thinking in zero waste topics in learners 	<ul style="list-style-type: none"> • Ability to understand the complexity of creating validated evaluation questions 	<ul style="list-style-type: none"> • Ability to manage well the teaching time • Knowledge of different energizers and ice-breaking games • Knowledge of some improv theatre principles and how to use them for strengthening general soft skills • Conflict management • Mindfulness techniques 	<ul style="list-style-type: none"> • Ability to take into account learned educational psychology principles when designing learning activities • Ability to handle different disruptions during learning activities
Section 5	Section 1	Section 2	Section 3	Section 4	Section 6	Section 7

Additionally: online activities before the training event contribute to the competences related to metacognition and self-assessment (webinar and pre-homework), activities after the training event further support the competences related to misconceptions (webinar) and applying the principles in real-life work (post-homework)

1. BASICS OF LEARNING AND HOW THE BRAIN WORKS

It is widely studied that most people have illusions about learning, teaching and what effective learning means. Therefore it is essential to start with understanding how the brain actually works when it comes to learning, especially long-term learning, not just short-term performance. *Short-term performance* in this context means learning based on short-term memory, so that a person is able to perform shortly after learning, but will forget the content soon after. *Long-term learning* relies on long-term memory (and that assumes qualitatively different learning methods than achieving short-term performance) – this means that the immediate performance suffers, but long-term learning is more likely. This is important to point out, as many teaching techniques actually just achieve the performance and with zero waste topics we are aiming for long-term conceptual and behavioural change.

Objectives:

- Understanding the basics of effective learning and how memory works.
- Recognising the importance of mistakes and creating possibilities for mistakes in learning situations.
- Understanding of how to support long-term learning instead of short-term performance.
- Ability to create exercises on zero waste topics based on effective learning principles.

Examples of learning activities:

- Starting with a discussion on what are the best conditions for learning from the learners view; asking, why these are the best conditions. Moving on to looking which ideas are right and why, which are wrong and why and which are missing and why; picking out the essential elements that support learning.
- Going into pairwise brainstorming on how to create those conditions in learning situations and why we are often inclined towards creating learning conditions which are not optimal.
- Showing different examples of unhelpful ways of teaching zero waste and/or environmental topics then analysing together what could be done better and why. Comparing those with the pre-work tasks where learners had to create plans for a bad and good learning session and how they relate to the principles under discussion.
- Expert information only provided after learners' own ideas and as feedback to them, throughout the session when needed.

Level it up objectives:

- Ability to ask good (=cognitively engaging) questions that are designed to initiate more complex thinking in learners.
- Ability to always listen to learners' ideas first before giving own expert advice (inhibiting trainer's inner expert).
- Understanding the concept of working memory and how it affects the amount of information the learner is able to handle in short period of time.
- Ability to help learners use effective retrieval strategies for long term learning.
- Understanding of growth vs fixed mindset and how to support growth mindset in learners.



2. LEARNING MOTIVATION AND THE THREE BASIC PSYCHOLOGICAL NEEDS

Learning motivation is another core topic in teaching. Motivation can be categorised into “trash” and “quality” motivation – trash motivation means motivators that direct people to do things (like learn) fast and superficially, often with little long-term impact, while quality motivation supports rather long-term behavioural change.¹¹ If we want people to learn and adopt zero waste principles, we need to create conditions for quality motivation. The cornerstones of quality (or autonomous) motivation are the three basic psychological needs: relatedness, competence and autonomy. But they can be suppressed very easily in learning situations. When these needs are suppressed, deeper learning hardly happens. It takes practice to truly learn to support them and to recognise all the moments when we often unintentionally suppress those needs in others.

Objectives:

- Understanding of the importance of supporting 3 basic psychological needs.
- Ability to recognise the 3 basic needs of the learners and to support at least some of them.

Examples of learning activities:

- Looking at different typical learning situations, where the 3 basic needs are suppressed, asking learners to identify them and how to react better in those situations.
- Short discussion on differences between what is trash and what is quality motivation, intrinsic and extrinsic life-goals and how are they all connected and relevant to environmental work.
- Discussing actions that either support or suppress the 3 basic needs.

Level it up objectives:

- Ability to support the 3 basic needs also in more challenging situations (like online) and with difficult learners.
- Knowledge of intrinsic and extrinsic life aspirations, and how to support intrinsic life aspirations through educational activities.

¹¹ More in-depth description of trash and quality motivation in: “Learning motivation aka how to get everyone on board on environmental issues?”, Zero Waste Training Handbook, BEZWA, 2022

3. MISCONCEPTIONS AND HOW TO OVERCOME THEM

Zero waste like any other complex topic comes with a fair share of misconceptions. Sometimes these are urban myths about certain ways of handling waste, sometimes misunderstandings of different technologies and so on. Since dealing with people's misconceptions is a rather common challenge for Zero Waste Trainers, it has been included as the third main topic of the curriculum. It is important to know that most of the time misconceptions cannot be corrected by simply stating the right information and therefore there is a need to get to know the different types of misconceptions and how to approach them in learners. One of the elements for getting rid of misconceptions is helping the person him/herself move towards expert thinking, this means understanding the defining aspects of the issue at hand better and asking more detailed and relevant questions. This does not mean that everyone needs to become expert in all waste related issues, but rather that people practice more critical thinking on complex problems.

Objectives:

- Understanding of why and how misconceptions occur.
- Knowing the different types of misconceptions and how to correct them.
- Knowing the main zero waste misconceptions.
- Knowing the methods that help correct zero waste misconceptions.

Examples of learning activities:

- Learners work in groups looking at a list of different misconceptions, some related to zero waste, some not, trying to find reasons for these misconceptions and if they are of similar or of different types.
- Discussion on how an expert looks at the misconceptions, how a beginner does, and what are the differences there; what are the questions that experts asks.
- Work in groups on steps that could correct different zero waste misconceptions.
- Discussion in a big group on effective ways for helping people correct their misconceptions.

Level it up objectives:

- Ability to create learning situations where both misconceptions can be corrected and correct conceptions can be used in practical context.
- Knowledge of different specific methods for correcting misconceptions and how to use them.
- Ability to support and develop expert thinking (like ability to ask more detailed and relevant questions) in zero waste topics in learners.

4. LEARNING ASSESSMENT

If we want to know if learning really happened, then assessment is essential. In zero waste our aim is that our teaching has a long-term impact and learning at our sessions is effective. It is very difficult to assess learning in a validated way and most of the widely used assessment methods are not very reliable. Therefore it is important for the Zero Waste Trainer to know what could be practically doable and what methods are more reliable.

Objectives:

- Understanding the limitations and possibilities of assessment of learning.
- Ability to assess the learning outcomes of planned educational activity in general terms.

Examples of learning activities:

- Discussion on how the learners (Zero Waste Trainers) themselves could be assessed by the educators at the training course, ideas and proposals from the learners.
- Discussion with learners what they think learning assessment is, what do we want to assess as trainers and how to do it, if and how do they usually do it.
- Grouping assessment methods, together with the input from the educator, into useful and less useful; discussing, what are the validity and reliability of an assessment tool.
- Linking the discussions back to the first topic of the training (basics of learning) and what is remembered about memory and how to take that into account in assessment.

Level it up objectives:

- Ability to understand the complexity of creating validated evaluation questions.



5. METACOGNITION AND SELF-ASSESSMENT

Metacognition can be defined as analysing one's own thinking processes. It is a skill that does not have a separate session in neither Zero Waste Ambassador nor Trainer pilot training courses, but is lightly present throughout both of the courses. As the Zero Waste Trainers also look deeper into learning and the illusions of learning, then this topic is explained more in this curriculum.

Metacognition is essential for self-development and improving one's competences. In our curricula we have combined it with self-assessment. While self-assessment focuses on how well we know the content of the course, metacognition focuses on how effective our learning strategies at acquiring that content are.

Objectives:

- Ability to assess one's own skill level in being a Zero Waste Trainer.
- Ability to direct one's learning more effectively.
- Ability to critically evaluate one's own teaching and welcome failure as part of the trainer's learning process.

Examples of learning activities:

- With all the following exercises, educator(s) explicitly explain the reason for these exercises to learners: how it helps their learning.
- Questions before the on-site training (during webinar and/or in written form) on learners' learning experience and what they consider as effective learning.
- Opening questions at the start of each training day and/or sessions on what could be the learning goals for learners themselves.
- Retrieval exercises some time after learning sessions to strengthen memory traces.
- Questions that help to analyse the learning activities – in a common discussion and/or individual writing at the end of each training day.
- Self-assessment exercises at the beginning and end of the training event.
- Follow up questionnaire and/or interview that also tackles self-assessment and analysis of learning progress.

Level it up objectives:

- Ability to plan for the topics or skills one would like to improve.
- Ability to teach metacognitive skills.

6. GENERAL DECISIVE (SOFT) SKILLS

Being a good Zero Waste Trainer also means having several soft skills like empathy, patience, ability to adapt and improve, courage and skill to speak in public, to handle conflicts with calmness, to be a good listener and so on. As it is only possible to tackle a few of them during the training course, the concrete soft skill focus which is seen as most needed can be chosen by the educator(s). Depending on the possibilities, parallel sessions could also be offered to learners on what they would like to focus on.

In the pilot course, the topic of public performance was chosen, as it brought some diversity into the teaching topics and methods. It was also organised in two parallel sessions so that learners could choose between a more classical public speaking session and playful improv theatre session.

6.1. Public speaking

Being a Zero Waste Trainer also means having to speak in front of many people, from giving a speech to participating in panel discussions and to engaging with your learners in a teaching session. This requires courage, confidence and skill – all which are achievable by practice. Zero Waste Trainers need to be able to adapt their style of communicating, as well as the content, for the varying audiences which we speak in front of. This requires confidence in the content (e.g. knowing the different types of plastic when running a session on plastic recycling) but it also requires a good understanding of how to convey messages in a compelling manner and how to engage audiences.

Objectives:

- Understanding the basics of storytelling, what makes a good story and a speech.
- For each trainer to develop their knowledge on their own 'journey' and some possibilities to tell it in a compelling way.
- Building more confidence to perform in public through practice, feedback and identifying future opportunities to learn.

Examples of learning activities:

- Discussion based on learners' experience of what makes public speaking and speeches good, ideally using video footage of public speeches to help the learners analyse and identify both good and bad practices.
- Discussion on how to embed storytelling elements into speeches and how to prepare a speech.
- Presentation and discussion on the various forms of public speaking that the learners often do (e.g. panel discussions, facilitating workshops, social media videos etc.) and the different formats required for the learners to become good public speakers in each.
- Practising in pairs or small groups on speech writing and speaking, if possible also performing in front of the group followed by feedback.

6.2. Improv theatre

Improv theatre offers a somewhat unconventional and playful way to address speaking and performing in public. As teaching activities are always a two-way communication, where the educator also has to listen to his/her learners and if needed, adapt to changing situations, then improv theatre is a good way for practising these skills. Improv actors need to listen to their stage partners and be ready to change their ideas constantly, at the same time being brave to talk about things they might not know about and let go of the control over the situation. Improv theatre is also full of games and energizers which can be used in training settings as well.

Objectives:

- Ability to adapt to the changes in a learning setting, ability to improvise.
- Building more confidence to perform in public through practice, feedback and identifying future opportunities to learn.

Examples of learning activities:

- Playing different improv games each targeting a different aspect of public performance, like listening and adapting to changing situations.
- Discussion on how these exercises and games can be helpful for Zero Waste Trainers.

Level it up objectives for soft skills:

- Ability to manage well the teaching time.
- Knowledge of different energizers and ice-breaking games.
- Knowledge of some improv theatre principles and how to use them for strengthening general soft skills.
- Conflict management.
- Mindfulness techniques.



7. PUTTING LEARNED THINGS INTO PRACTICE

This is the final step of the training where the learners get to try out some of the learned principles through teaching mini-sessions. The aim of the sessions is to design and facilitate a small session on a topic that the learners usually teach. It is one of the most important parts of the training where learners get to practice the learned competences in safe, yet close-to-real-life situations. At the same time the teaching mini-sessions are a form of a test of the whole training event, where educators get a better sense of the learners' skill level.

Objectives:

- Testing all the competences from past days.
- Ability to transform zero waste skills and knowledge into educational activities.

Learners form pairs and prepare a short (30-40 min) teaching session together, while trying to incorporate all the elements taught in the previous days. All the pairs can choose their own zero waste topic to focus on in the session. The rest of the learners and the educators will act as the participants, helping to analyse the session at the end of it.

A longer description of the teaching mini-sessions can be found in the teaching mini-sessions chapter of the handbook.¹²

Level it up objectives:

- Ability to take into account learned educational psychology principles when designing learning activities.
- Ability to handle different disruptions during learning activities.

The teaching sessions can be developed further by giving more time for their development and actual execution, by adding specific roles into the audience etc. One option is also to use the [training video](#) and exercises proposed in the training video guide for Zero Waste Trainers¹³ in the handbook.

¹² Zero Waste Training Handbook, BEZWA, 2022

¹³ "Training video guide for Zero Waste Trainers", Zero Waste Training Handbook, BEZWA, 2022

Pre-training activities

The training programme also includes pre-training activities in the form of a webinar and an individual teaching analysis assignment.

The introductory webinar should be held at least a month before the on-site training and is a good opportunity for:

- The learners to get to know each other,
- First discussions around how and when learning happens, opening one's learning illusions about memory, thinking, motivation and metacognition,
- Introducing the whole timeline of the training course and individual pre-work,
- Helping educators to understand what pre-existing knowledge and misconceptions the learners have, and helping learners get a sense of the topics of the training course.

Whereas in the Zero Waste Ambassador training course the participants are asked to reflect on the questions as learners, then in the Zero Waste Trainer course they should reflect on different learning situations already from the trainer's perspective.

The purpose of the individual teaching analysis assignment is to help the learners to analyse their own previous learning and teaching work and experience. It also gives the main input for educators to map the pre-existing knowledge and misconceptions of the learners, as one of the tasks is to describe a bad and a good learning activity. The on-site training programme can largely use this input to bring in examples and smaller topics for the training event's content, and ask learners to compare their pre-tasks with how they would plan a good learning activity after this new knowledge. Consult Annex 2 for an example set of questions.

Post-training activities

At least one month after the training event, the learners are asked to self-evaluate one of their own training activities that they have prepared and facilitated (lasting at least 1h). The responses give information to the educators whether the learnt competences have been put into practice. For the learners the purpose is threefold:

- To give them an opportunity to test their new skills and knowledge in a non-simulated environment,
- To support them in analysing their own teaching work and providing a framework for a regular planning-analysing practice,
- To help them better understand their own competence level, and where they would need and want to improve.

For this task, the learners need to receive feedback from the educator(s), preferably in direct communication. In the pilot training course this consisted of a written report and a widely scoped final interview, which is further elaborated in the next section. A template for the report (see Annex 2 for an example) was shared ahead of time to also help participants prepare better for the training activity.

Consider also organising a webinar after the on-site event to cover any topics that were overly rushed, skipped or the need for them became apparent only during the on-site training.

Evaluation and self-evaluation

As mentioned earlier, one good version of a final evaluation would be organised in the form of individual interviews, where participants reflect on experience from both the Zero Waste Trainer training and their own training work, future plans, learning needs and their strong and weak points when it comes to being a trainer (see Annex 3 for an example). The questions should be defined in a way that helps them focus on the journey ahead. Another section of the interview focuses on learning evaluation more comprehensively by challenging them with two to three hypothetical teaching situation scenarios.

An optional form of self-evaluation was used at the on-site training. Participants were asked to write down answers to a list of probing questions, once at the start and then at the end of the training, to be able to reflect on its impact.

Consult the metacognition chapter¹⁴ in the handbook for an example self-evaluation sheet and learning assessment chapter¹⁵ for general evaluation resources. The teaching mini-sessions themselves are also an opportunity for evaluation.

And lastly, participants can always evaluate their learning themselves by comparing their competences with the learning objectives in this curriculum.

CONCLUDING REMARKS

It is worth repeating that the curriculum is a malleable framework for teaching Zero Waste Trainers, not a strict prescription of the detailed process itself. One can shrink or expand its timeline, use additional exercises and methods of teaching, directly include topics that are relegated to “level up” competences and so on. However, for a well-rounded Zero Waste Trainer, it is important to ensure the same learning outcomes are reached, regardless of the way taken there.

The pilot training and this curriculum were intricately linked into a feedback loop. The curriculum may get further updates with new insights and feedback through additional implementations of the training course. Nonetheless, the authors hope it is already a valuable resource to would-be zero waste educators interested in spreading zero waste knowledge and values to future trainers.

¹⁴ “Metacognition aka how to keep track of your own learning?”, Zero Waste Training Handbook, BEZWA, 2022

¹⁵ “Learning assessment aka how do you know that learning happened?”, Zero Waste Training Handbook, BEZWA, 2022



ANNEXES



ANNEX 1: EXAMPLE OF THE ON-SITE TRAINING PROGRAMME FOR ZERO WASTE TRAINERS

It is recommended to have around 12-22 participants at the on-site training event lasting for at least five days. The daily programme is recommended not to last more than 7h (including breaks and lunch), as the content is rather intensive. The agenda also includes the teaching mini-sessions by learners, so the more the learners, the more time is needed for this part in the agenda. Another option is to hold two 3-day-training events, with the second one focusing on the learners' own teaching sessions.

The following agenda is based on the agenda for the pilot training that was held in Belgium, but it is further enhanced with feedback and experience from the pilot. Feel free to adapt it as needed.

DAY 1: Basics of learning & Learning motivation	
Length	SESSION title + Activity plan
1 h	"Welcome session" <ul style="list-style-type: none"> • Getting to know each other, writing down common rules • Self-assessment, what are the needed competences of a Zero Waste Trainer? • Filling in the self-assessment questionnaire
1 h	"Basic concepts around brain and learning" <ul style="list-style-type: none"> • Guided discussion on what is effective learning • Tackling the main learning illusions • Connecting the topic with examples from environmental topics and zero waste
Break	
1.5 h	"Basic concepts around brain and learning" continues
Lunch	
1 h	"Creating motivating learning environments", part 1 <ul style="list-style-type: none"> • Group work to discover the essence of the three basic psychological needs • Looking into ways how these needs can be supported or suppressed in learning situations
Break	
0.5 h	"How to give feedback?" <ul style="list-style-type: none"> • Discussion in groups and altogether: in what conditions does feedback feel hurtful, difficult? In what conditions does it feel safe and useful?
0.5 h	Evening reflection: what made you struggle today?



DAY 2: Learning motivation & Misconceptions

Length	SESSION title + Activity plan
0.5 h	Warm-up & retrieval from the day before
1 h	<p>“Creating motivating learning environments”, part 2</p> <ul style="list-style-type: none"> • Looking back at the discussions on the day before • Continuing with how to support the three basics needs in learning situations
Break	
1.5 h	<p>“What are misconceptions and how to overcome them”</p> <ul style="list-style-type: none"> • Guided discussion on what misconceptions are and their different types • Focus on overcoming zero waste misconceptions
Lunch	
1.5 h	“What are misconceptions and how to overcome them” continues
Break	
0.5 h	Tackling the unanswered questions on misconceptions and the three basic psychological needs
0.5 h	Evening reflection: what can you do next with what you learned today?

DAY 3: Learning assessment & Putting teaching into practice

Length	SESSION title + Activity plan
0.5 h	Warm-up & retrieval from the day before
1.5 h	<p>“How to assess your teaching activities?”</p> <ul style="list-style-type: none"> • Guided discussion on different assessment methods • Validity of assessment
Break	
1 h	<p>Introduction of the teaching mini-sessions and first preparation</p> <ul style="list-style-type: none"> • Participants need to form pairs and develop a short workshop where they can implement all the learned principles in their own typical teaching topics • Time to find your teaching partner and develop first ideas
Lunch	
2 h	<p>“Public performance” in two parallel sessions:</p> <p>a) public speaking – how to prepare better for your speeches</p> <p>b) improv theatre – developing listening, speaking skills in a creative way</p>
0.5 h	Preparation time for teaching mini-sessions
0.5 h	Evening reflection: what are you taking from today? What is your first stuck-point in your own teaching session?

DAY 4: Teaching mini-sessions part 1

Length	SESSION title + Activity plan
1.5 h	Preparation time for teaching mini-sessions
Break	
1.5-2 h	Preparation time and/or first participants' teaching mini-sessions ¹⁶ <ul style="list-style-type: none"> • Time per pair: at least 30 min + 15 min feedback time from the group
Lunch	
1.5-2 h	Participants' teaching mini-sessions
Break	
0,75-1 h	Participants' teaching mini-sessions
0.5 h	Evening reflection: freeflow impressions from the teaching mini-sessions

DAY 5: Teaching mini-sessions part 2 & Wrap up

Length	SESSION title + Activity plan
1.5-2 h	Participants' teaching mini-sessions
Break	
1-1.5 h	Participants' teaching mini-sessions
Lunch	
0.5-1 h	Going into evaluation <ul style="list-style-type: none"> • Coming back to the self-assessment filled on the first day, adjusting it • Introducing the follow-up task after the on-site training
1-1.5 h	Time for all the unanswered questions
Break	
1 h	Final feedback activities and closing



¹⁶ The time schedule on the two last days depends on the number of participants and the number of teaching sessions

ANNEX 2: EXAMPLE QUESTIONS FOR THE PRE- AND POST-TASK OF THE TRAINING COURSE

Pre-task: individual teaching analysis assignment

1. Watch [this video](#) and write down any questions that you have about its content. Did something surprise you? Why?
2. What kind of bad and/or good learning-related surprises have you experienced in your teaching – i.e when something that you didn't expect happened? What did you learn from it?
3. Who are the main target groups in your local or national context, who are crucial for moving towards zero waste policies and practices? Give reasons for your choices.
4. In your opinion, what are the main zero waste skills and knowledge we need to teach to that target group?
5. What are the main things you take into account when planning an educational session?
6. What are the reasons why you think people don't learn or don't understand the topics you teach sometimes?
7. In which teaching areas/skills/knowledge would you want to get better?
8. Prepare a plan for a 1.5 h long educational zero waste workshop. You can pick your audience and specific topic. Make two plans – one as your ideal version of teaching activity and one as awful as possible (not in an absurd sense, but something that is, in your opinion, often done badly in education).

Post-task: analysis of a training activity

1. Describe briefly the teaching activity (how long was it, who were the participants, was it one-time meeting or one in a series, what was the topic, what were the main exercises you gave for the participants).
2. What did you want the participants to start thinking about (during the session)?
3. Did you activate learners' pre-knowledge? If so, please explain how.
4. Did you make the learners construct their own new knowledge? If so, please explain how.
5. What was your target learning outcome of the activity (the result after the session)?
6. Did you reach that goal? How do you know it, how did you measure it?
7. Give some examples of supporting the 3 basic psychological needs of the learners in the activity. As this is often difficult to achieve at all times, did you notice any moments when you didn't manage to do that?

8. Did you set a specific teaching/learning goal for yourself? E.g. trying to test some new way of teaching, something that you learned at the Trainers' on-site training? Did you do something differently from how you would have done it before the Trainers' on-site training?
9. Sometimes our teaching activities don't go as we plan, the learners do something we didn't expect, we feel our plan didn't work. Did you have any of these kinds of moments and what did you learn from it? What would you do differently the next time and why?
10. Have you identified any knowledge or skills or something else you wished you could have learned from the Trainers' on-site training?
11. Any other comments, feelings, observations that you would like to share regarding your teaching journey after the Trainers on-site training.

ANNEX 3: EXAMPLE FINAL INTERVIEW QUESTIONS

Catch up and meeting debriefing

Provide introduction to the purpose, length and format of the interview

- Q1. How have you been? How's life etc? (warm up)
- Q2. If and what goal(s) did you set yourself during this process of becoming a 'Zero Waste Trainer?' Do you feel you are on track to achieve this goal? Please explain why.
- Q3. Have there been any other significant factors in your life that have either helped or held you back in the Zero Waste Trainer work? You can reply yes/no and only give an explanation if you wish. *(We are asking this because we are also mapping the conditions that could support our trainings)*
- Q4. *Feedback to the training evaluation the learner has submitted, specific to each learner and their responses. Starting question to all: If and how was this task helpful for you?*

Scenario-based evaluation

"These are hypothetical questions designed to test your knowledge and understanding of teaching principles"

- Q5. You are at a conference. During lunch break you start chatting with a cafe owner, who proudly tells you that they are now plastic free and have switched to biodegradable plastic take-away dishes and cutlery. What are your first thoughts on how to respond to her/him?
- Q6. You are asked to give a 2h training session to a bank on zero waste – what they can do at the office, in their events, in everyday life. Describe your first thoughts on how you prepare and set up this session.

Q7. You were invited by the environment officer to give a 1.5h session at a municipality, with the aim to educate all the municipality staff on zero waste. You know that some people are quite enthusiastic about the topic, while there are also some old school skeptics. What are your initial thoughts on how to start your session and what to try to keep in mind during the session while communicating with your audience?

Self-reflection thoughts/questions

Q8. If and how have you put into practice the things learned at the on-site training event?

Q9. How do you evaluate your own learning? What have you learned (have gotten better at) about learning and teaching, where do you see your biggest challenge?

Q10. How and what do you want to continue learning in this field (in 2022)?

Q11. What have you tried from the on-site training event, but hasn't worked in real life?

Q12. Do you have any questions or comments for us?

