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D4.2.1 GUIDELINES FOR TEACHERS FOR CURRICULUM IMPLEMENTATION

Deliverable Number:	**D.4.2.1**
WP related to the Deliverable:	**4**
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1. ABSTRACT:

This document reports on the activities carried out in T4.2 and then presents the main results of these activities as Annexes, which all together compose the Guidelines for Teachers for Curriculum Implementation.

The guidelines will contain indications and methodological recommendations for teachers on how to use and customize the tools proposed by the project, as well as how to identify the most adequate teaching and learning methods for the delivery of the activities

2. KEYWORDS:

Teachers Guidelines, Lesson Plan, Training Pattern, CGE Curriculum

3. REVIEWERS

REVIEWER NAME	EXTERNAL REVIEWER	ORGANIZATION	DATE OF APPROVAL
John Farrell	No	RSCN	12 Aug 2022

4. VERSION HISTORY AND AUTHORS

Version	Name / Organization	Status *	Date	Provided Content/Comment/ Summary of Changes
1	Serena Alvino - SI4LIFE Elena Margherita Vercelli - SI4LIFE	A	February 2022	Preparatory work on T4.2, first template for D4.2.1.
2	Serena Alvino - SI4LIFE Elena Margherita Vercelli -SI4LIFE Regina Roller-Wirnsberger – MUG Carolin Herzog – MUG	A	08/03/2022	Online meeting to define lesson plans and training patterns
3	Serena Alvino - SI4LIFE Elena Margherita Vercelli -SI4LIFE	A	11/03/2022	Release of the table "Pilot leaders' competences for lesson plans design"
4	Serena Alvino - SI4LIFE Elena Margherita Vercelli – SI4LIFE Ana Isabel Silva- SCMA Maria Lopes da Silva - SCMA Nídia Braz – UAlg Olga Pedemonte - MARCO POLO Matilde Borriello – MARCO POLO Valentina Compiani – ITS-BACT	A	22/03/2022	Online discussion on T4.2 and explanation of the upcoming tasks (lesson plans and guidelines for teachers)

	Bart Geurden - CENTER FOR GASTROLOGY & PRIMARY FOOD CARE Edwig Goossens - CENTER FOR GASTROLOGY & PRIMARY FOOD CARE Seema Akbar - WIAB			
5	Regina Roller-Wirnsberger – MUG Carolin Herzog – MUG Ana Isabel Silva- SCMA Maria Lopes da Silva – SCMA Olga Pedemonte - MARCO POLO Matilde Borriello – MARCO POLO Roberto Solinas – MARCO POLO Simona Signorelli – MARCO POLO Lorenzo Sciarpa – MARCO POLO Girolamo Pugliese – MARCO POLO Valentina Compiani – ITS-BACT Mariapia Ponticelli - ITS-BACT	C	March – May 2022	Completion of the table "Pilot leaders' competences for lesson plans design"
6	Serena Alvino - SI4LIFE	A	24/05/2022	Template for lesson plans
7	Regina Roller-Wirnsberger – MUG Carolin Herzog – MUG Ana Isabel Silva- SCMA Maria Lopes da Silva – SCMA Olga Pedemonte - MARCO POLO Valentina Compiani – ITS-BACT Willem vanden Berg – ODISEE Jo Praet – ODISEE	C	24/05/2022 – 08/06/2022	Completion and revision of the template for a sample lesson plan
8	Serena Alvino – SI4LIFE Roberta Ferrara – SI4LIFE Elena Margherita Vercelli – SI4LIFE	A	06/06/2022	Bibliographic search for training patterns
9	Ana Isabel Silva- SCMA Maria Lopes da Silva - SCMA Nídia Braz – UAlg Inês Gago-Rodrigues – UAlg Ezequiel António Marques Pinto – UAlg Serena Alvino - SI4LIFE Carolin Herzog – MUG Olga Pedemonte - MARCO POLO Matilde Borriello – MARCO POLO Roberto Solinas – MARCO POLO Simona Signorelli – MARCO POLO Lorenzo Sciarpa – MARCO POLO Girolamo Pugliese – MARCO POLO Valentina Compiani – ITS-BACT Mariapia Ponticelli - ITS-BACT Willem vanden Berg – ODISEE Jo Praet – ODISEE Silvia N Bossio De Stefano – ODISEE	A	09/06/2022 – 10/06/2022	TPM in Portugal: Discussion, simplification of the template and distribution of the lesson plans.

	Seema Akbar - WIAB			
10	Serena Alvino - SI4LIFE Roberta Ferrara – SI4LIFE Olga Pedemonte - MARCO POLO Matilde Borriello – MARCO POLO Maria Lopes da Silva – SCMA Carolin Herzog – MUG	A	28/06/2022	Online update on lesson plans' development.
11	Joana Gomes - SCMA Ana Isabel Silva- SCMA Maria Lopes da Silva – SCMA	A	04/07/2022	Delivery of the three lesson plans assigned to them (LO3-D-1, LO6-A-B-3, LO1-C-1).
12	Matilde Borriello – MARCO POLO Simona Signorelli – MARCO POLO Lorenzo Sciarpa – MARCO POLO Girolamo Pugliese – MARCO POLO Renato Cremona – MARCO POLO	A	05/07/2022	Delivery of the three lesson plans assigned to them (LO4-C-1, LO6-D-1, LO7-A-1)
13	Stefania De Sio – ITS Valentina Compiani – ITS-BACT Mariapia Ponticelli - ITS-BACT	A	05/07/2022	Delivery of one of the three lesson plans assigned to them (LO7-C-4)
14	Regina Roller-Wirnsberger – MUG Carolin Herzog – MUG	A	06/07/2022	Delivery of the three lesson plans assigned to them (LO2-A-B-1, LO2-A-B-2, LO2-A-B-3)
15	Regina Roller-Wirnsberger – MUG Carolin Herzog – MUG	C	13/07/2022	Review of two lesson plans (LO6-D-1 and LO1-C-1)
16	Ana Isabel Silva- SCMA Maria Lopes da Silva – SCMA	C	14/07/2022	Review of two lesson plans (LO2-A-B-1 and LO7-A-1)
17	Roberta Ferrara – SI4LIFE	A	22/07/2022	Drafting of descriptive parts of the deliverable
18	Serena Alvino - SI4LIFE	A	22/07/2022	Training patterns (jigsaw and pyramid)
19	Elena Margherita Vercelli – SI4LIFE	A	26/07/2022	Drafting of descriptive parts of the deliverable and review of training patterns (jigsaw and pyramid)
20	Serena Alvino - SI4LIFE	A	26/07/2022	Training patterns (critical incident)
21	Matilde Borriello – MARCO POLO	C	26/07/2022	Review of three lesson plans (LO2-A-B-2, LO3-D-1, LO7-C-4)
22	Roberta Ferrara – SI4LIFE	A	28/07/2022	Drafting of descriptive parts of the deliverable and covers for

				lesson plans and training patterns
23	Elena Margherita Vercelli – SI4LIFE	A	28/07/2022	Drafting of descriptive parts of the deliverable and review of training patterns (critical incident)
24	Brunella Capaldo – University of Naples Federico II Valentina Compiani – ITS-BACT Mariapia Ponticelli - ITS-BACT	A	28/07/2022	Delivery of one of the three lesson plans assigned to them (LO6-D-2).
25	Serena Alvino – SI4LIFE	A	29/07/2022	Training patterns (brainstorming).
26	Regina Roller-Wirnsberger – MUG	C	29/07/2022	Review of one lesson plan (LO6-D-2).
27	Elena Margherita Vercelli – SI4LIFE	C	01/08/2022	Review of training patterns (brainstorming).
28	Valentina Compiani – ITS-BACT Mariapia Ponticelli - ITS-BACT	C	02/08/2022	Review of three lesson plans (LO4-C-1, LO2-A-B-3, L06-A-B-3).
29	Serena Alvino – SI4LIFE Elena Margherita Vercelli – SI4LIFE	A	02/08/2022	Creation and review of training patterns (WebQuest).
30	Giovanni Varcasia – C.Ri.P.A.T. Valentina Compiani – ITS-BACT Mariapia Ponticelli - ITS-BACT	A	10/08/2022	Delivery of one of the three lesson plans assigned to them (LO7-C-1).
31	Nídia Braz – UAlg	C	10/08/2022	Review of one lesson plan (LO7-C-1).
32	Roberta Ferrara – SI4LIFE Elena Margherita Vercelli – SI4LIFE	A	12/08/2022	Final review and integration of partners' contributions in D4.2.1.
33	John Farrell – RSCN	IF	12/08/2022	Internal Peer-Review of the Report
34	Serena Alvino – SI4LIFE Elena Margherita Vercelli – SI4LIFE	A	22/08/2022	Final integration after the internal review

*Status indicates if:
• A - Author (including author of revised deliverable)
• C - Contributor
• IF – Internal Feedback (within the partner organization)

5.   TABLE OF CONTENTS

6. LIST OF ABBREVIATIONS

CC	Core Competence
CGE	Chef Gastro-Engineering
ECVET	European credit system for vocational education and training
EQAVET	European Quality Assurance in Vocational Education and Training
EQF	European Qualification Framework
ESCO	European Skills/Competences, qualifications and Occupations
EU	European Union
HACCP	Hazard Analysis Critical Control Point
ISCO	International Standard Classification of Occupations
KA	Key Activity
LO	Learning Outcome
LP	Lesson Plan
M	Month
OP	Occupational Profile
PFC	Primary Food Care
TP	Training Pattern
UoL	Unit of Learning
VET	Vocational Education and Training
WHO	World Health Organization

7. EXECUTIVE SUMMARY

This document reports about the activities carried out in T4.2 and then presents the main results of these activities as Annexes, which all together compose the Guidelines for Teachers for Curriculum Implementation.

In particular:

An **Introduction** (Section 8) outlines the main target of Task 4.2 and the connections with the activities of other tasks.

Then, the **Methodology** section (Section 9) defines lesson plans and training patterns and describes how the work has been organized among partners.

Finally, the **Guidelines for Teachers for Curriculum Implementation** are presented in Section 10.

Annexes from 3 to 19 include all the Lesson Plans and Training Patterns developed in the framework of the NECTAR project.

8. INTRODUCTION

WP4 targets the development and implementation of training methodology and tools to support pilot teachers in the curriculum implementation and evaluation.

WP4 is an Implementation Work Package because it is focused on the development of Materials and Tools supporting trainers in the curriculum implementation.

In particular, T4.2 is dedicated to:

- the conceptual design and development of materials for the educational toolkit platform;
- the design of storyboards and texts for the learning modules/videos;
- the development and preparation of supporting information material (learning material and lesson plans) for the online courses
- the development of guidelines for teachers implementing the curriculum (teaching toolkit).

This deliverable is intended to report about the activities concerning the development of "Guidelines for Teachers", including Lesson Plans and Training patterns.

This specific activity has been developed in coordination with T4.4 "*pilot teacher training and participatory creation*". As described in section 0, Lesson Plans and Training patterns developed in this Task will be the main materials for teachers' training and the tools supporting the participatory creation process. The Guidelines for Teachers will support pilot site teachers and any other future teachers implementing the CGE Curriculum to create specific lessons, based on innovative methods and tools tailored to NECTAR's Curriculum Learning Outcomes.

Due to the organizational problems encountered by ODISEE with the experts supposedly involved in the Belgian Pilot design (described in detail in the Interim Report), ODISEE has not been able to contribute to this activity providing the assigned Lesson Plans. The missing lesson plans will be provided directly to any other VET providers' teachers attending the Teacher Training Course in late October. An integration of this Deliverable will then be proposed to the Agency.

The Guidelines for Teachers for Curriculum Implementation will be evaluated again by the Pilot teachers within Pilot implementation, as planned within Task 6.3 under the responsibility of UALG. The results of this evaluation will be reported within the Evaluation Report: Overall Teachers' Tools (D6.3) at the end of the project (M34).

9. METHODOLOGY

9.1 Definition of lesson plans and training patterns

The "Guidelines for Teachers" for curriculum implementation will guide pilot site teachers step-by-step in implementing the curriculum and using the planned teaching material in daily practice.

In order to provide the needed support to teachers, SI4LIFE (Task Leader) discussed with MUG (WP leader) the possible tools which could be included in the guidelines. The selected approach was to provide two main types of resources which could integrate different perspectives:

- a set of LESSON PLANS (LPs) could support future teachers in addressing the "crucial" LOs of the NECTAR Curriculum by tailoring general "templates for lessons" to localized ones. By focusing on specific LOs, they can identify:
    - o how to address the needed knowledge (outlined in LOs description) through specific educational materials and activities;

- how to address the needed skills (outlined in LOs description), also identifying some "*crucial professional steps/activities characterizing the CGE*" which should be targeted by the training in order to ensure that they will be transferred/reproduced by the student in his/her daily practice. This can then ensure the LO will be achieved;
- a set of TRAINING PATTERNS (TPs) could shape and formalize some best practices for the implementation of innovative educational strategies, which can be applied transversally to the LESSON PLANS and generally to most LOs. Such best practices may facilitate the transferability of the LESSON PLANS to regions external to the project

9.2 Work organization and distribution

The work on T4.2 started, as planned, at M16 (February 2022), when SI4LIFE scheduled an online meeting with MUG to negotiate the definition of LP and TP, which has been detailed in section (0).

The documents described below – and especially the LPs – were produced and revised with the help of four pilot sites: ITS-BACT (Italy - Campania), Marco Polo (Italy - Liguria), MUG (Austria) and SCMA (Portugal). The latter was also supported by the University of the Algarve (UALG).

As mentioned in the Introduction section, this Deliverable does not include the Lesson Plans assigned to ODISEE.

As described in Section 9.1, SI4LIFE (T4.2 leader) and MUG (WP4 leader) defined and shared with the other partners which resources could provide the best support to pilots and future teachers. Following agreement to focus on a set of LESSON PLANS and a set of TRAINING PATTERNS, a detailed plan for their development was scheduled and shared with partners.

Lesson Plans

MUG conducted an evidence-based needs assessment among the NECTAR pilot partners with the aim of identifying which learning outcomes (LOs) should be targeted by the TRAINING MATERIALS designed in T4.2. This needs assessment made it possible to identify the 'trickier' LOs of the new CGE Curriculum, namely the LOs that are more complex and difficult to manage in terms of materials because they relate to new content (e.g. the new CGE profile) or because they require the use of particular tools. Hence, SI4LIFE decided to rely on this preliminary work, starting from this subset of LOs in order to better organize the design of lesson plans.

The first step to implement this approach was to define which lesson plans could actually be developed within the project and how the work could be distributed among pilot leaders according to their staff's competences.

Therefore, SI4LIFE asked pilot leaders to identify the competences for lesson plans design (ANNEX 2 – Pilot leaders' competences for lesson plans design) indicating their level of expertise on some 'tricky' LOs. This list of LOs included those pre-selected by MUG and then integrated with six additional LOs considered 'crucial' by SI4LIFE because they are complex from the point of view of lesson organisation (e.g. because they integrate both practice and theory parts or because they require specific CGE tools). In the table, pilot leaders were asked not only to indicate for which LOs they felt experienced and competent enough to model a lesson plan, but also to specify for which LOs they felt they needed further training.

Once the above-mentioned information was collected, SI4LIFE presented it at the Consortium meeting in Algarve (8-9 June 2022) and organised a practical working session on lesson plans for pilot leaders. A template for the design of lesson plans developed by SI4LIFE was provided to pilot leaders to complete and then have this reviewed by all partners to identify criticalities and possible improvements.

During the Consortium meeting, feedback was collected and the template was simplified by the partners. Moreover, on this occasion, the competences indicated in the above-mentioned table were

reviewed and, based on these, it was decided how to distribute the lesson plans among the partners. Each pilot leader was assigned three lesson plans to be completed within the following month (M21).

To ensure the quality of each lesson plan, once partners had provided their contributions, SI4LIFE organized a cross peer review. Each pilot leader was asked to review three lesson plans produced by other partners (one for each pilot site), which were allocated taking into account – where possible – their expertise and knowledge on the subject (see Table 1)

PARTNER	LESSON PLAN 1	LESSON PLAN 2	LESSON PLAN 3
ITS-BACT	LO6-D-2 Know the chemical composition of fortified food and correctly perform fortification in meals PEER-REVIEW BY MUG	LO7-C-1 Be aware of the main roles and responsibilities of health/social care professionals in food care and work coherently, acting as a member of an interprofessional team, maximizing the added value of each professional, and identifying possibilities for interdisciplinary development and cooperation PEER-REVIEW BY SCMA	LO7-C-4 Apply creative thinking techniques developing creative solutions to abstract problems, propose solutions and discuss with goal-orientated attitude, reaching shared decisions, applying the main problem-solving techniques PEER-REVIEW BY MP
MP	LO4-C-1 Plan daily work optimizing workflow, draw up the work schedule and shifts for the kitchen team (balancing team capability) and ensure through constant monitoring that it is followed by the staff PEER-REVIEW BY ITS-BACT	LO6-D-1: Define consistency and texture of food in a creative, balanced and flavorful way PEER-REVIEW BY MUG	LO7-A-1 Define a customer satisfaction protocol and place customer service at the hearth of decision-making and activities PEER-REVIEW BY SCMA
SCMA	LO3-D-1 Know the basics of chemistry of food and combine food items in order to both respect food quality and obtain appetizing menus adapted to care settings PEER-REVIEW BY MP	LO6-A-B-3 Prepare cold and hot dishes (or supervise their preparation) according to clients´ requirements and the meal plan approved by healthcare professionals, taking into account food intolerances and allergies. PEER-REVIEW BY ITS-BACT	LO1-C-1: Identify and use local and seasonal ingredients in an appropriate way, identify local food suppliers and establish a network with them in order to guarantee constant food supply, also exploiting ICTs and dedicated e-data resources, being aware of the regional food supply chain and of how seasonal products are delivered PEER-REVIEW BY MUG
MUG	LO2-A-B-1 Understand the impact of nutrition on development of diseases and human metabolism in a life-course approach and vice versa	LO2-A-B-2 Know basics in physiology of taste/smell, be aware of how different conditions affect taste/smell and of possible clients' food intake needs with respect to taste/smell deterioration, and	LO2-A-B-3 Be aware of the main swallowing problems which raise the need for adapted food and be able to tackle these problems and conditions in daily work in

	PEER-REVIEW BY SCMA	detect these needs in collaboration with health professionals PEER-REVIEW BY MP	collaboration with health professionals PEER-REVIEW BY ITS-BACT

Table 1: Distribution of LP among partners and peer-review organization

Training Patterns

Training patterns (also known as 'pedagogical design patterns') are design-oriented schemas that "embed particular strategies or techniques in order to make good practices transferrable; they are not instantiated in a particular knowledge domain or oriented to specific targets but provide solutions to typical educational problems".[1]

SI4LIFE undertook a literature search on TPs in order to:

- identify among well-known training techniques those that could be easily adopted in the context of the NECTAR Curriculum
- create a template for the NECTAR's training patterns, taking into consideration the most suitable information to be included
- tailor the descriptions of these patterns to support both face-to-face and distance learning and provide hints about which technologies could be adopted to support both approaches, as well as about the organization of groups of students
- provide specific indications about which types of the Curriculum's LOs could be targeted through the implementation of each training pattern.

As part of this research, SI4LIFE invited comments and input from the CNR-ITD[2], the Institute for Educational Technology of the Italian National Research Council, as an expert on these issues.

SI4LIFE selected five TPs and developed them according to the needs expressed by partners and the features of the CGE curriculum. The five selected TPs are:

- JIGSAW (ANNEX 15)
- SCENARIO-BASED LEARNING - CRITICAL INCIDENT (ANNEX 16)
- WEBQUEST (ANNEX 17)
- PYRAMID (ANNEX 18)
- BRAINSTORMING (ANNEX 19)

9.3 Connections with the Online Teacher Training

Within the framework of T4.4, under the coordination of SI4LIFE, a specific course targeting teachers involved in the NECTAR's pilots, namely the **NECTAR Online Training of Trainers (NOTT),** will be set up. The course will support teachers in the implementation of innovative methods in addressing the new curriculum: the use of patterns and plans, the whole teaching toolkit, and the guidelines for curriculum implementation. Pilots' teachers will be trained in the use of the plans delivered in T4.3 and will be encouraged to adapt them to specific activities that will be implemented in pilot courses. Then, they will be introduced to the educational toolkit platform, the teaching toolkit and the guidelines for curriculum implementation.

In particular, the NOTT course will be organized into different units, as depicted in the table below (Table 2).

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[1] Alvino, S., & Trentin, G. (2012). Fostering NCL in higher education: new approaches for integrating Educational Technology Instructional Design into teachers' practice. In *Informed Design of Educational Technologies in Higher Education: Enhanced Learning and Teaching* (p. 339). IGI Global.
[2] www.itd.cnr.it

NOTT Course structure
Unit 1: NOTT Kick off
Introduction to the course (aims, structure, schedule, main activities, and tools, learning agreement, participants' assessment)
Unit 2: Learning environment
The Unit introduces the iMooX platform in general and the specific area of the NOTT. The functionalities are analyzed taking into account both the 'student' and 'teacher' perspectives.
Unit 3: Background information on the project, curriculum & contextualization into a regional/ local context for VET providing
The unit will provide an introduction to the NECTAR project and to the main design tools that pilot teachers should refer to when implementing pilot courses.
Unit 4: Lesson plans
This Unit will focus on the lesson plans developed in the framework of the NECTAR project and will provide support to teachers so that they can use them effectively.
Unit 5: Educational and learning strategies
This Unit will focus on the Training Patterns developed in the framework of the NECTAR project and will provide support to teachers so that they can use them effectively.

Table 2: NOTT Course structure

Unit 4 and Unit 5 will focus on Lesson Plans and Training Patterns. Their main characteristics and aims will be explained during an introductory webinar; then, participants will undertake Project Work, transversal to Unit 4 and Unit 5. In the Project Work, they will be asked to design a lesson based on a lesson plan and to implement a training pattern.

Lessons and materials developed by teachers during the training will be shared with the teachers of other pilots, supporting a participatory approach to the creation of course materials.

10. GUIDELINES FOR TEACHERS FOR CURRICULUM IMPLEMENTATION

The Guidelines for Teachers reported in this deliverable include **12 Lesson Plans and 5 Training Patterns.**

In Table 3, the list of the delivered Lesson Plans is outlined.

In Table 4, the list of the delivered Training Patterns is outlined.

Annex n/ Author	Lesson Plan Title
Annex 3 **ITS-BACT**	LO6-D-2 Know the chemical composition of fortified food and correctly perform fortification in meals
Annex 4 **ITS-BACT**	LO7-C-1 Be aware of the main roles and responsibilities of health/social care professionals in food care and work coherently, acting as a member of an interprofessional team, maximizing the added value of each professional, and identifying possibilities for interdisciplinary development and cooperation

Annex 5 **ITS-BACT**	LO7-C-4 Apply creative thinking techniques developing creative solutions to abstract problems, propose solutions and discuss with goal-orientated attitude, reaching shared decisions, applying the main problem-solving techniques
Annex 6 **MP**	LO4-C-1 Plan daily work optimizing workflow, draw up the work schedule and shifts for the kitchen team (balancing team capability) and ensure through constant monitoring that it is followed by the staff
Annex 7 **MP**	LO6-D-1: Define consistency and texture of food in a creative, balanced and flavorful way
Annex 8 **MP**	LO7-A-1 Define a customer satisfaction protocol and place customer service at the hearth of decision-making and activities
Annex 9 **MUG**	LO2-A-B-1 Understand the impact of nutrition on development of diseases and human metabolism in a life-course approach and vice versa
Annex 10 **MUG**	LO2-A-B-2 Know basics in physiology of taste/smell, be aware of how different conditions affect taste/smell and of possible clients' food intake needs with respect to taste/smell deterioration, and detect these needs in collaboration with health professionals
Annex 11 **MUG**	LO2-A-B-3 Be aware of the main swallowing problems which raise the need for adapted food and be able to tackle these problems and conditions in daily work in collaboration with health professionals
Annex 12 **SCMA**	LO3-D-1 Know the basics of chemistry of food and combine food items in order to both respect food quality and obtain appetizing menus adapted to care settings
Annex 13 **SCMA**	LO6-A-B-3 Prepare cold and hot dishes (or supervise their preparation) according to clients´ requirements and the meal plan approved by healthcare professionals, taking into account food intolerances and allergies.
Annex 14 **SCMA**	LO1-C-1: Identify and use local and seasonal ingredients in an appropriate way, identify local food suppliers and establish a network with them in order to guarantee constant food supply, also exploiting ICTs and dedicated e-data resources, being aware of the regional food supply chain and of how seasonal products are delivered

Table 3: Detail of the set of Lesson Plans

Annex n/ Author	Training Pattern Title	
Annex 15 Si4life	**TRAINING PATTERN 1**	JIGSAW
Annex 16 Si4life	**TRAINING PATTERN 2**	SCENARIO-BASED LEARNING - CRITICAL INCIDENT
Annex 17 Si4life	**TRAINING PATTERN 3**	WEBQUEST
Annex 18 Si4life	**TRAINING PATTERN 4**	PYRAMID
Annex 19 Si4life	**TRAINING PATTERN 5**	BRAINSTORMING

Table 4: Detail of the set of Training patterns

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ANNEX 1 – QUALITY CONTROL CHECK LIST

Quality Control Check	
Generic Minimum Quality Standards	
Document Summary provided (with adequate synopsis of contents)	Yes
Compliant with NECTAR format standards (including all relevant Logos and EU-disclaimer)	Yes
Language, grammar and spelling acceptable	Yes (some minor comments provided)
Objectives of the application form covered	Yes
Work deliverable relates to adequately covered	Yes
Quality of text is acceptable (organisation and structure, diagrams, readability)	Yes
Comprehensiveness is acceptable (no missing sections, missing references, unexplained arguments)	Yes
Usability is acceptable (deliverable provides clear information in a form that is useful to the reader)	Yes
Deliverable specific quality criteria	
Deliverable meets the 'acceptance Criteria' set out in the Quality Register:	Yes
Checklist completed and deliverable approved by Name: John Farrell Date: 12 August 2022	

ANNEX 2 – Pilot leaders' competences for lesson plans design

**aN Eu Curriculum
for chef gasTro-engineering
in primAry food caRe**

Pilot leaders' competences
for lesson plans design

Co-funded by the
Erasmus+ Programme
of the European Union

AGREEMENT NUMBER – 621707-EPP-1-2020-1-BE-EPPKA2-SSA

Premises - Task 4.2

Task 4.2 of the NECTAR project is dedicated to the instructional design and development of learning materials to support the curriculum implementation. In this task, a close collaboration with the pilot-leaders is foreseen, in order to *design the materials*.

The expected outputs of the task are:

DESIGN OF TRAINING MATERIALS targeting STUDENTS, e.g. storyboards and texts for the learning modules/videos, supporting information material (learning material and lesson plans) for the online courses, etc.
DESIGN OF LESSON PLANS targeting TEACHERS, i.e. models of lessons which can be reused by teachers in their own teachings
GUIDELINES FOR TEACHERS, i.e. patterns of pedagogical strategies/techniques which can be adopted by teachers when designing their own lessons

MUG is the WP4 and task 4.2 leader and responsible for point 1.

Under the coordination of MUG, SI4LIFE is responsible for point 2 and 3.

Pilot-leaders (ODISSEE, MP, SCMA, ITS-BACT and MUG) have to play an active part in the design of training materials, which, in this task, will be designed in English (then, they will be translated in Dutch, Italian, Portuguese and German in T4.3).

Table for lesson plans

As you all know, MUG conducted an evidence-based needs assessment among the NECTAR pilot partners with the aim of identifying which learning outcomes (LOs) should be targeted by the TRAINING MATERIALS designed in T4.2 (see above point 1). This needs assessment made it possible to identify the **'trickier' LOs** of the new CGE Curriculum.

We would like to rely on this preliminary work, starting from this subset of LOs (listed in the first column of the table below), to plan the next work on the design of lesson plans.

As we will discuss in the next online meeting, we would like to propose to shape NEACTAR's LESSON PLANS focusing more on their "contents", than on their "pedagogical approach", leaving this second part to GUIDELINES FOR TEACHERS (see above point 3). In particular, we would like to focus on LESSON PLANS which could identify some "*crucial professional steps/activities characterizing the CGE*" which should be targeted by the training (e.g. through strategies based on personal experience, simulation, role-playing, trial and error, etc.) in order to assure that they will be transferred/reproduced by the student in his/her daily practice and then the LO will be mastered.

The first step for us implementing this approach is to define **which lesson plans the project is able to develop and how we can distribute the work among pilot leaders, depending on their staff's competences.**

Taking into consideration that we will provide you with templates and dedicated support**,** we're now asking you to **mark the name of your pilot site (ODISSEE, MP, SCMA, ITS-BACT, MUG) aside the LOs in the table below (the "tricky" ones) stating:**

> on the one hand, **for which LOs your staff would be able to "model a best practice" in terms of the above described "***crucial professional steps/activities characterizing the CGE***" (column 2)；**
> on the other hand, for which LOs **you would need training and support for future teaching** (column 3).

If you think that any of the above situations mirrors your staff's competences as to a specific LO, you can let both cells empty.

Please don't hesitate to share your competences (enriching the second column): the work will be distributed equally among partners and proportionally to the estimated effort, but according to your actual competences.

Module 2: Screen, assess, and monitor on client-level	I AM ABLE TO MODEL A LESSON PLAN	I NEED TRAINING
LO2-A-B-1 Understand the impact of nutrition on development of diseases and human metabolism in a life-course approach and vice versa	MUG	
LO2-A-B-2 Know basics in physiology of taste/smell, be aware of how different conditions affect taste/smell and of possible clients' food intake needs with respect to taste/smell deterioration, and detect these needs in collaboration with health professionals	MUG	
LO2-A-B-3 Be aware of the main swallowing problems which raise the need for adapted food and be able to tackle these problems and conditions in daily work in collaboration with health professionals	MUG	SCMA MP
LO2-C-D-0 Know and understand the concepts of 'Primary Food Care", 'Gastrology' and 'Gastro-engineering' to prevent malnutrition in healthcare and to promote active and healthy ageing, is aware of the main characteristics of the CGE professional profile,		SCMA, MP, MUG

of what a "gastrological intervention" implies and of the main "gastrological tools" a CGE can rely on		
LO2-C-D-1 Identify and select test protocols on taste disturbances and use them to detect and classify taste deterioration and to monitor it		SCMA, MP, MUG
LO2-C-D-2 Create solutions for the results of assessment from a CGE perspective and within the context of a comprehensive and holistic food care approach		SCMA, MUG
LO2-C-D-3 Know the main ICT tools for screening and assessing clients' individual food preferences and individual food intake needs and wishes, be able to select the proper ones and be able to use them, complying with data privacy and confidentiality guidelines and in collaboration with health professionals		SCMA, MUG
LO2-C-D-4 Know the main ICT tools for recording and monitoring assessment results, as well as interventions, be able to select the proper ones and be able to use them, complying with legal ICT structure, addressing all data privacy and applicable confidentiality guidelines		SCMA, MUG
Module 3: **Create recipes for a general population and for people with specific needs, complying with recommendations of health professionals**	**I AM ABLE TO MODEL A LESSON PLAN**	**I NEED TRAINING**
LO3-D-1 Know the basics of chemistry of food and combine food items in order to both respect food	SCMA	MUG

quality and obtain appetizing menus adapted to care settings		
Module 4: **Manage the kitchen and coordination personnel**	**I AM ABLE TO MODEL A LESSON PLAN**	**I NEED TRAINING**
LO4-C-1 Plan daily work optimizing workflow, draw up the work schedule and shifts for the kitchen team (balancing team capability) and ensure through constant monitoring that it is followed by the staff	ITS BACT, MP	MUG
Module 6: **Use and adapt cooking techniques to the specific care setting and client**	**I AM ABLE TO MODEL A LESSON PLAN**	**I NEED TRAINING**
L06-A-B-3 Prepare cold and hot dishes (or supervise their preparation) according to clients´ requirements and the meal plan approved by healthcare professionals, taking into account food intolerances and allergies.	SCMA,	MUG
LO6-D-2 Know the chemical composition of fortified food and correctly perform fortification in meals	ITS BACT	SCMA
Module 7: **Communicate, interact and collaborate with clients and interprofessional team**	**I AM ABLE TO MODEL A LESSON PLAN**	**I NEED TRAINING**
LO7-A-1 Define a customer satisfaction protocol and place customer service at the hearth of decision-making and activities	SCMA, MP	MUG

LO7-C-1 Be aware of the main roles and responsibilities of health/social care professionals in food care and work coherently, acting as a member of an interprofessional team, maximizing the added value of each professional, and identifying possibilities for interdisciplinary development and cooperation	ITS BACT	MP
LO7-C-4 Apply creative thinking techniques developing creative solutions to abstract problems, propose solutions and discuss with goal-orientated attitude, reaching shared decisions, applying the main problem-solving techniques	ITS BACT	SCMA, MP, MUG
LO7-C-5 Exercise management and supervision in contexts of work, reviewing and developing performance of self and others	MP	MP, MUG

Since the evidence-based needs assessment conducted by MUG was focused on TRAINING MATERIALS and not on LESSON PLANS, at this initial stage we would also like to check your competences also on 6 additional LOs that, for their characteristics, according to us, are suitable to be targeted through the LESSON PLANS described above

ADDITIONAL LOs	I AM ABLE TO MODEL A LESSON PLAN	I NEED TRAINING
LO1-A-2 Identify international and national quality brands, also exploiting ICTs and dedicated e-data resources and taking into account high quality and parameters of sustainability, and take these brands into account managing suppliers		SCMA, MUG
LO1-C-1: Identify and use local and seasonal ingredients in an appropriate way, identify local food suppliers and establish a network with them in order to guarantee constant food supply, also exploiting	MP	MUG

ICTs and dedicated e-data resources, being aware of the regional food supply chain and of how seasonal products are delivered		
LO2-E-1: Know the main techniques and tool to detect clients' meal satisfaction and impressions during and after intervention(s) and be able to apply this feedback in daily practice, in collaboration with the interdisciplinary team		MUG
LO3-B-1: Collaborate to create standardized menu plans, grounded on disease adapted meals, starting from clients' needs assessment and in collaboration with health professionals		MUG
LO6-D-1: Define consistency and texture of food in a creative, balanced and flavourful way	MP	MUG
LO7-B-2: Prepare and apply client counselling, in collaboration with healthcare professionals, to promote healthy choices and behaviours		MP, MUG

ANNEX 3 – LESSON PLAN LO6-D-2

Activity coordinated by:
SI4LIFE

LESSON PLAN
LO6-D-2

Know the chemical composition of fortified food and correctly perform fortification in meals

Authors:
BRUNELLA CAPALDO - UNIVERSITY of NAPLES FEDERICO II

Co-funded by the
Erasmus+ Programme
of the European Union

Introduction

This template would allow to formalize a suggested approach to the teaching of LO6-D-2. Once completed it can be used by teachers in order to design their own lessons addressing the specific LO.

Lesson plan for LO6-D-2

<table>
<tr>
<td colspan="2" align="center">LO6-D-2

Know the chemical composition of fortified food and correctly perform fortification in meals</td>
</tr>
<tr>
<td>KNOWLEDGE

He/she is able to:

• Describe and compare different techniques for fortifying food
• Recognize how fortified food was prepared
• Describe the difference of chemical composition of fortified food and enriched food
• Describe the difference of mandatory fortification and voluntary fortification
• Describe US and EU Regulation on the addition of vitamins, minerals, and other substances to foods
• Identify specific fortification for each food to correctly combine the ingredients
• Identify the nutritional need of the added component to fortified food to determine the exact quantity of ingredient</td>
<td>SKILLS

He/she is able to:

• Select the proper technique for fortifying food to perform tasteful and balanced menu and apply them
• Evaluate dishes after consistency changes
• Apply international rules to the creation of meals</td>
</tr>
<tr>
<td colspan="2">PERSONAL AND TRANSVERSAL COMPETENCES

He/she is able to:

• Collaborate with kitchen team to ensure the meals are rightly fortified
• TAKE RESPONSIBILITY for the fortification in meals
• Work as part of a team to prepare fortification in meals
• Provide responsible explanations to teams about the necessity of the changes in the meals
•</td>
</tr>
</table>

MANDATORY OR OPTIONAL: *mandatory*

LINK TO OTHER LOs:

Preliminary to: LO6-A-B-1 and LO6-D-3
Linked to: LO6-A-B-2 LO6-D-1

EQF LEVEL: EQF4

PREPARATORY LOs

These LOs should be introduced before addressing LO6-D-2

- LO6-A-B-1 Know the main cooking techniques and select the appropriate ones for the different healthcare contexts in order to maintain the nutritional properties and maximize the nutritional value of the ingredients
- LO6-D-3 Apply creative and innovative kitchen techniques to adapt recipes for people with taste changes or consistency adjustments (including hot, cold, crisp, soft, moist, dry)

FLEXIBILITY TABLE SUGGESTIONS ABOUT EDUCATIONAL STRATEGY

Lecture: face to face or online

Individual study: face to face or online

Group work: NO

Lab: face to face

WBL: face to face

HOW TO ADDRESS THE NEEDED KNOWLEDGE (EQF 5)

CONTENTS AND MATERIALS

KNOWLEDGE TO BE ADDRESSED	RELATED CONTENTS	EDUCATIONAL MATERIALS
Describe and compare different techniques for fortifying food	Description of the main vehicles for food fortification: large-scale food fortification, biofortification and point-of-use or home fortification). The context in which these strategies are preferentially implemented are also discussed.	Olson R. et al. Food Fortification: The Advantages, Disadvantages and Lessons from Sight and Life Programs References. Nutrients 2021, 13, 1118. https://doi.org/10.3390/nu13041118 Slides
Recognise how fortified food was prepared	Description of the main commercially available fortified food and how they are prepared. Of note, the addition of vitamins and minerals to unprocessed food products (fruit, vegetables, meat, fish) and alcoholic beverages is prohibited.	
Describe the difference of chemical composition of fortified food and enriched food	Description of enriched food in which nutrients that were lost during food processing are added back (ex. certain vitamins lost in processing wheat to make white flour). Description of fortified foods in which vitamins or minerals are added to a food that originally does not contain these elements (ex. adding vitamin D to milk).	Slides

Describe the difference of mandatory fortification and voluntary fortification	Description of mandatory fortification programs regulated by the government (ex. drink water, wheat flour, edible oils, milk). Description of voluntary fortification performed by food manufactures (ex. breakfast cereals)	
Describe the impact of fortified food on human health	Describe the benefits of food fortification not only in the control and prevention of micronutrient deficiencies among vulnerable populations, but also to reduce the burden of some non-communicable chronic diseases.	Slides
Describe US and EU Regulation on the addition of vitamins, minerals, and other substances to foods	The key messages of International Guidelines are described and particular emphasis will be put on storage of fortified food to prolong their shelf-life. Attention will also be paid to the understanding of the nutritional labels. E.g. an example of a list of activities that the kitchen staff should carry out in each shift	Home Fortification Technical Advisory Group. Programmatic Guidance Brief on Use of Micronutrient Powders for Home Fortification. Available online: https://sites.unicef.org/nutrition/ (accessed on 8 September 2020) Guidelines for food fortification with micronutrients. Lindsay Allen, Bruno de Benoist, Omar Dary, Richard Hurrell Published by: World Health Organization (2006) Stable URL: https://www.jstor.org/stable/resrep35660.9
Identify specific fortification for each food to correctly combine the ingredients	E.g. a list of tools to evaluate staff capacities and a description of their main features	
Identify the nutritional need of the added component to fortified food to determine the exact quantity of ingredient	E.g. a list of tools to evaluate staff capacities and a description of their main features	Links

SUGGESTED ACTIVITIES FOR ADDRESSING THE NEEDED KNOWLEDGE (in compliance with flexibility table)

How can you share with students the needed contents?

A face-to-face lesson will deal with the contents listed in the table:

- Lab hands-on activities
- Sharing of pdf documents
- Implementation of experimental protocols

ANNEX 4 – LESSON PLAN LO7-C-1

Activity coordinated by:
SI4LIFE

LESSON PLAN
LO7-C-1

Awareness on roles and responsibilities of health/social care professionals in food care and work coherently, acting as a member of an interprofessional team (maximizing the added value of each professional, and identifying possibilities for interdisciplinary development and cooperation)

Authors:
GIOVANNI VARCASIA - C.Ri.P.A.T

Co-funded by the
Erasmus+ Programme
of the European Union

Introduction

This template would allow to formalize a suggested approach to the teaching of LO7-C-1. Once completed it can be used by teachers to design their own lessons addressing the specific LO.

Lesson plan for LO7-C-1

LO7-C-1
Be aware of the main roles and responsibilities of health/social care professionals in food care and work coherently, acting as a member of an interprofessional team, maximizing the added value of each professional, and identifying possibilities for interdisciplinary development and cooperation

KNOWLEDGE	SKILLS
He/she is able to:	He/she is able to:
• Describe in detail roles and responsibilities of the various staff members or collaborators and of health/social care professionals in food care • Understand the complexity of the hospital catering service profiles: hygienic-nutritional, gastronomic-hotel, economic-financial, administrative-managerial, communication and preventing malnutrition	• Establish cooperation with other professionals • Act as a member of an interprofessional team, maximizing the added value of each professional • Identify possibilities for interdisciplinary development and cooperation • Work at interdisciplinary projects in interdisciplinary teams. • Participate in working groups and support the monitoring of objective and measurable requirements within the framework of defined principles of quality and effectiveness

PERSONAL AND TRANSVERSAL COMPETENCES
He/she is able to:
• AUTONOMOUSLY Identify possibilities for interdisciplinary development and cooperation • Receive the nutritional information contained in the nutritional prescription (hospital and / or extra-hospital) with specification of the type of diet and the bromatological composition of the menu (common food, standard diet or therapeutic diet for specific pathologies)

MANDATORY OR OPTIONAL: *mandatory*

LINK TO OTHER LOs:

Linked to LO7-C-2

EQF LEVEL: EQF4

OTHER NOTES:

Competences related to effective teamwork are addressed by LO7-C-2

PREPARATORY LOs

These LOs should be introduced before addressing LO7-C-1

LO6-D-2: Know the chemical composition of fortified food and correctly perform fortification in meals
LO6-D-1: Prepare consistency changes in a balanced and flavourful way

LO2-A-B-2: Know basics in physiology of taste/smell, during the life course, including development and ageing, be aware of how different diseases affect taste/smell and of possible clients' needs with respect to taste/smell deterioration, and detect these needs in collaboration with health professionals

LO2-A-B-3: Be aware of the main swallowing problems or other medical conditions (e.g. Dementia, diabetes, kidney diseases) which raise the need for adapted food and be able to tackle these problems and conditions in daily work in collaboration with health professionals

LO3-D-1: Know the chemistry of food and combine food items to both respect nutritional balance and obtain appetizing menus according to national catering standard adapted to care setting

LO6-A-B-3: Prepare cold and hot dishes (or supervise their preparation) according to clients' requirements and the meal plan approved by healthcare professionals, considering food intolerances and allergies

FLEXIBILITY TABLE SUGGESTIONS ABOUT EDUCATIONAL STRATEGY

Lecture: face to face or online

Individual study: face to face or online

Group work: face to face or online

Lab: NO

WBL: face to face

HOW TO ADDRESS THE NEEDED KNOWLEDGE (EQF 5)

CONTENTS AND MATERIALS

KNOWLEDGE TO BE ADDRESSED	RELATED CONTENTS	EDUCATIONAL MATERIALS
Define, describe in detail and be critically aware of the daily processes in the kitchen	E.g. description of the daily process in the kitchen	To be decided
Describe the main elements of an effective work schedule	E.g. list of the main elements of an effective work schedule	To be decided
Describe the main criteria to balance team capability to plan effective shifts	E.g. list/description of the main criteria to balance team capability	To be decided
Understand the different capabilities and needs of kitchen team when planning work schedule and shifts	E.g. list/description of different capabilities and needs of kitchen team member	To be decided

Identify, categorize, and define the activities that the kitchen staff should carry out in each shift	E.g. an example of a list of activities that the kitchen staff should carry out in each shift	To be decided
Outline tools to evaluate staff capacities	E.g. a list of tools to evaluate staff capacities and a description of their main features	To be decided

ANNEX 5 – LESSON PLAN LO7-C-4

Activity coordinated by:
SI4LIFE

LESSON PLAN
LO7-C-4

Apply creative thinking techniques developing creative solutions to abstract problems, propose solutions and discuss with goal-orientated attitude, reaching shared decisions, applying the main problem-solving techniques

Authors:
STEFANIA DE SIO - ITS-BACT

Co-funded by the
Erasmus+ Programme
of the European Union

Introduction

This template would allow to formalize a suggested approach to the teaching of LO7-C-4. Once completed it can be used by teachers to design their own lessons addressing the specific LO.

Lesson plan for LO7-C-4

LO7-C-4
Apply creative thinking technique developing creative solutions to abstract problems, propose solutions and discuss with goal-oriented attitude, reaching shared decisions, applying the main problem-solving technique

KNOWLEDGE	ABILITY
Able to:	Able to:
• Describe the following creative thinking techniques: Brainstorming, The Insights Game, Mood boards, Random Words (Random Input), Storyboarding, Metaphorical thinking, Mind mapping. • Describe the main problem-solving techniques, such as DMAIC (Define, Measure, Analyse, Improve, Control) • Master the GOPP (Goal Oriented Project Planning)	• Select and apply the most suitable problem-solving techniques • Select and apply the most suitable creative thinking techniques • Apply the GOPP (Goal Oriented Project Planning) • Apply creative thinking techniques developing creative solutions

PERSONAL AND TRANSVERSAL SKILLS
Able to:
Be target-oriented

MANDATORY OR OPTIONAL: *mandatory*
LINK TO OTHER LOs:
This LO is transversal to many LOs of the Curriculum

EQF LEVEL: EQF5

OTHER NOTES:

Not needed when the Curriculum is adapted to EQF4

PREPARATORY LOs

These LOs should be introduced before addressing LO7-C-4

• LO7-C-1: Being aware of the main roles and responsibilities of health / social workers in food care and working coherently, acting as members of an interprofessional team, maximizing the added value of each professional and identifying interdisciplinary possibilities development and cooperation

FLEXIBILITY TABLE SUGGESTIONS ABOUT EDUCATIONAL STRATEGY

Lecture: face to face or online

Self-study: face to face or online

Group work: face to face or online

Laboratory: NO

WBL: face to face

HOW TO ADDRESS THE NEEDED KNOWLEDGE (EQF 5)

CONTENTS AND MATERIALS

KNOWLEDGE TO BE ADDRESSED	RELATED CONTENTS	EDUCATIONAL MATERIALS
Define, describe in detail and be critically aware of daily processes in the kitchen	Introduction to the DMAIC methodology and the GOPP Methodology and Tools of the Empathy and Definition phases of Design Thinking	Slides – Video – YouTube – Web – Tools Online [lesson 1-2-3]
Describe the main elements of an effective work program	Introduction to the methodology DMAIC and GOPP	Slides – Video – YouTube – Web – Tools Online [lesson 3]
Describe the main criteria for balancing the skills of the team in order to plan effective shifts	Introduction to the Design Thinking methodology and 4.0 innovations Tools and application of the phases of Design Thinking Empathy -Definition-Ideation - Prototyping -Test *(e.g. observation, scenario analysis, problem identification, definition of design thinking challenge, interviews, data collection and interpretation, brainstorming, fishbone diagram, buyer personas construction, solution planning, moodboard and storyboard; summary sheet; prototype)*	Slides – Video – YouTube – Web – Tools Online [lesson 1-2-3]

Understand the different skills and needs of the kitchen team when planning the work schedule and shifts	Introduction to Design Thinking and innovation 4.0 Tools and application of the phases of Design Thinking Empathy - Definition-Ideation - Prototyping - Test *(e.g. observation, scenario analysis, problem identification, definition of design thinking challenge, interviews, data collection and interpretation, brainstorming, fishbone diagram, buyer personas construction, solution planning, moodboard and storyboard; summary sheet; prototype)*	Slides – Video – YouTube – Web – Tools Online [lesson 1-2-3]
Identify, categorize and define the activities that the kitchen staff should perform at each shift	Introduction to the DMAIC methodology and the GOPP Methodology and Tools of the Empathy and Definition phases of Design Thinking Introduction to 4.0 technologies to bring innovative solutions to everyday activities, improving their effectiveness and efficiency and solving problems that arise in a creative and low-cost way	Slides – Video – YouTube – Web – Tools Online [lesson 1-2-3]
Outline tools for assessing staff skills	Use and application of the Design Thinking phases: Empathy, Definition/Ideation (e.g. observation, scenario analysis, problem identification, design thinking challenge definition, interviews, data collection and interpretation, brainstorming, fishbone diagram, buyer persona construction, solution planning, moodboard and storyboard)	Slides – Video – YouTube – Web – Tools Online [lesson 1-2]

SUGGESTED ACTIVITIES FOR ADDRESSING THE NEEDED KNOWLEDGE (in compliance with flexibility table)

How can you share with students the needed contents?

The lessons will deal with the contents summarized in the table above, through a slide kit and a review of materials (videos and links) containing: -The methodologies for applying the techniques of creative thinking by developing creative solutions to abstract problems, proposing solutions and discussing with a goal-oriented attitude, reaching shared decisions, applying the main problem solving techniques (Design Thinking, DMAIC, GOPP) and approaches innovative (e.g. gamification, role playing, etc.). -Examples of projects conceived and prototypes made, with a focus on those made in the food and wine supply chain The kit will also be shared via e-mail

HOW TO ADDRESS THE NEEDED SKILLS (EQF 5)

Define, describe in detail and be critically aware of daily processes in the kitchen	• Analyze a scenario through the SWOT Analysis tool • Solve problems by leveraging the creativity of Design Thinking and the outside-in logic
Describe the main elements of an effective work program	• Communicate with storytelling • Apply the DMAIC methodology • Implement GOPP schemes
Describe the main criteria for balancing the skills of the team in order to plan effective shifts	• Communicate with storytelling • Apply the DMAIC methodology • Implement GOPP schemes
Understand the different skills and needs of the kitchen team when planning the work schedule and shifts	• Solve problems by leveraging the creativity of Design Thinking and the outside-in logic • Apply the DMAIC methodology • Implement GOPP schemes
Identify, categorize and define the activities that the kitchen staff should carry out in each shift	• Solve problems by leveraging the creativity of Design Thinking and the outside-in logic • Apply the DMAIC methodology • Implement GOPP schemes
Outline tools for assessing staff skills	• Solve problems by leveraging the creativity of Design Thinking and the outside-in logic

DESCRIBE HOW THESE SKILLS CAN BE ADDRESSED

- try&learn
- peer teaching
- role playing
- brainstorming
- action-oriented
- e-learning
- mentoring/coaching
- cooperative learning
- learning by doing and by creating

ADDITIONAL HINTS ABOUT HOW TO ADDRESS PERSONAL AND TRANSVERSAL COMPETENCES

We will implement a knowledge&learning community to share interdisciplinary knowledge, ICT, multilevel approach based on the development of soft skills to strength the curriculum (i.e. problem solving, communication, collaboration, creativity, critical spirit, self-awareness, empathy).

ANNEX 6 – LESSON PLAN LO4-C-1

Activity coordinated by:
SI4LIFE

LESSON PLAN LO4-C-1

Plan daily work optimizing workflow, draw up the work schedule and shifts for the kitchen team (balancing team capability) and ensure through constant monitoring that it is followed by the staff

Authors:
RENATO CREMONA, LORENZO SCIARPA, MATILDE BORRIELLO, GIROLAMO PUGLIESE - MARCO POLO

Co-funded by the Erasmus+ Programme of the European Union

Introduction

This template would allow to formalize a suggested approach to the teaching of LO4-C-1. Once completed it can be used by teachers in order to design their own lessons addressing the specific LO.

Lesson plan for LO4-C-1

<table>
<tr><td colspan="2" align="center">LO4-C-1

Plan daily work optimizing workflow, draw up the work schedule and shifts for the kitchen team (balancing team capability) and ensure through constant monitoring that it is followed by the staff</td></tr>
<tr><td>

KNOWLEDGE

He/she is able to:

- Define, describe in detail and be critically aware of the daily processes in the kitchen
- Describe the main elements of an effective work schedule
- Describe the main criteria to balance team capability in order to plan effective shifts
- Understand the different capabilities and needs of kitchen team when planning work schedule and shifts
- Identify, categorize and define the activities that the kitchen staff should carry out in each shift
- Outline tools to evaluate staff capacities

</td><td>

SKILLS

He/she is able to:

- Draw up the work schedule and shifts, prioritizing and assigning task performances for each shift
- Design, plan and carry out the most effective work schedules while integrating personal employees' preferences
- Constantly observe and monitor the workflow of the kitchen
- Ensure dedicated tasks are correctly performed by staff

</td></tr>
</table>

PERSONAL AND TRANSVERSAL COMPETENCES

He/she is able to:

- Explain processes in plain language so staff can understand them
- TAKE RESPONSIBILITY for optimizing the workflow in the kitchen
- Set up the proper working environment

MANDATORY OR OPTIONAL: *mandatory*

LINK TO OTHER LOs:

LO7-C-1, LO7-C-2 and LO7-C-5 are fundamental to this LO.

Linked to: LO4-B-1 LO4-C-3

Preliminary to: LO4-C-2

EQF LEVEL: EQF5

OTHER NOTES:

Competences concerning leadership and teamworking are addressed by LO7-C-2

Competences concerning staff management and supervision are addressed by LO7-C-5

Competences concerning roles and responsibilities of the staff are addressed by LO7-C-1

Not necessary when the Curriculum is adapted to for EQF4.

PREPARATORY LOs

These LOs should be introduced before addressing LO4-C-2

Analyze and optimize the processes in the kitchen organization, ensuring the smooth flow of food from preparation to service through communication between the kitchen and the service department

Linked to:

LO4-B1

Identify control parameters, evaluate the quality of the kitchen team's performance, conduct employee appraisals and provide feedback to superiors

LO4-C3

Know and apply the proper leadership strategies, being able to plan work, organize tasks, and delegate to others and to develop decision-making strategies

LO7-C1

Be aware of the main roles and responsibilities of health/social care professionals in food care and work coherently, acting as a member of an interprofessional team, maximizing the added value of each professional, and identifying possibilities for interdisciplinary development and cooperation

LO7-C2

Know the characteristics of successful teams and the main strategies for overcoming barriers to effective teamwork and contextualize them in daily work

LO7-C5

Exercise management and supervision in contexts of work, reviewing and developing performance of self and others
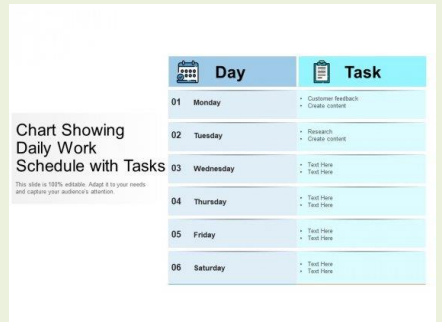
FLEXIBILITY TABLE SUGGESTIONS ABOUT EDUCATIONAL STRATEGY

Lecture: yes, preparatory to Lab (internship) activities

Individual study: yes

Group work: NO

Lab: NO

WBL: yes

Total hours LO LO4-C-1	TEACHING CLASS	TEACHING STAGE	Individual study CLASS	Individual study STAGE
10 h	4 h	1 h	1 h	4 h

HOW TO ADDRESS THE NEEDED KNOWLEDGE (EQF 4)

CONTENTS AND MATERIALS

KNOWLEDGE TO BE ADDRESSED	RELATED CONTENTS	EDUCATIONAL MATERIALS
• Define, describe in detail and be critically aware of the daily processes in the kitchen	The planning of daily work The elements that contribute to the definition of a work plan The 4 basic steps	• Draw up the work schedule and shifts, prioritizing and assigning task performances for each shift • Design, plan and carry out the most effective work schedules while integrating personal employees' preferences • Constantly observe and monitor the workflow of the kitchen • Ensure dedicated tasks are correctly performed by staff
• Describe the main elements of an effective work schedule	1 - Quantify the work hours required to achieve the planned production for each day of the week.	The daily schedule plan
• Describe the main criteria to balance team capability in order to plan effective shifts	2 - Establish the workflow for each day, to see if new resources are needed in some work hours.	• The schedule plan to observe and monitor the workflow of the kitchen
• Understand the different capabilities and needs of kitchen team when planning work schedule and shifts	3 - Establish in which work phases different professional skills are needed, understood in the different culinary areas.	• Data sheets of individual food preparations in the different culinary areas.

• Identify, categorize and define the activities that the kitchen staff should carry out in each shift		
• Outline tools to evaluate staff capacities	4 - Verify the maximum number of working hours per day-week stipulated in the contract of each worker in the field.	• Labor contracts in the restaurant industry • Tools for assessing work ability • Any specific national guidelines[3]

SUGGESTED ACTIVITIES FOR ADDRESSING THE NEEDED KNOWLEDGE (in compliance with flexibility table)

Total hour: 10 hours

Teaching stage face to face: 1 hour
Stage-Individual study: 4 hours
Teaching class: 4 hours
Individual study class: 1 hour

How can you share with students the needed contents?

A face-to-face lesson will deal with the contents listed in the table

Stage hands-on activities

Sharing of pdf documents

Implementation of experimental protocols

On-line lesson using Google G-suite

HOW TO ADDRESS THE NEEDED SKILLS (EQF 4)

Explain how to address the following competences:

Implementation of experimental protocols about consistency and texture of food

- AUTONOMOUSLY master food combination
- Collaborate with kitchen team to ensure balance and taste in dishes
- TAKE RESPONSIBILITY for the consistency changes in dishes
- Work as part of a team to prepare consistency changes in dishes
- Provide responsible explanations to teams about the necessity of the changes in the dishes

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[3] See for instance the Italian Guidelines for hospital or care catering: https://www.salute.gov.it/portale/documentazione/p6_2_2_1.jsp?id=1435&lingua=italiano

ANNEX 7 – LESSON PLAN LO6-D-1

NOTT

Activity coordinated by:
SI4LIFE

LESSON PLAN
LO6-D-1

Define consistency and texture of food in a creative, balanced and flavorful way

Authors:
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SIMONA SIGNORELLI - MARCO POLO

Co-funded by the
Erasmus+ Programme
of the European Union

Introduction

This template would allow to formalize a suggested approach to the teaching of LO6-D-1. Once completed it can be used by teachers in order to design their own lessons addressing the specific LO.

Lesson plan for LO6-D-1

LO6-D-1
Define consistency and texture of food in a creative, balanced and flavourful way

KNOWLEDGE	SKILLS
He/she is able to: • Be critically aware and describe when consistency changes are needed • Identify and describe which techniques can be used to apply consistency changes in dishes • Identify and describe how dishes can be balanced in a flavourful way • Understand and demonstrate what a balanced dish is • Understand and demonstrate how to prepare a dish with flavour • Describe all the different typology of thickeners and their different chemical composition • Describe all the different rheological characteristic for typology of thickeners	He/she is able to: • Use advanced techniques to apply consistency changes in dishes • Apply consistency changes in dishes • Enhance the flavour in dishes while ensuring it is balanced • Evaluate dishes after consistency changes on taste

PERSONAL AND TRANSVERSAL COMPETENCES

He/she is able to:
- AUTONOMOUSLY master food combination
- Collaborate with kitchen team to ensure balance and taste in dishes
- TAKE RESPONSIBILITY for the consistency changes in dishes
- Work as part of a team to prepare consistency changes in dishes
- Provide responsible explanations to teams about the necessity of the changes in the dishes

MANDATORY OR OPTIONAL: *mandatory*

LINK TO OTHER LOs:

PreliminarytoLO6-D-3
Linked to LO2-A-B-2 LO2-A-B-3 LO2-C-D-1 LO6-A-B-1 LO6-A-B-2

EQF LEVEL: EQF4

OTHER NOTES:

PREPARATORY LOs

These LOs should be introduced before addressing LO6-D-1

LO2-A-B2

Know basics in physiology of taste/smell, be aware of how different conditions affect taste/smell and of possible clients' food intake needs with respect to taste/smell deterioration, and detect these needs in collaboration with health professionals

LO2-A-B3

Be aware of the main swallowing problems which raise the need for adapted food and be able to tackle these problems and conditions in daily work in collaboration with health professionals

LO2-C-D1

Identify and select test protocols on taste disturbances and use them to detect and classify taste deterioration and to monitor it

LO6-A-B1

Know the main cooking techniques and select the appropriate ones for the different healthcare contexts in order to maintain the nutritional properties and maximize the nutritional value of the ingredients

LO6-A-B2

Use or supervise the use of established, innovative and complex preparation methods, also combining and applying various cooking methods simultaneously and developing creative solutions

FLEXIBILITY TABLE SUGGESTIONS ABOUT EDUCATIONAL STRATEGY

Lecture: yes, preparatory to lab activities

Individual study: yes

Group work: NO

Lab: face to face

WBL: yes

HOW TO ADDRESS THE NEEDED KNOWLEDGE (EQF 4)

CONTENTS AND MATERIALS

KNOWLEDGE TO BE ADDRESSED	RELATED CONTENTS	EDUCATIONAL MATERIALS
• Be critically aware and describe when consistency changes are needed	From **LO2-A-B3** In collaboration with health professionals: - the main swallowing problems - medical conditions that can affect the need for food texture modification The main goals of nutrition management in swallowing problems	Short extract of Nutritional Guidelines for Management in swallowing problems

• Identify and describe which techniques can be used to apply consistency changes in dishes	The IDDSI Framework and the common terminology to describe food textures and drink thickness: the thickeners, the thinners, the lubricants IDDSI Testing Methods : the flow or textural characteristics of a particular product, foods and drinks under the intended serving conditions (especially temperature).	Complete IDDSI Framework and Descriptors www.iddsi.org IDDSI Framework and Detailed Level Definitions (July 2019) IDDSI Testing Methods (July 2019) Evidence Statement (2016)
• Identify and describe how dishes can be balanced in a flavorful way	The balanced flavors and the basic rules behind preparing each element for creation of a Flavor Profile in the menu	Didactic material University lecture (e.g. Robino et al.) from **LO2-A-B2** Lab hands-on activities Implementation of experimental protocols
• Understand and demonstrate what a balanced dish is And their different chemical composition	The caloric and nutritional calculation of individual dishes and the entire menu	Nutrition tables and dedicated computer programs will be introduced to students.
• Understand and demonstrate how to prepare a dish with flavor • Describe all the different typology of thickeners and	The characteristics of the food to be presented: cohesiveness = the compactness of food homogeneity = the equal consistency, density and size of the bite. slipperiness = the increase in viscosity of the food with the use of fatty condiments food temperature = the preferable temperature to stimulate the perception of the bite visual aspect = color and taste of food to stimulate the appetite	Lab hands-on activities Implementation of experimental protocols either through laboratory or through work-based learning

• Describe all the different rheological characteristic for typology of thickeners	The meaning of the discipline rheology: the deformation and flow of food matter The three major categories belonging to food acceptability: Appearance Taste Touch The rheologic characteristics of the products that have both solid and liquid properties simultaneously: **Deformation** -materials most similar to solids **Sliding** -materials most similar to liquid	Rheological and mechanical properties of food University lecture (e.g. Sacchetti et al.) Lab hands-on activities Implementation of experimental protocols

SUGGESTED ACTIVITIES FOR ADDRESSING THE NEEDED KNOWLEDGE (in compliance with flexibility table)

Total hour: 25 hours

- • Teaching stage face to face: 3 hours
- • Teaching Lab face to face: 8 hours
- • Stage-Individual study: 12 hours
- • Lab individual study: 2 hours

How can you share with students the needed contents?

A face-to-face lesson will deal with the contents listed in the table

Lab hands-on activities

Sharing of pdf documents

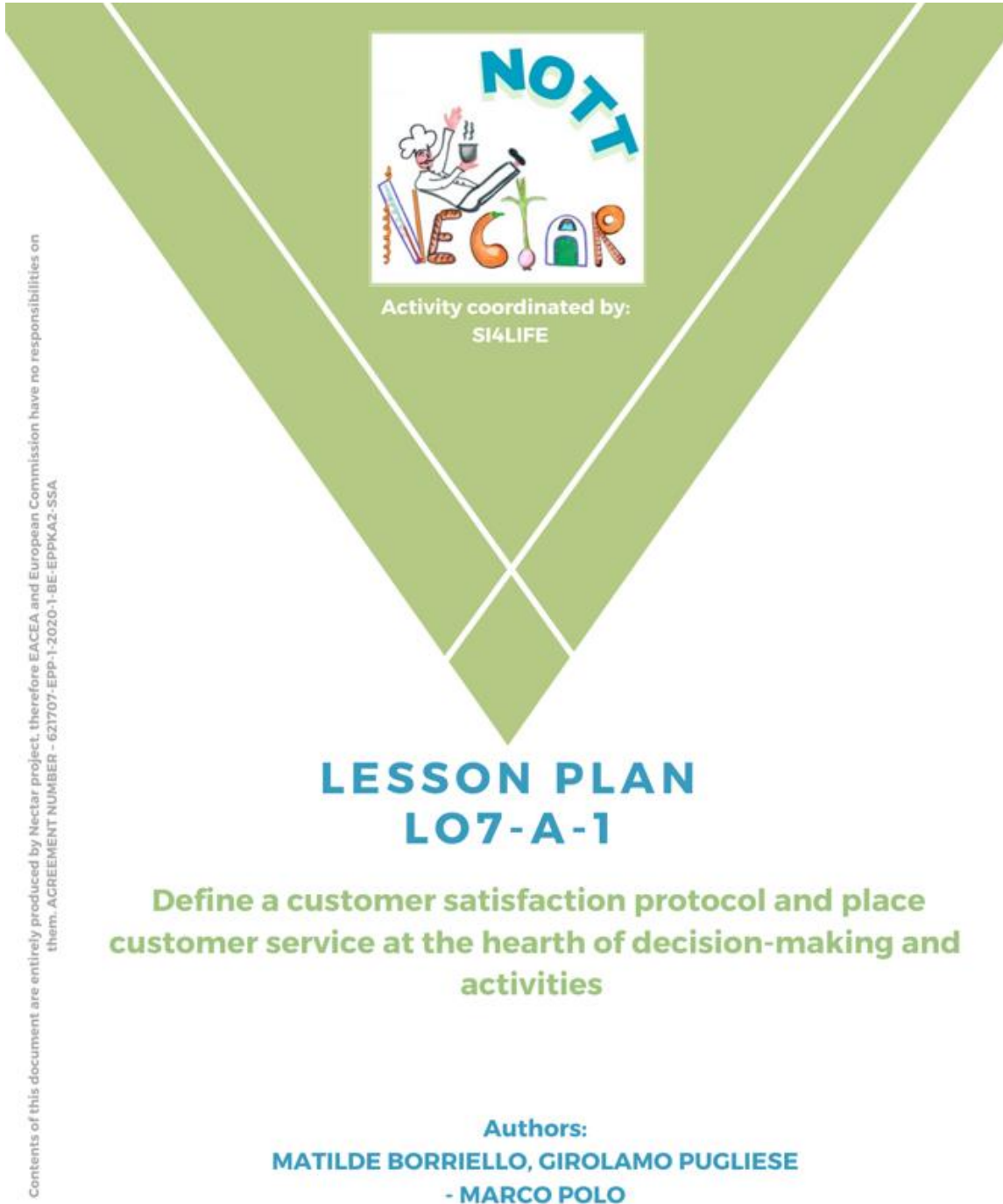Implementation of experimental protocols

On-line lesson using Google G-suite

HOW TO ADDRESS THE NEEDED SKILLS (EQF 4)

Explain how to address the following competences:

- • Implementation of experimental protocols about consistency and texture of food
  - • Master AUTONOMOUSLY food combination
  - • Collaborate with kitchen team to ensure balance and taste in dishes
  - • TAKE RESPONSIBILITY for the consistency changes in dishes
  - • Work as part of a team to prepare consistency changes in dishes
  - • Provide responsible explanations to teams about the necessity of the changes in the dishes

ANNEX 8 – LESSON PLAN LO7-A-1

NOTT
NECTAR

Activity coordinated by:
SI4LIFE

LESSON PLAN
LO7-A-1

Define a customer satisfaction protocol and place customer service at the hearth of decision-making and activities

Authors:
MATILDE BORRIELLO, GIROLAMO PUGLIESE
- MARCO POLO

Co-funded by the
Erasmus+ Programme
of the European Union

nectar

Introduction

This template would allow to formalize a suggested approach to the teaching of LO7-A-1. Once completed it can be used by teachers in order to design their own lessons addressing the specific LO.

LO7-A-1
Define a customer satisfaction protocol and place customer service at the hearth of decision-making and activities

KNOWLEDGE	SKILLS
He/she is able to:	He/she is able to:
- Recognize the different types of service and the correlation with the characteristics of the user - Outline, identify and select the main techniques and tools to design a protocol - Illustrate techniques and tools for detecting expectations and analyzing satisfaction. - Describe procedures and techniques for organizing and drafting initiatives aimed at building customer satisfaction. - Illustrate customer segmentation and clustering techniques. - Master the basic elements of CRM (Customer Relationship Management) applied to collective catering - Correlate the peculiarities of the service offer in relation to the forecast budget	- Create a protocol to detect the customer satisfactions - Compose a report describing clients' satisfaction and impression together with healthcare team - Modify recipes, menus and delivery service according to clients' satisfaction - Apply techniques of interviewing samples of privileged targets on: foods, recipes and menus (combinations) - Compare tastes and the most appropriate food according to different ages and pathologies/diesis - Detect the degree of customer satisfaction and translate the results of the surveys into product / service improvement

PERSONAL AND TRANSVERSAL COMPETENCES

He/she is able to:

- Take responsibility on cooperation with individuals in order to understand improvement of clients
- Demonstrate empathy and communication / relationship skills with specific targets
- Demonstrate a decision-making mindset

MANDATORY OR OPTIONAL: Mandatory

LINK TO OTHER LOs:

Linked to LO2-E-1

EQF LEVEL: EQF4

PREPARATORY LOs

These LOs should be linked to LO2-E1

LO2-E-1: Know the main techniques and tool to detect clients' satisfaction and impressions and be able to apply them in daily work, in collaboration with the interdisciplinary team

FLEXIBILITY TABLE SUGGESTIONS ABOUT EDUCATIONAL STRATEGY

Lecture: YES

Individual study: YES

Group work: YES

Lab: NO

WBL: NO

Total hours LO7A-1	Lecture	Individual study
12,5 h	10 h	2,5 h

HOW TO ADDRESS THE NEEDED KNOWLEDGE (EQF 4)

CONTENTS AND MATERIALS

KNOWLEDGE TO BE ADDRESSED	RELATED CONTENTS	EDUCATIONAL MATERIALS
•Describe procedures and techniques for organizing and drafting initiatives aimed at building customer satisfaction. •Recognize the different types of service and the correlation with the characteristics of the user	● Quality management system 1) ISO 9000 in 2008 a set of standards and guidelines developed by the International Organization for Standardization (ISO) The four important basic standards: 1) ISO 9000:2000 Fundamentals and terminology 2) ISO 9001:2000 Quality Management Systems Requirements 3) ISO 9004:2000 Quality Management System Performance Improvement Guidelines 4) ISO 9011 Audits	Customer Satisfaction for ISO 9001:2015 with examples (certificationmalta.com) Any specific national guidelines[4]

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[4] See for instance the Italian Guidelines for hospital or care catering: https://www.salute.gov.it/portale/documentazione/p6_2_2_1.jsp?id=1435&lingua=italiano

	- Customer satisfaction detection: - The customer feedback and turning it into performance indicators for the company in order to achieve continuous improvement over the competition. The most effective strategies: The different type of questionnaires and the right target group The most used channels to distribute questionnaires: via the Web. via e-mail, Face2Face interviews The Right Rating to express the degree of satisfaction: The value scale from 1 to 10 The measure of customer satisfaction means listening to the consumer's expectations and observations on the whole experience The translation into the concrete benefits of observations the CS: - correct the weak points of your service - measure the effectiveness of the corrective action taken on your service and assess the market response - positively influence loyalty	
•Illustrate techniques and tools for detecting expectations	From **LO2-E1** - The main tools and techniques tools to detect clients' satisfaction and impressions - The role of a good cooperation with the client to enhance the care outcome and high satisfaction	

•Outline, identify and select the main techniques and tools to design a protocol	● Create a protocol to detect the customer satisfactions	● Questionnaires for customer satisfaction[5] ● Guidelines for CS in health care[6]
• Illustrate techniques for analyzing satisfaction.	Customer Satisfaction Analysis Techniques and strategies aimed at maximizing customer satisfaction with a view to improving the service offered. Preparation of the questionnaire in order to collect the info for the evaluation of CS results; Defining the criteria for sample selection and sample size; Collection of information: The satisfaction of a user resulting from the use of a product or fruition of a service; The correspondence between the level of perceived quality and expected quality. Data processing and analysis of results ● Classification of services with respect to customer assessment	Report describing clients' satisfaction and impression together with healthcare team ● To privilege target on foods for recipes and menus (combinations) • To Compare tastes and the most appropriate food according to different ages and pathologies/diesis • To Detect the degree of customer satisfaction and translate the results of the surveys into product / service improvement ● To modify recipes, menus and delivery service according to clients' satisfaction Dedicated questionnaires
• Master the basic elements of CRM (Customer Relationship Management) applied to collective catering	The CRM: ● The database that contains all the information ● The strategy for managing all relationships with potential and existing customers Key features of a CRM system: • Contact management • Lead management • Sales forecasting • Instant messaging between employees • Email tracking and integration with Outlook and Gmail	Materials on the usefulness of Customer Experience Management (CXM)[7]

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[5] See for instance
http://www.narrareigruppi.it/index.php?journal=narrareigruppi&page=article&op=view&path%5B%5D=290
[6] See for instance these Italian resources: http://www.aslcarbonia.it/documenti/7_49_20110329102623.pdf ;
https://salute.regione.emilia-romagna.it/normativa-e-documentazione/linee-di-indirizzo/archivio-documenti-tecnici/rilevazione-della-soddisfazione-nei-servizi-per-anziani-proposte-metodologiche   ;
https://www.regione.liguria.it/homepage/salute-e-sociale/item/5531-strutture-residenziali_5531.html
[7] See for instance https://framedigitalportal.it/l-utilita-del-cxm-nel-settore-alimentare/

	• File and content sharing • Dashboard-based analytics	

SUGGESTED ACTIVITIES FOR ADDRESSING THE NEEDED KNOWLEDGE (in compliance with flexibility table)

Total hour: 12,5

- Teaching stage face to face: 10 hours
- Individual study: 2,5 hours

How can you share with students the needed contents?

A face-to-face lesson will deal with the contents listed in the table

Sharing of pdf documents

On-line lesson using Google G-suite

HOW TO ADDRESS THE NEEDED SKILLS (EQF 4)

In this case there won't be any steps or activities, but only frontal (f2f) lesson

ADDITIONAL HINTS ABOUT HOW TO ADDRESS PERSONAL AND TRANSVERSAL COMPETENCES

Explain how to address the following competences:

Implementation of experimental protocols about consistency and texture of food

- AUTONOMOUSLY master food combination
- Collaborate with kitchen team to ensure balance and taste in dishes
- TAKE RESPONSIBILITY for the consistency changes in dishes
- Work as part of a team to prepare consistency changes in dishes
- Provide responsible explanations to teams about the necessity of the changes in the dishes

ANNEX 9 – LESSON PLAN LO2-A-B-1

NOTT

Activity coordinated by:
SI4LIFE

LESSON PLAN LO2-A-B-1

Understand the impact of nutrition on development of diseases and human metabolism in a life-course approach and vice versa

Authors:
REGINA ROLLER-WIRNSBERGER,
CAROLIN HERZOG - MUG

Co-funded by the
Erasmus+ Programme
of the European Union

nectar

Introduction

This template would allow to formalize a suggested approach to the teaching of LO2-A-B-1. Once completed it can be used by teachers in order to design their own lessons addressing the specific LO.

Lesson plan for LO2-A-B-1

LO2-A-B-1
Understand the impact of nutrition on development of diseases and human metabolism in a life-course approach and vice versa

KNOWLEDGE	SKILLS
He/she is able to: • Describe the process of comprehensive needs assessments step by step • Be aware of how some common diseases can affect food (broader than nutritional) needs of clients • Describe basic food needs of older citizens and patients • Describe some common diseases affecting taste, smell and food uptake • Be aware of the consequences if individual nutritional needs of people are not met	He/she is able to:

PERSONAL AND TRANSVERSAL COMPETENCES

He/she is able to:
• Comply with scientific standards of evidence-based medicine in primary food care
• Continuously keeps up to date about new scientific nutritional treatments in primary food care
• Adopt a holistic approach
    Collaborate with healthcare team and professionals

MANDATORY OR OPTIONAL: *MANDATORY*

LINK TO OTHER LOs:

Preparatory to: LO2-A-B-2

Linked to: LO2-A-B-3 LO-C-D-1

EQF LEVEL: EQF5

OTHER NOTES:

PREPARATORY LOs

There are no preparatory LOs

FLEXIBILITY TABLE SUGGESTIONS ABOUT EDUCATIONAL STRATEGY

Lecture: face to face or online

Individual study: face to face or online

Group work: NO

Lab: NO

WBL: NO

HOW TO ADDRESS THE NEEDED KNOWLEDGE (EQF 5)

CONTENTS AND MATERIALS

KNOWLEDGE TO BE ADDRESSED	RELATED CONTENTS	EDUCATIONAL MATERIALS
Introduction of the LO (background description on clients in health and social care as well as ecosystem around them)		Agenda of the module and expected work and input from participants. Glossary as pdf document. MOOC and/or face to face ppt List of links of interest on the net
Describe the process of comprehensive needs assessments step by step	Needs Assessment Methods (when to use which) Advantages/ Disadvantages of the individual methods & a mixed-methods approach Steps of a Needs Assessment based on an example	MOOC and/or ppt for face-to-face presentation Individual study of case-based scenarios (personas of different setting, age and needs) and following discussion within the lecture
Describe basic food needs of older citizens and patients	Description of the physiological changes with older age (overview) Energy and nutrient basic requirements in old age (if necessary, comparison to requirements <65 years) Hydration in old age Special requirements (critical nutrients) and how to deal with them	MOOC and/ or ppt presentation for face-to-face class Individual case- based work and following discussion within the lecture to deepen understanding
Be aware of how some common diseases can affect food (broader than nutritional) needs of clients	Introduction on the impact of age-related changes in taste and smell on food needs	cross-linked to LO-A-B-2

	Description of the general levels on how common diseases can affect food needs (in terms of nutrients, cognitive decline, impaired movement)	MOOC and/ or ppt presentation for face-to-face classes
Describe some common diseases affecting taste, smell and food uptake	Description of common diseases in old age that critically affect food needs Eating/ Drinking and Depression Eating/ Drinking and Dementia, Parkinson's disease Eating/ Drinking and Diabetes Eating/ Drinking in chewing and swallowing disorders	cross-linked to LO-A-B-2 MOOC and/or ppt presentation for face-to-face classes MOOC or 3 short videos for self-directed learning (Depression, Dementia, Parkinson together) Diabetes and swallowing disorders separately
Be aware of the consequences, if individual nutritional needs of people are not met	Consequences of insufficient energy and nutrient intake Description of Malnutrition (overview) Consequences of Malnutrition	cross-linked to LO-A-B-2, refer to presentation on physiology and also pathophysiology of malnutrition (Micro and macronutrients) MOOC malnutrition and ppt for face to face (should be duplicated as this is a key issue in practice) MOOC and/ or ppt for face-to-face presentation, two short videos to demonstrate impact on health and functionality of clients affected

SUGGESTED ACTIVITIES FOR ADDRESSING THE NEEDED KNOWLEDGE (in compliance with flexibility table)

How can you share with students the needed contents?

A face to face or online lesson as well as the Nectar MOOC will deal with an introduction of the LO and provides an overview of contents, educational materials or rather expectations to be met by the students. In a further lesson the contents listed in the table above will be addressed by the same strategies, using personas (where appropriate) in order to illustrate typical representatives of the target group (older adults) and facilitate understanding, imagination and retentiveness.

In addition, the following documents/ papers will be distributed among the lecture (either face to face or online) or shared on local learning platforms for continuing self-learning (individual study):

- An agenda and glossary, provided at the beginning of the LO to facilitate reading and learning
- Pdf reading material - Needs Assessment Methods (types of methods, advantages/ disadvantages) and an exemplary step-by-step explanation
- Working Sheets (templates) for case-based scenarios (self-study)

As part of the lecture (face to face or online/MOOC), links to various topics will be shared in order to ensure that additional resources are made available and to further support the individual learning of students:

- Guidelines/ quality standards on nutrition in old age (ESPEN, national guidelines etc)

- Further links to related organizations dealing with ageing and malnutrition (list of links of interest), e.g. Alliance for Aging Research, National Institute on Aging etc. (references to local organisations) EuGMS, ENHA, AGE Europe, European patient alliance, BAPEN; NHS trust, EFAD etc)

HOW TO ADDRESS THE NEEDED SKILLS (EQF 5)

List the "crucial professional steps/activities characterizing the CGE" with respect to the skills addressed by this LO. They should be addressed by the training in order to assure that they will be transferred/reproduced by students in their daily practice.

➢ Not applicable - No skills described for this LO

DESCRIBE HOW THESE SKILLS CAN BE ADDRESSED

➢ Not applicable - No skills described for this LO

ADDITIONAL HINTS ABOUT HOW TO ADDRESS PERSONAL AND TRANSVERSAL COMPETENCES

- Repeated reference to relevant national guidelines/ scientific standards to underpin the process of evidence-based medicine or the evidence generation in general
- In terms of keeping up to date about scientific nutritional treatments:
  o Recommendation of links/ websites and regular access to national or international organizations or (research) institutions, dealing amongst other with nutritional treatments
  o Recommendation to subscribe to newsletters or journals, that specializes in the subject area
- Highlighting and illustrating multiprofessionalism, holism and collaboration by depicting care pathways and ecosystems

ANNEX 10 – LESSON PLAN LO2-A-B-2

NOTT

Activity coordinated by:
SI4LIFE

LESSON PLAN
LO2-A-B-2

Know basics in physiology of taste/smell, be aware of how different conditions affect taste/smell and of possible clients' food intake needs with respect to taste/smell deterioration, and detect these needs in collaboration with health professionals

Authors:
REGINA ROLLER-WIRNSBERGER,
CAROLIN HERZOG - MUG

Co-funded by the
Erasmus+ Programme
of the European Union

Introduction

This template would allow to formalize a suggested approach to the teaching of LO2-A-B-2. Once completed it can be used by teachers in order to design their own lessons addressing the specific LO.

Lesson plan for LO2-A-B-2

LO2-A-B-2
Know basics in physiology of taste/smell, be aware of how different conditions affect taste/smell and of possible clients' food intake needs with respect to taste/smell deterioration, and detect these needs in collaboration with health professionals

KNOWLEDGE	SKILLS
He/she is able to:	He/she is able to:
- Know common diseases and conditions affecting taste and smell - Understand consequences of diseases affecting taste and smell - Recognize and describe food needs of people with diseases affecting the smell and taste - Identify possible food needs of people with diseases affecting the smell and taste	- Comply with scientific standards for a culinary approach to diseases affecting taste and smell - Promote ongoing compliance with the scientific standards of treatment of taste and smell deterioration - Apply the knowledge about physiology of taste and smell in daily cooking techniques - Apply relevant standards of health needs of people with taste and smell deterioration in collaboration with health professionals - Document results of the assessment - Plan the future intervention for the of taste and smell together with health professionals

PERSONAL AND TRANSVERSAL COMPETENCES

He/she is able to:

Collaborate with other members of the interdisciplinary health team during the taste assessment of the client
Acknowledge professional boundaries of the own profession and those of other health professions

MANDATORY OR OPTIONAL: *MANDATORY*

LINK TO OTHER LOs:

Fundamental to: LO2-A-B-1

Linked to: LO2-A-B-3 LO2-C-D-1

EQF LEVEL: EQF5

OTHER NOTES: *Team working competencies are addressed in LO7-A-2 LO7-C-1 LO7-C-3*

PREPARATORY LOs

The following LO should be introduced before addressing LO2-A-B-2 since there is a direct thematic connection and some overlapping of content:

• LO2-A-B-1: Understand the impact of nutrition on development of diseases and human metabolism in a life-course approach and vice versa

FLEXIBILITY TABLE SUGGESTIONS ABOUT EDUCATIONAL STRATEGY

Lecture: face to face or online

Individual study: face to face or online

Group work: NO

Lab: face 2 face

WBL: NO

HOW TO ADDRESS THE NEEDED KNOWLEDGE (EQF 5)

CONTENTS AND MATERIALS

KNOWLEDGE TO BE ADDRESSED	RELATED CONTENTS	EDUCATIONAL MATERIALS
Introduction of the LO (Why is it important for chefs to understand the physiology of people and how it impacts health-related quality of life, Representation of the human ecosystem in different settings for illustration (hospital, nursing home, care at home)		Ice Breaker in face-to-face class asking participants for their most disgusting taste experience during a cold. Agenda of the module and expected work and input from participants. Glossary as pdf document. Short face to face lecture and/or MOOC for the background involving Feedbacks (via Mentimeter) to deepen learning
Know common diseases and conditions affecting taste and smell	• Basic physiology in taste and smell versus impaired taste and smell • Based on LO2-A-B-1 presentation of in-depth content regarding common diseases affecting taste and/or smell. • Additional supplemental content: • Special conditions and reasons affecting taste and/or smell: respiratory infections,	MOOC and/or ppt Presentation in face-to-face meeting Pdf material on the process of smell and taste Quiz at the beginning using an interactive tool (e.g. TED System, Mentimeter) to refreshen LO2-A-B-1 Input – face to face PowerPoint (ppt) presentation followed by individual case-based work and

	head injuries, smoking, other diseases… • common medication affecting taste, smell and/ or food uptake	following discussion within the lecture to deepen understanding Overflow to MOOC content offering homework (based on a pre-defined template clinically relevant diseases and known taste disturbances, will be discussed during the module) Running document for future additions of possible culinary interventions overcoming or dealing with this issue in practice.
Understand consequences of diseases affecting taste and smell	• Nutrition related consequences: based on LO2-A-B-1 presentation of in-depth content regarding Malnutrition (characteristics, forms) • Nutrition independent consequences: e.g. danger due to the lack of the sense of smell (spoiled food, fire), decreased quality of life	MOOC and/or face to face ppt presentation MOOC and/or face to face presentation
Recognize and describe food needs of people with diseases affecting the smell and taste	• Methods to measure food needs with respect to taste/smell deterioration – Assessment of taste and/ or smell impairments • Responsibilities of relevant professional groups in this process	MOOC and/or face to face ppt presentation Reading material in PDF Simulation of taste/smell assessments in a lab situation – testing the assessment method(s) on the peers (student's)
Identify possible food needs of people with diseases affecting the smell and taste	See contents line/ row above	See contents line/ row above

SUGGESTED ACTIVITIES FOR ADDRESSING THE NEEDED KNOWLEDGE (in compliance with flexibility table)

How can you share with students the needed contents?

A face to face or online lesson as well as the Nectar MOOC will deal with an introduction of the LO and provides an overview of contents, educational materials or rather expectations to be met by the students. In further lessons, the contents listed in the table above will be addressed by the same educational strategies, using personas (case-based learning) (where appropriate) in order to illustrate typical representatives of the target group (older adults) and facilitate understanding, imagination and retentiveness.

As part of the lecture (face to face or online/MOOC), additional strategies such as using interactive tools are included in order to collect feedback and test prior knowledge of students through quizzes (knowledge of previous LO).

Beside the lecture and/or MOOC content, individual mostly case-based learning and a simulation of assessment method(s) by using the educational strategy of a lab is also incorporated. The lab simulation in this context can be described as similar to an interactive workshop, offering the

opportunity to work with content provided alongside the (online or face-to-face) lecture as well as additional material.

The following documents/ papers will be distributed among the lecture (either face to face or online) or shared on local learning platforms for continuing self-learning (individual study):

- An agenda and a glossary, provided at the beginning of the LO to facilitate reading and learning
- Illustration of the process of smell and taste (physiology – graphic presentation of the primarily involved sensory organs)
- Running document for potential culinary interventions (interactive document)
- Assessment methods of taste/ smell (pdf material)
- Templates/ working sheets for case-based scenarios (self-study)

HOW TO ADDRESS THE NEEDED SKILLS (EQF 5)

List the "crucial professional steps/activities characterizing the CGE" with respect to the skills addressed by this LO. They should be addressed by the training in order to assure that they will be transferred/reproduced by students in their daily practice.

a. Learn and internalize what scientific standards are (how to work scientifically)
- Will be addressed through teaching style referencing source data and also delivering reading material
b. Promote compliance with scientific standards
- See a.) and doing homework based on individual study using templates, which force participants to communicate and argue their approach
c. Acquire knowledge in compliance with scientific standards
- See a.)
d. Implement knowledge, gained through scientific processes in collaboration with health professionals to daily cooking routines/ techniques
- Lab trainings with follow up discussions in lectures lessons
e. Monitor and document the results of introduced knowledge according to appropriate/ organizational standards in collaboration with health professionals
- Will be achieved through the design of templates used to document lab training achievements
f. Adapt or retain the intervention according to the results in collaboration with health professionals
- See e.)

DESCRIBE HOW THESE SKILLS CAN BE ADDRESSED

Work-based learning is not foreseen/ planned within the present LO

ADDITIONAL HINTS ABOUT HOW TO ADDRESS PERSONAL AND TRANSVERSAL COMPETENCES

- In terms of promoting collaboration between the interdisciplinary team:
  o Striving for patient case reviews in the multi-professional team at the beginning of the admission
  o Communication at workplace
- Create awareness of why or rather for what contents individual professional groups are important and responsible as well as recognize professional boundaries
  o Graphic representation of the relevant professions with a short description of the professional profile
  o Representation of the human ecosystem in different settings for illustration (hospital, nursing home, care at home) in the introduction section to the LO

ANNEX 11 – LESSON PLAN LO2-A-B-3

NOTT

Activity coordinated by:
SI4LIFE

LESSON PLAN
LO2-A-B-3

Be aware of the main swallowing problems which raise the need for adapted food and be able to tackle these problems and conditions in daily work in collaboration with health professionals

Authors:
REGINA ROLLER-WIRNSBERGER,
CAROLIN HERZOG - MUG

Co-funded by the
Erasmus+ Programme
of the European Union

Introduction

This template would allow to formalize a suggested approach to the teaching of LO2-A-B-3. Once completed it can be used by teachers in order to design their own lessons addressing the specific LO.

Lesson plan for LO2-A-B-3

LO2-A-B-3
Be aware of the main swallowing problems which raise the need for adapted food and be able to tackle these problems and conditions in daily work in collaboration with health professionals

KNOWLEDGE	SKILLS
He/she is able to:	He/she is able to:
• Describe the main swallowing problems	• Analyse and evaluate how clients can take in modified meals in collaboration with health professionals • Apply the right food preparation techniques to adapt food according to swallowing client's needs • Monitor food uptake in order to check effectivity of a primary food care intervention

PERSONAL AND TRANSVERSAL COMPETENCES

He/she is able to:

TAKE RESPONSIBILITY for the food modification of clients
Recognize WITH RESPONSIBILITY clients' needs for adapted food
Apply critical thinking and specialized problem-solving skills when adapting food according to swallowing client's needs

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MANDATORY OR OPTIONAL: *MANDATORY*

LINK TO OTHER LOs:

Linked to: LO2-A-B-1 LO2-A-B-2 LO2-C-D-1

Preparatory for: LO3-B-1 LO3-B-2 LO6-A-B-1 LO6-A-B-2 LO6-A-B-3 LO6-D-1 LO6-D-2 LO6-D-3

EQF LEVEL: EQF5

OTHER NOTES: *Team working competencies are addressed in LO7-A-2 LO7-C-1 LO7-C-3*

PREPARATORY LOs

There are no preparatory LOs.

FLEXIBILITY TABLE SUGGESTIONS ABOUT EDUCATIONAL STRATEGY

Lecture: face to face or online

Individual study: face to face or online

Group work: NO

Lab: face to face

WBL: face to face

HOW TO ADDRESS THE NEEDED KNOWLEDGE (EQF 5)

CONTENTS AND MATERIALS

KNOWLEDGE TO BE ADDRESSED	RELATED CONTENTS	EDUCATIONAL MATERIALS
Introduction of the LO (background on dysphagia and why consistency adjustment is important)- cross-reference (refresh LO-A-B-1 & LO-A-B-2)		Agenda of the module and expected work and input from participants. Glossary as pdf document. MOOC and/or face to face lecture
Describe the main swallowing problems	• Description of the main reasons for dysphagia • Consistency-defined diet – Consistency adjustment options • Practical tips/ suggestions for the consistency adjustment process • Main responsibilities in the process of dysphagia (diagnosis, recommendations/ therapy, implementation, monitoring)	MOOC and/ or ppt presentation for face-to-face lecture pdf material Student's working individually on a case-based scenario (persona) followed by the simulation and discussion of cases in a lab situation Work-placed training at site of occupation discussing scenarios with colleges/ other chefs to deepen understanding (template of how this training runs)

SUGGESTED ACTIVITIES FOR ADDRESSING THE NEEDED KNOWLEDGE (in compliance with flexibility table)

How can you share with students the needed contents?

A face to face or online lesson as well as the Nectar MOOC will deal with an introduction of the LO and provides an overview of contents, educational materials or rather expectations to be met by the students. In further lessons the contents listed in the table above will be addressed by the same educational strategies, using personas (case-based learning) (where appropriate) in order to illustrate typical representatives of the target group (older adults) and facilitate understanding, imagination and retentiveness.

Alongside the lecture and/or MOOC content, individual mostly case-based learning and a lab simulation is planned to demonstrate the different needs based on personas. In order to deepen knowledge and understanding work-placed learning is intended, supported by a description and template of how it should be conducted.

The following documents/ papers will be distributed among the lecture (either face to face or online) or shared on local learning platforms for continuing self-learning (individual study):

- An agenda and a glossary, provided at the beginning of the LO to facilitate reading and learning
- Pdf reading material
- Templates for case-based scenarios (personas) and following lab simulation
- Templates for work-placed trainings

HOW TO ADDRESS THE NEEDED SKILLS (EQF 5)

List the "crucial professional steps/activities characterizing the CGE" with respect to the skills addressed by this LO. They should be addressed by the training in order to assure that they will be transferred/reproduced by students in their daily practice.

- Collaborate with health professionals on a case-based foundation
- Identify the need of modified meals and required level of consistency adjustment
- Implement the appropriate food preparation technique based on the needs
- Monitoring and, if necessary, ongoing adjustment of consistency until the appropriate needs-dependent consistency is achieved

DESCRIBE HOW THESE SKILLS CAN BE ADDRESSED

If you plan Work Based Learning, describe how it will address specific skills

Work Based Learning will address skills by:

- reflective thinking in practice settings (homework)
- discussion of client scenarios with colleagues in terms of the whole professional steps/ activities
- active feedback loops between students

ADDITIONAL HINTS ABOUT HOW TO ADDRESS PERSONAL AND TRANSVERSAL COMPETENCES

- Create and promote awareness for the responsibility and role of chefs within the process of dysphagia
- Description of the main responsibilities of professional groups involved in the clinical picture/ disease pattern of swallowing problems/ dysphagia

- Graphic presentation similar to a care pathway (who recognizes dysphagia in different settings or is responsible for the diagnosis, to whom needs this information be passed on, who analyses and makes therapy recommendations and who implements it in practice)
- In terms of applying critical thinking and specialized problem-solving skills in this context:
- Presentation of a cost/ benefit analysis and description of the effects if no consistency adjustment takes place

ANNEX 12 – LESSON PLAN LO3-D-1

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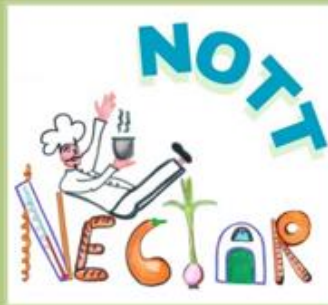
Activity coordinated by:
SI4LIFE

LESSON PLAN
LO3-D-1

LO3-D-1 n order to both respect food quality and obtain
appetizing menus adapted to care settings

Authors:
JOANA GOMES, SCMA

Co-funded by the
Erasmus+ Programme
of the European Union

Introduction

This template would allow to formalize a suggested approach to the teaching of LO4-C-1. Once completed it can be used by teachers in order to design their own lessons addressing the specific LO.

Lesson plan for LO3-D-1

LO3-D-1
Plan daily work optimizing workflow, draw up the work schedule and shifts for the kitchen team (balancing team capability) and ensure through constant monitoring that it is followed by the staff

KNOWLEDGE	SKILLS
He/she is able to: Describe the basics of chemistry of food, outline their main components and how they affect each other Know the basics about nutritional balance in meals/recipes Describe the chemical interaction and synergies among ingredients to enhance proprieties of ingredients for each tasteful preparation and equilibrate menus	He/she is able to: • Create appetizing menus adapted to care setting • Select the most appropriate combination of ingredients to reach maximum quality and nutritional value of tasteful preparation and equilibrate menus • Comply with scientific standards about nutritional balanced meals/Recipes •

PERSONAL AND TRANSVERSAL COMPETENCES

He/she is able to:

- Transfer knowledge acquired though experience
- Apply methodologies in food production AUTONOMOUSLY

MANDATORY OR OPTIONAL: *mandatory*

LINK TO OTHER LOs:

Preparatory to LO6A-B-1

LO3B-1 is fundamental to this LO

EQF LEVEL: EQF4

OTHER NOTES:

PREPARATORY LOs

These LOs should be introduced before addressing LO4-C-1

- LO7-C-1: Be aware of the main roles and responsibilities of health/social care professionals in food care and work coherently, acting as a member of an interprofessional team, maximizing the added value of each professional, and identifying possibilities for interdisciplinary development and cooperation
- LO7-C-2: Know the characteristics of successful teams and the main strategies for overcoming barriers to effective teamwork and contextualize them in daily work
- LO7-C-5: Exercise management and supervision in contexts of work, reviewing and developing performance of self and others

FLEXIBILITY TABLE SUGGESTIONS ABOUT EDUCATIONAL STRATEGY

Lecture: face to face or online

Individual study: face to face or online

Group work: face to face or online

Lab: NO

WBL: face to face

HOW TO ADDRESS THE NEEDED KNOWLEDGE (EQF 4)

CONTENTS AND MATERIALS

KNOWLEDGE TO BE ADDRESSED	RELATED CONTENTS	EDUCATIONAL MATERIALS
Describe the basics of chemistry of food, outline their main components and how they affect each other	Know the main concepts of molecular cuisine and their connection	Power point on the basics of food chemistry
Know the basics about nutritional balance in meals/recipes	Elaborate balance meals respecting the nutritional value	Food composition table[8]

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[8] See for instance
http://www2.insa.pt/sites/INSA/Portugues/AreasCientificas/AlimentNutricao/AplicacoesOnline/TabelaAlimentos/Paginas/TabelaAlimentos.aspx

Describe the chemical interaction and synergies among ingredients to reach the maximum nutritional value for each tasteful preparation and the equilibrate menus	Identify ingredients that, due to their composition, do not allow a good interconnection	Power point about chemical interaction and synergies[9]

SUGGESTED ACTIVITIES FOR ADDRESSING THE NEEDED KNOWLEDGE (in compliance with flexibility table)

How can you share with students the needed contents?

A face-to-face lesson will deal with the contents listed in the table

In addition, a power point document will be shared including:

- Chemical interaction and synergies
- Basics of chemistry

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[9] See for instance http://homepage.ufp.pt/pedros/anim_jmol/carb_jmol.htm

ANNEX 13 – LESSON PLAN LO6-A-B-3

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NECTAR

Activity coordinated by:
SI4LIFE

LESSON PLAN
LO6-A-B-3

Prepare cold and hot dishes (or supervise their preparation) according to clients´ requirements and the meal plan approved by healthcare professionals, taking into account food intolerances and allergies.

Authors:
JOANA GOMES, SCMA

Co-funded by the
Erasmus+ Programme
of the European Union

nectar

Introduction

This template would allow to formalize a suggested approach to the teaching of LO6-A-B-3. Once completed it can be used by teachers in order to design their own lessons addressing the specific LO.

Lesson plan for LO6-A-B-3

LO6-A-B-3
Prepare cold and hot dishes (and supervise their preparation) according to clients' requirements and the meal plan approved by healthcare professionals, taking into account food intolerances and allergies

KNOWLEDGE	SKILLS
He/she is able to: • Describe the differences between food intolerance and allergies • Describe the main EU rules to operate with allergic / intolerant clients (eg Reg. UE n.1169/2011), as well as the main recognized allergens • Identify alternative ingredients in the most common preparations for the allergic and intolerant population • Identify the parameters to elaborate a database about requirements and types of allergies and intolerances • Describe methods to define meal plan according to the health care indication and client requirements • Identify new cooking methods required by new ingredients needed to meet food intolerances	He/she is able to: • Prepare and cook cold and hot dishes according to clients' requirements • Supervise preparation of cold and hot dishes • Collaborate with healthcare professionals about clients' meal plans considering their food intolerances and allergies • Assure clients' requirements are always met in the meal plan • Apply the main EU rules to operate with allergic / intolerant clients • Choose the best alternative ingredient to adapt the standard recipes to obtain the best tasteful result • Support inter-professional collaboration of the multidisciplinary team while creating meal plans • Apply new cooking methods required by new ingredients needed to meet food intolerances

PERSONAL AND TRANSVERSAL COMPETENCES

He/she is able to:

• TAKE RESPONSIBILITY on clients' requirements
• TAKE RESPONSIBILITY of the preparation of cold and hot dishes in the kitchen

- Collaborate with other members of the healthcare team to create meal plans
- Support inter-professional collaboration while creating meal plans
- Dedicate proper time and dedication for discussing meal plans

MANDATORY OR OPTIONAL: *Mandatory*

LINK TO OTHER LOs:

LO3-D-1 is fundamental to this LO

Linked to: LO6-A-B-1 LO6-A-B-2 LO6-C-1 LO6-C-2 LO3-B2 LO3-B-3

EQF LEVEL: EQF5

OTHER NOTES:

Supervising the techniques is EQF5, other parts of this LO can also be considered as EQF4.

Competences related to Communication are addressed in LO7-A-2

Competences related to Teamworking are addressed in LO7-C-2

Competences considering Collaboration with healthcare professionals are addressed in LO7-C-1

PREPARATORY LOs

These LOs should be introduced before addressing LO6-A-B-3

- LO3-D-1: Know the basics of chemistry of food and combine food items in order to both respect food quality and obtain appetizing menus adapted to care settings
- LO6-A-B-1: Know the main cooking techniques and select the appropriate ones for the different healthcare contexts in order to maintain the nutritional properties and maximize the nutritional value of the ingredients
- LO6-A-B-2: Use or supervise the use of established, innovative and complex preparation methods, also combining and applying various cooking methods simultaneously and developing creative solutions
- LO6-C-1: Design menus and a la carte dishes and apply proper food preparation and cooking techniques, also developing innovative solutions, for different food forms and diets and respect cultures and religions (e.g. vegetarians, vegans, gluten-free, allergy sufferers, people with food intolerances, diabetes, hypertension, etc.)
- LO6-C-2: Recognize the model diets (vegan, vegetarian, zone diet, Mediterranean diet…) and be able to prepare dishes according to them, also developing innovative solutions and creating new combinations of ingredients
- LO3-B-2: Adjust baseline menus to satisfy individual preference and needs
- LO3-B-3: Know the effects of cooking on ingredients/raw materials and select the proper methods, maximizing the freshness and quality of the ingredients/raw materials

FLEXIBILITY TABLE SUGGESTIONS ABOUT EDUCATIONAL STRATEGY

Lecture: face to face or online

Individual study: face to face or online

Group work: face to face or online

Lab: NO

WBL: face to face

HOW TO ADDRESS THE NEEDED KNOWLEDGE (EQF 4)

CONTENTS AND MATERIALS

KNOWLEDGE TO BE ADDRESSED	RELATED CONTENTS	EDUCATIONAL MATERIALS
Describe the differences between food intolerance and allergies	Identify and know the specifics of food allergies and intolerances	Power point of food intolerance and allergies Video about people getting a food intolerance or allergies

Describe the main EU rules to operate with allergic / intolerant clients (eg Reg. UE n.1169/2011), as well as the main recognized allergens	Know the most common types of food allergies and intolerances at EU level and work with them	https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2011:304:0018:0063:PT:PDF
Identify alternative ingredients in the most common preparations for the allergic and intolerant population	Adapt and change menus so that foods that cause food allergies and intolerances can be replaced by others with the same nutritional values	Lesson about creating menus
Identify the parameters to elaborate a database about requirements and types of allergies and intolerances	Make a checklist that allows quick access to the most common intolerances and allergies in the population	Create excel sheets
Describe methods to define meal plan according to the health care indication and client requirements	Create menus and menus adapted to the health conditions of each client and to their tastes	Lesson about creating menus
Identify new cooking methods required by new ingredients needed to meet food intolerances	Use new techniques of confection that allow the food variety and a proper taste	

SUGGESTED ACTIVITIES FOR ADDRESSING THE NEEDED KNOWLEDGE (in compliance with flexibility table)

How can you share with students the needed contents?

A face-to-face lesson will deal with the contents listed in the table

In addition, a power point document will be shared including:

- list of the main of food intolerance and allergies
- List of the allergens

ANNEX 14 – LESSON PLAN LO1-C-1

Activity coordinated by:
SI4LIFE

LESSON PLAN
LO1-C-1

Identify and use local and seasonal ingredients in an appropriate way, identify local food suppliers and establish a network with them in order to guarantee constant food supply, also exploiting ICTs and dedicated e-data resources, being aware of the regional food supply chain and of how seasonal products are delivered

Authors:
JOANA GOMES, SCMA

Co-funded by the
Erasmus+ Programme
of the European Union

Introduction

This template would allow to formalize a suggested approach to the teaching of LO1-C-1. Once completed it can be used by teachers in order to design their own lessons addressing the specific LO.

Lesson plan for LO1-C-1

LO1-C-1
Identify and use local and seasonal ingredients in an appropriate way, identify local food suppliers and establish a network with them in order to guarantee constant food supply, also exploiting ICTs and dedicated e-data resources, being aware of the regional food supply chain and of how seasonal products are delivered

KNOWLEDGE	SKILLS
He/she is able to: • Compare local food suppliers among the regional food supply chain Recognize local food ingredients, identifying their proper season • Recognize best practices for seasonal food delivery • Be aware of the regional food supply chain and of how seasonal products are delivered • Define and identify (local) food seasonal prices • Explain procedures about how to establish a network with suppliers in order to guarantee constant food supply • Outline, identify and compare the main ICT channels for screening and contacting suppliers.	He/she is able to: • Identify and select the most suitable food products and suppliers according to seasonality • Select and use seasonal ingredients, ensuring constant high quality food supply at best price • Collect and organize data regarding local food suppliers, using both ICT and personal contacts • Act as a change agent and promote best recognition and use of local produce among kitchen staff

PERSONAL AND TRANSVERSAL COMPETENCES

He/she is able to:

Interact with producers and suppliers in general identify the critical points of the supply chain system and the possibilities for improvement act in staff for the management of supplies
Communicate effectively with suppliers, promoting cooperative behaviours
Interact with other members of the kitchen staff team with an open attitude

MANDATORY OR OPTIONAL: *optional*

LINK TO OTHER LOs:

LO1-B-1 and LO7-E-1 are fundamental to this LO.

Linked to LO1-A-1, LO1-A-2, LO1-C-2, LO7-E-1, LO4-A-1, LO4-A-2, LO4-A-3, LO4-A-4 LO7-E-1 and LO7-E-4

EQF LEVEL: EQF4

OTHER NOTES:

Skills for identifying, comparing, monitoring and evaluating regularly the most sustainable and high-quality food suppliers are addressed by LO1-B-1.

Basic tools supporting the creation of a data collection are addressed by LO7-E-1

The main current digital tools dedicated to food (eg. regional resources...) are addressed by LO7-E-4

Skills about how to browse, search, filter and manage data, information and digital content are addressed by LO7-E-1

Quality criteria of sustainable suppliersare addressed by LO1-B-1

PREPARATORY LOs

These LOs should be introduced before addressing LO1-C-1

- LO1-B-1: Define quality criteria of suppliers (including agri-fish-food chain) in order to identify, compare, monitor and evaluate regularly the best high-quality food suppliers
- LO7-E-1: Browse, search, filter and manage data, information and digital content, evaluating them according to the specific context of application

FLEXIBILITY TABLE SUGGESTIONS ABOUT EDUCATIONAL STRATEGY

Lecture: YES, face to face or online

Individual study: NO

Group work: YES, face to face or online

Lab: NO

WBL: YES, face to face

HOW TO ADDRESS THE NEEDED KNOWLEDGE (EQF 4)

CONTENTS AND MATERIALS

KNOWLEDGE TO BE ADDRESSED	RELATED CONTENTS	EDUCATIONAL MATERIALS
Compare local food suppliers among the regional food supply chain. Recognize local food ingredients, identifying their proper season.	Identify the differences between both of them for our needs Identify direct and indirect suppliers	Tables of regional foods and seasonality Platform of food suppliers
Be aware of the regional food supply chain and of how seasonal products are delivered	Verify the delivery and the conditions of the product	Tables of regional foods and seasonality Platform of food suppliers
Define and identify (local) food seasonal prices	Market research and the concealment of the same	Quote platform
Explain procedures about how to establish anetwork with suppliers in order to guarantee constant food supply	Guarantee fresh products and conditions according to our needs	Power point on "supply and food chain"
Outline, identify and compare the main ICT channels for screening and contacting suppliers.	Identify purchasing and product management platform	Practical lesson with platforms of food supplies

SUGGESTED ACTIVITIES FOR ADDRESSING THE NEEDED KNOWLEDGE (in compliance with flexibility table)

How can you share with students the needed contents?

A face-to-face lesson will deal with the contents listed in the table

In addition, a power point document will be shared including:

- Identify the main suppliers at the local level
- Analyse the price/quality ratio of each one

ANNEX 15 – TRAINING PATTERN 1: JIGSAW
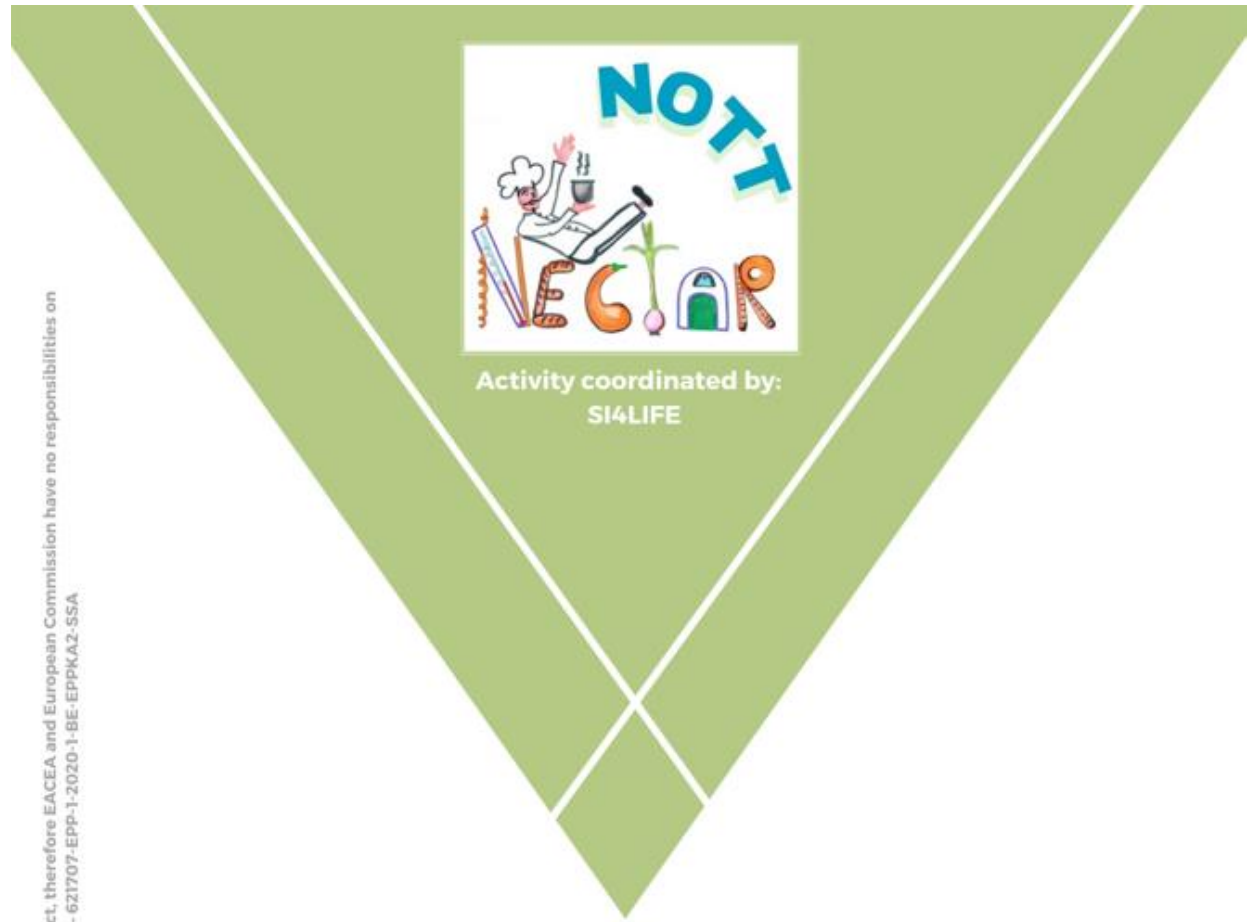
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Activity coordinated by:
SI4LIFE

JIGSAW

TRAINING PATTERN 1

Authors:
Serena Alvino, SI4LIFE

Co-funded by the
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of the European Union

nectar

TITLE

Jigsaw

GENERAL DESCRIPTION

The Jigsaw Classroom is a cooperative learning technique in which students depend on each other to succeed. The class is divided into many small groups and the teacher breaks the assignments into pieces that the group assembles to complete the "jigsaw puzzles". As a matter of fact, just as in a jigsaw puzzle, each piece (each student's part) is essential for the completion and full understanding of the final product. Thus, each student is essential and this is precisely what makes this strategy so effective.

WHEN IS IT USEFUL?

The jigsaw approach is usually chosen to deal with **multifaceted problems**, which need to be decomposed into different parts in order to be mastered more easily. It is suitable when the subject matter is particularly **complex but can be easily fragmented** or analysed from different perspectives.

It is not particularly suitable for managing big groups of students, due to the complexity of the approach.

HOW TO IMPLEMENT IT? - SUGGESTED PHASES AND TASKS

The Jigsaw approach consists in segmenting the content into a number (4-6) of complementary aspects. Once the problem content is split into different segments, each one is assigned to a group of learners ("group of experts") that will analyze it under every aspect, becoming competent on that specific matter. Once the first phase is concluded, different "jigsaw groups" containing at least one representative from each of the original expert groups will be formed. The aim of the second phase is to share the different approaches and reflect all the different facets of the problem previously studied.
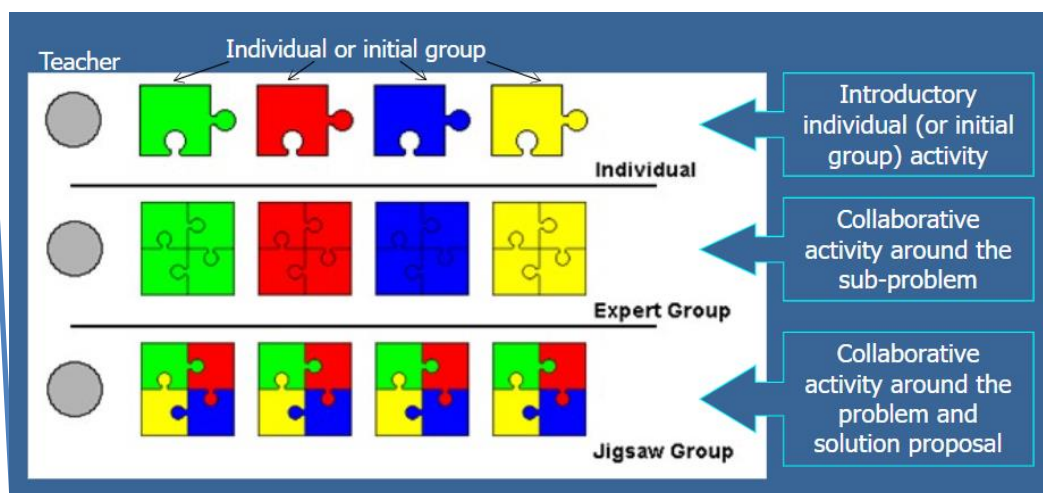

Figure 1: Graphical representation of the groups involved in a Jigsaw technique (Hernández-Leo et al, 2005)

Some practical steps can be identified in each phase.

In the **preparation phase** the trainer should:

- ✓ divide the content into 4-6 segments
- ✓ collect useful information (documents, links, etc) to analyse the content

Then, in PHASE 1 the trainer should:

- ✓ Divide students in the same number of groups, creating the so-called "*expert groups*";
- ✓ Assign each "expert group" a segment and provide them with the needed documents and information to be analysed and studied;
- ✓ Invite members of the groups to analyse individually the documents; they can also be invited to discuss the topic. The task of each expert group will be to study in depth a different aspect of a topic (or case or problem).

Finally, in PHASE 2 the trainer should:

- ✓ Create new "*jigsaw groups*" made of at least one member from each "expert group";
- ✓ Invite them to perform a task, which could be to produce, for example, written or oral presentations or other types of products, reflecting all the different facets of the problem studied in the first phase. Each jigsaw expert will bring to the group the competence acquired in the first phase and his/her contribution will be essential to produce a comprehensive result.

It can be managed both in presence (F2F) and online, with the support of the proper technologies.

If the Jigsaw activity is performed F2F, the classroom should be organized so that the different groups (both expert and jigsaw ones) can interact properly. Thus, chairs and desks should be movable. Participants should be provided with the documents on the content they have to focus on (e.g. printouts) and groups should rely on devices that allow for the collaborative production of artefacts, i.e. boards and/or computers with the needed applications.

The strength of F2F setting is the possibility to have an actual discussion involving the whole group, beyond the limits of mediated communication. To convey the energy encapsulated in the F2F class to the online modalities, a sense of community needs to be emphasized, so that students can discuss topics in a socially informed way. The anatomy of the F2F course should be emulated online by creating small groups and controlling the students' level of competence.

Online interaction may be **synchronous or asynchronous**.

A web-conferencing system could effectively support a synchronous Jigsaw activity if equipped with *break-out rooms*[10] where students can work collaboratively in smaller groups. Break-out rooms' functions can be designed to encompass jigsaw activities and thus offer opportunities for active online learning. For example, Google Meet, MS Teams, Zoom, Webex and Discord can be used to create jigsaw break-out rooms to conduct online classes with synchronous delivery mode. The tools/resources to be used in the activity, such as text documents, videos, webpages, etc., should be identified and shared beforehand.

A Jigsaw activity can also be performed asynchronously through the interaction in forums. Asynchronous discussion and collaboration need more time (3-10 days per phase depending on the theme) than "real time" ones. A forum should be created for each group, both in the first phase and in the second one, so that a person could access a forum for "experts" in the first phase and a "jigsaw" forum in the second. As in synchronous activities, the tools/resources to be employed in the activity have to be identified and shared beforehand, maybe in a repository outside the forum or in the forum itself as an "annex" to the launching message.

Time	Two Phases	
	Phase 1	**Phase 2**
Task	Individual study of the theme to cover one aspect of it	Collaborative production of an artefact (e.g. written or oral presentations or other types of

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[10] a small meeting room or a separate part of an internet meeting where a small group can discuss a particular issue before returning to the main meeting (https://dictionary.cambridge.org/)

	Collaborative production of a synthesis/presentation	products, reflecting all the different facets of the problem studied in the first phase)
Team	Expert groups (e.g. 4 small groups of 5 members)	Jigsaw groups (e.g. 5 groups containing one member for each expert group)
Classroom organization (F2F)	Movable chairs and desks; printouts of the documents; devices that allow for the collaborative production of artefacts, i.e. boards and/or computers with the needed applications	Movable chairs and desks; printouts of the documents; devices that allow for the collaborative production of artefacts, i.e. boards and/or computers with the needed applications
Needed technologies (online)	Digital resources focusing on the content

Web-conferencing – using "break out rooms" (synchronous)

or forums for online interaction (asynchronous) | Digital resources focusing on the content

Web-conferencing – using "break out rooms" (synchronous)

or forums for online interaction (asynchronous)

Text editors or software for presentations to produce the synthesis/presentation |

ADDITIONAL HINTS AND COMMENTS

The two phases of the process imply that each participant plays different roles in different situations: at the expert group level, everyone is equally responsible, while at a jigsaw level, each person is responsible for a specific segment, which requires a high degree of individual accountability. At this stage, it is essential that learners share their knowledge with their peers and this makes them understand how the individual contribution is unique and vital for the group to succeed.

An activity based on the Jigsaw technique is time-consuming: both phases need time.

If it is implemented online, it should not be the first activity of a course: people need a good degree of familiarization with their peers, the learning environment and mediated communication.

Although the group assignment can be graded or ungraded, it can be used to evaluate understanding and reward group members. This method is most likely to improve learning when used as a reward.

Examples in NECTAR context

The Jigsaw technique can be used to deal with multifaceted problems, which need to be decomposed into different parts in order to be mastered more easily, such as:

- Define the quality criteria of suppliers
- Detect clients' satisfaction and impressions after the food consumption experience in collaboration with the interdisciplinary team
- Create or compile recipes targeted for the general population taking into account cultural or religious choices and include them in a balanced and tasteful menu
- Adapt food consistency, fortification and taste according to the needs of the client
- Work in a person-centred interprofessional healthcare team and collaborate with other professionals or stakeholders.

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ANNEX 16 – TRAINING PATTERN 2: SCENARIO-BASED LEARNING - CRITICAL INCIDENT

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NECTAR

Activity coordinated by:
SI4LIFE

SCENARIO-BASED LEARNING - CRITICAL INCIDENT

TRAINING PATTERN 2

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Co-funded by the Erasmus+ Programme of the European Union

nectar

TITLE

Critical Incident analysis

GENERAL DESCRIPTION

A Critical Incident in the workplace presents a learner with a learning opportunity to reflect in and on action. The ability to recognise a learning opportunity in the workplace and learn from it is a higher-order cognitive skill that teachers and trainers should be seeking to develop in learners. Thus, there has been a growing interest in building learning activities that support groups of workers who share knowledge through reflection on critical incidents.

Workers, in their role of "learners", are invited to recognise these critical incidents as learning opportunities, to reflect on them critically and then finally share these reflections with other learners. This process situates learning in authentic learning environments where students are able to undertake work that will enable them to make a connection between the theoretical content of their courses and real-life situations.

WHEN IS IT USEFUL?

The Critical Incident analysis is valid and appropriate for developing interpersonal skills and self-awareness. It is a valuable educational technique which enables workers, in their role of "learners", to draw on past experiences and make sense of them, not only facilitating learning from professional practice but also helping to bridge the gap between theory and practice.

This technique supports a "situated learning" process: firstly, the social, interpersonal and cultural surroundings within which learning occurs affect both the learning processes and outcomes; secondly, the skills, strategies, and learning processes are seen as tightly connected to their immediate contexts of practice rather than as neutral tools available for varied general application.

Data presented in literature show evidence of participants seeking and offering comments, reflecting on critical incidents, describing what happened and assessing their own actions, making the connection between theory and practice, identifying and defining problems, and adopting a more structured and systematic approach to problem solving.

HOW TO IMPLEMENT IT? - SUGGESTED PHASES AND TASKS

A critical incident in the workplace is a singular, contextually unique and specific event that presents a learner with a learning opportunity to reflect and act on. Learners can do this by keeping "*Learning Logs*" which are "*records of the reflections on critical incidents from their workplace*". Normally, the learning log is a document based on a template defined by the trainer/teacher, which supports the formalization of the main "steps" or phases of the critical incident analysis.

A Learning Log is not a diary of events, nor is it a record of work undertaken, it is rather a personal record of the occasions when learning occurred or could have occurred. It also relates prior learning to current practice and is retrospective and reactive in action. The log records how one approaches the incident, their successes and failures with it, and any issues that need to be solved.

The critical incident analysis can be carried out in phases:

PHASE 1: IDENTIFYING A CRITICAL INCIDENT

Learners are asked to identify an incident from their workplace which they consider significant to their roles as professionals.

PHASE 2: PRESENTING THE CRITICAL INCIDENT

- ✓ Learners are asked to describe what, when, where and how the identified critical incident occurred. The description must outline the critical nature of the incident and include

references to what should or should not have been done and the learning gain derived from the incident.

- ✓ Learners are also invited to identify the special attributes or aspects of this incident that set it apart from all the others in their experience.
- ✓ Learners are finally invited to reflect on what happened to them in terms of their learning gain as professionals.

This description should be shared with a group of learners (from 3 to 8) through face-to-face or web-supported interaction. Anyway, the formalization of the description through a Learning Log document could support self-reflection and allow students to draw meaning from their experiences.

PHASE 3: DISCUSSING THE CRITICAL INCIDENT

In each group, learners are invited to discuss and comment on the Critical Incidents described by the other members of the group. Learners attempt to make insightful comments and observations about other presentations with the explicit intent of learning from the shared experience. Again, this phase can be carried out through face-to-face interaction or through web-supported interaction. The formalization and sharing of Learning Log documents in Phase 2 could support a more focused and effective analysis of the incidents, especially if the group includes many learners. After the discussion, the Learning Log can be updated by the learner including the main comments received by the other members of the group.

PHASE 4: SUMMARY: MAKING THE CONNECTION BETWEEN THEORY AND PRACTICE

The last phase aims to bring theory to bear upon practice and practice to inform theory. Learners should make the connection between what is presented to them as part of their professional education and what they are confronted with in their daily work. This process leads to a 'summary reflection' which seeks to identify:

the extent to which learners feel that the theory enabled them to cope with the critical incident they encountered at their workplace,

the adequacies and inadequacies of their theoretical knowledge,

and any enlightenment they may have gained from reflecting on the experience of their peers and from the reflections of others on their own experience.

This final summary should be formalized in the Learning Log as a compendium of the learning process.

The described training pattern can be managed both in presence (F2F) and online, with the support of the proper technologies.

Since Phase 1 and Phase 4 don't envisage collaborative tasks or interaction, they can be carried out in the classroom or at home.

The support of a Learning Log template shared by the teacher/tutor is recommended, both in the event that the activity is carried out face-to-face, and in the event that the interaction id mediated by ICTs.

The sharing of such documents at the end of Phase 2 in order to support Phase 3 can be easily facilitated by a file sharing area like Google Drive or the ones provided by the main Learning Management Systems (such as Moodle) or conferencing systems (like TEAMS). If shared by students in advance, Learning Log documents could be also distributed in printed version (each student receive a printout of the documents shared by the other learners).

The presentation of the critical incidents through Learning Logs in Phase 2 could be also accompanied by an oral presentation through a web-conferencing system.

Phase 3 can be performed at distance either synchronously or asynchronously. Web-conferencing systems could support such an interaction easily, but it is advisable with very small groups (3-4 learners). Asynchronous interaction would leave more time for reflection in this phase (a week for instance) and would allow more people (up to 8 learners) to interact about different critical incidents. A proper set up of a series of discussions in a forum area (e.g. one discussion for each analysed

critical incident) could foster an effective exchange of experience and a constructive learning process.

Time	Four Phases			
	Phase 1- IDENTIFYING A CRITICAL INCIDENT	**Phase 2 - PRESENTING THE CRITICAL INCIDENT**	**Phase 3 - DISCUSSING THE CRITICAL INCIDENT**	**Phase 4 - SUMMARY**
Task	Learners identify an incident from their workplace which they consider significant to their roles as professionals.	Learners **describe this incident** in terms of what, when, where and how it happened. Learners identify the **special attributes** or aspects of this incident that set it apart from all the others in their experience Learners reflect on what happened to them in terms of their **learning gain** as professionals	In each group, learners are invited to discuss and comment on the Critical Incidents described by the other members of the group	Elaboration (and possible formalization in a Learning Log) of a 'summary reflection'
Team	Individual learner	Small groups of students (from 3 to 8 members)	Small groups of students (from 3 to 8 members)	Individual learner
Classroom organization (F2F)	This phase can be carried out in the classroom or at home. A Learning Log template can be distributed to support the process, in digital or printed format.	Chairs should be placed in order to support interaction. If Learning Logs are available, they should be projected or shared though printouts.	Chairs should be placed in order to support interaction. If Learning Logs are available, they should be projected or shared though printouts.	This phase can be carried out in the classroom or at home.
Needed technologies (online)	A digital template of the Learning Log should be shared by the teacher/trainer Then, the learner should work	A formalization of the description in a digital Learning Log is advised. Then Learning Log could be shared through a "file sharing area". Additionally, the presentation of critical incidents can	A formalization of the description in a digital Learning Log is advised. Then Learning Log could be shared through a "file sharing area". The discussion of critical incidents can be performed	The digital template of the Learning Log should be completed by the student and shared with teacher/trainer and the other learners via the "file sharing area".

	individually to fill it in.	be performed synchronously through a Web-conferencing system.	synchronously, through a Web-conferencing system, or asynchronously, through a forum of discussion.	

ADDITIONAL HINTS AND COMMENTS

Articulation of one's thoughts or externalisation of one's ideas enable reflection, promote conceptual refinement, and a deeper understanding of the knowledge base. To facilitate genuine reflection, teachers must make time for it and then guide the learners' efforts until they become comfortable with the process and its benefits.

The formalization of a Learning Log document could support both the sharing of the experience and the learner assessment; as a matter of fact, Learning Logs are an increasingly popular mode of assessment, since they record learning, experience and reflection. They also provide the teacher with valuable information on students' learning and any gaps that may need to be addressed.

Examples in NECTAR context

The Critical Incident analysis can be widely used in the context of NECTAR's GCE Curriculum, especially when the course targets already working cooks and chefs getting a specialization in CGE.

The identification of critical incidents can be "guided" and "focused" on a specific context or topic (e.g. the identification of the proper suppliers, the interaction with other professionals, the management and coordination of kitchen staff or the proper assessment of the users' needs) or may allow the discussion of experiences on different topics. Generally, it is advisable to adopt such a technique in order to address a specific Learning Outcome, or a set of LOs corresponding to a Core Competence, such as "*to work in a person-centred interprofessional healthcare team and collaborate with other professionals or stakeholders*" and thus addressing students to identify the critical incident in a specific context of work.

Below a possible example of a template for Learning Log supporting Critical Incident analysis and an example of the same template filled in by a nursing student are presented.

An example of a template for Learning Log

PHASE ONE – Identifying Critical Incident
This log identifies a critical incident which occurred…

PHASE TWO – Presenting the Critical Incident
…….

PHASE THREE – Discussing Learning Log
…….

PHASE FOUR – Summary: Making the Connection Between Theory and Practice
Thanks to this reflection, I was able to ……

An example of Learning Log in the context of nursing training drawn from Naidu & Oliver (1999)

PHASE ONE – Identifying Critical Incident

This log identifies a critical incident which occurred whilst managing the post operative (post-op) pain of two female surgical patients. The use of Patient Controlled Analgesia (PCA) in the control of post-op pain has been analysed and compared for effectiveness amongst the two patients. This reflection which is viewed as "reflection-in-action" aims to increase my knowledge, and share findings about the nurse's role in the assessment and management of surgical patients using PCA

PHASE TWO – Presenting the Critical Incident

The introduction of PCA to the surgical arena was generally well received by nursing staff however on this particular day we were all a bit sceptical about its usefulness in controlling pain. Following a team meeting it was decided that we would observe the efficacy of PCA for a week and debrief at the following team day.

When we assessed patients such as Mrs G and Mrs H it appeared that they were both responding to the PCA in different ways. They both had abdominal hysterectomies and were of similar age. Mrs G appeared to be comfortable with her pain relief and seemed to be "coping quite well" post op. She had a good family support system and was in control of her recovery. However, Mrs H who had been quite anxious about surgery was not a happy patient. She was quite stressed and angry that she had to use a machine as if she was an "addict". The PCA team had assessed Mrs H pre op and recommended that she be placed on PCA. The collaboration between the PCA team (made up of a Surgeon and one PCA Clinical Nurse Consultant (CNC)) and the ward nurses had not been effective in the case of Mrs H. Prior to surgery Mrs H was reported by nursing staff to be anxious and needing reassurance about her surgery. She was also described as requiring extra TLC. If the psychological state of this patient had been explored, she may not have been a candidate for PCA. At the end of the day nurses concluded that they had a major role to play in the criteria being set by the PCA team for the selection of PCA patients. A new protocol was written up in the hope that nurses would be empowered to apply their knowledge and make a difference in the application of PCA.

PHASE THREE – Discussing Learning Log

It is generally agreed that PCA is more effective than the traditional methods of postoperative pain control but not automatically so. The choice of opioid, the settings chosen for demand dose and the lockout interval will greatly influence the effectiveness of this method of analgesia. Psychological variables are also important in predicting the efficacy of PCA. In the situation described above, it was concluded that Mrs H's pain was not well controlled by PCA however Mrs G's pain was. The question was how could we have managed Mrs H's pain effectively within the nursing process framework? Firstly nurses relied solely on a piece of technology to deliver pain relief without assessing Mrs H's psychological coping mechanisms and support system within her environment. Newmans's model focuses on patient care within a system in this case the lack of family/friends support should have alerted nursing staff that Mrs H would need further support and reassurance in terms of PCA. Roy's adaptation model could be applied here as well to explain the adaptation of Mrs G to the new environment. On the other hand, Mrs H was not able to cope with her new environment. She was constantly complaining about not being "helped". Orem's self care model needed to come into action and we needed to demonstrate how we wanted Mrs H to take responsibility for her pain relief by using the PCA device. Had she been able to do this on her own, her fatigue and lack of sleep would have been minimised and she could have started to "take care of herself" and hopefully feel in control. Another way to manage Mrs H could have been to complement PCA with alternative pain relief such as distraction measures and/or aromatherapy. PCA was as effective as the preloaded prescription perhaps a higher dose of opiads would have been more effective for Mrs H due to her low pain threshold. For example it has been found that some patients are unable to maintain an increased demand rate if the demand dose is small (Lechman et al., 1986). I guess from this research it is safe to say that not even PCA could overcome the deficiencies of a poor prescription. In addition a more effective education method could have ensured that the patient was confident about PCA and would not hesitate to use PCA as often as needed. On the other hand she could have been determined as not suitable for PCA and had traditional IM analgesia for pain relief.

PHASE FOUR – Summary: Making the Connection Between Theory and Practice

From this reflection I was able to change my perception about the effectiveness of PCA. The literature researched as part of this exercise confirms that PCA is an effective pain relief measure when all components of pain management are taken into consideration. The effectiveness of PCA appears to depend on continuos analgesia and/or the perception of personal control. PCA as a method which hands over the control of pain to the patient has been shown to reduce pain after surgery substantially (Graves, 1983; Notcutt, 1990).

The psychological factors associated with the effectiveness of PCA have also been researched. With respect to PCA Johnson et al. (1988), measured locus of control, with the Multidimensional Health Locus of Control Inventory (MHLC) among female patients undergoing abdominal gynaecological operations. The results showed that those with an external locus of control experienced higher pain scores and a greater degree of dissatisfaction with PCA. Thus, the

author suggests that if a patient does not acknowledge a degree of personal control and responsibility for own health, allocation to a PCA regime may prove less beneficial than more conventional methods.

Coping styles, locus of control and level of anxiety form part of the patient's behavioural assessment which nursing staff need to take into account when deciding on the benefits of PCA. However, PCA requires full patient cooperation and participation and hence education from nursing staff and allied personnel is also a major factor in its efficacy.

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ANNEX 17 – TRAINING PATTERN 3: WEBQUEST

Activity coordinated by:
SI4LIFE

WEBQUEST

TRAINING PATTERN 3

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Co-funded by the
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TITLE

WebQuest

GENERAL DESCRIPTION

According to Bernie Dodge, who conceived and named the concept[11], a WebQuest is an inquiry-oriented activity in which students get all information from the web. A WebQuest is a self-directed online exercise that leads students through the process of completing a variety of tasks leading to a final project. Teachers provide their students with the documents that include links to websites to use the information depending on the activity.

A well-crafted WebQuest is a scaffolded learning structure that uses links to essential resources on the World Wide Web and an authentic task to motivate students to investigate an open-ended question, develop individual skills and participate in a group process that transforms newly acquired information into a more sophisticated understanding.

WebQuests are alternative models of course content delivery, well suited for adult learners, which provide opportunities for higher-level thinking, problem solving and collaboration.

WHEN IS IT USEFUL?

WebQuest is based on an exploratory learning strategy: through the process of discovery, or guided discovery, the student learns facts, concepts, and procedures. The focus is on information or resources and the challenge lies in identifying resources effectively.

Scaffolding positively affects student achievement by providing "temporary frameworks to support student performance beyond their capacities"[12]. As students internalize more advanced intellectual skills through ongoing practice, the teacher can gradually remove the scaffolded levels of support. Such scaffolding is at the heart of the WebQuest model. In this sense, WebQuests aren't anything new, except for the fact that they provide a way to integrate sound learning strategies with effective use of the Web.

When students are motivated, they not only put in more effort, but their minds are more alert and ready to make connections. WebQuests use several strategies to increase student motivation:

- they use a central question that actually needs answering;
- they are given real resources to work with.

The WebQuest can be carried out **individually or collaboratively**. When possible, the collaborative dimension provides an added value to the learning process. When students take on roles within a cooperative group, they must develop expertise on a particular aspect or perspective of the topic. The fact that their teammates count on them to bring back real expertise should inspire and motivate learning.

HOW TO IMPLEMENT IT? - SUGGESTED PHASES AND TASKS

In a WebQuest students use the web to find information on a specific topic and to solve a problem posed by the teacher/trainer; but, in order to implement a WebQuest, a teacher/trainer should formalize the WebQuest in advance as a digital resource, based on a suggested template created by Dodge[13]. Teachers/trainers may choose from a number of formats (website, Power Point, Google Doc, Word Doc, printed worksheet, etc) in order to present the WebQuest to students. Anyway, the suggested components should be represented, usually as different pages of chapters of the digital resource.

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[11] Dodge, B. (1995). WebQuests: A technique for Internet-based learning. Distance Educator 1, 10–13.
[12] Cho, K., & Jonassen, D. (2002). The effects of argumentation scaffolds on argumentation and problem solving. Educational Technology Research and Development, 50(3), 5–22.
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Dodge's template identifies 6 main elements or components, which are detailed hereafter.

INTRODUCTION

A WebQuest usually starts with a brief orientation or introduction that sheds light on the background knowledge of the topics under discussion. This introduction orients the students and captures their interest, introducing them to the concepts addressed in the assignment. A WebQuest often has a story accompanying it and the introduction can be used to tell the story and give a summarized, basic description of what the student is supposed to learn.

TASK

The task page should present a formal and specific description of what the students are supposed to produce in the WebQuest, which tasks they must accomplish and/or what they are expected to learn (it must motivate and be anchored to a real-life situation).

The official WebQuest site created by Dodge (http://webquest.org/) lists a variety of *task types*, each of which has a different educational purpose. Some types are Journalistic, Mystery, Persuasion, Analytic, and Compilation (the whole list is in the table below).

WebQuest Taskonomy: A Taxonomy of Tasks (http://webquest.org/)
1. RETELLING TASKS: traditional reports, research reports, presentations and posters are used to introduce the use of the web as a source of information.
2. COMPILING RESEARCH (COMPILATION TASKS): this involves gathering information from different sources into a homogeneous work, which can be published on the web or in a non-digital format. The information needs to be reworked by rewriting the resources in different formats, depending on the selection of topics and organisation of the material.
3. SOLVING A MYSTERY (MYSTERY TASKS) - Students are involved in solving a discovery situation that may have historical, social or scientific features.
4. INVESTIGATING (JOURNALISTIC TASKS) - Students act as reporters: they must know the facts, organise and write them respecting the specific genre for the type of news investigated.
5. DESIGNING (DESIGN TASKS) - A design task requires students to generate a product that someone actually needs or a plan of action that aims at achieving a predetermined objective and works within predetermined constraints.
6. CREATIVE PRODUCT TASKS - The creative tasks in a WebQuest lead to the production of a particular type of artefact (painting, play, poster, simulated diary, song, ...). Constraints are the key to this WebQuest and revolve around historical accuracy, adherence to a particular artistic style, use of conventions, limits of scope, measure and purpose.
7. CONSENSUS BUILDING TASKS - This is a WebQuest that can be used for topics entailing controversy (news events, recent history, opposing ethical views, ...) and involves the development of a practice for conflict resolution. A well-designed consensus-building task must ensure that different viewpoints are articulated in the different perspectives that emerge from the various web resources.
8. PERSUADING (**PERSUASION TASKS**). Persuasion skills go beyond simple reporting, as they require students to develop a convincing case based on what they have learnt and to design in order to address opinions. In Dodge's 'taskonomy', examples include simulations of a city council meeting, a trial, a recorded video aimed at influencing opinions, writing a letter, an editorial, a press release or a manifesto. The strength of a well-done persuasion operation lies in identifying a plausible audience with a different or at least neutral point of view.
9. SELF-KNOWLEDGE TASKS. The aim of a self-knowledge WebQuest is to provide the learner with greater self-knowledge about long-term goals and ethical issues from a self-improvement perspective.
10. ANALYSING (ANALYTICAL TASKS). In an analytical WebQuest, one is asked to reflect on the meaning of similarities and differences, cause-effect relationships between variables, connections between facts.
11. JUDGING (JUDGMENT TASKS) – Students are presented with a series of topics that they have to rank, evaluate by making a documented decision from a limited number of choices.
12. CONDUCTING A SCIENTIFIC EXPERIMENT (SCIENTIFIC TASKS). The limitation of teaching scientific subjects is the lack of laboratory practice. The web offers a plurality of useful resources for scientific practice. Each person of the group will carry out organised research on materials pre-selected by the teacher according to his or her role, then re-process the information collected to arrive at a final product, which varies according to the task and may be a digital resource, a multimedia object, a text, etc.

The Task page clearly states what the student needs to learn by the end of the assignment.

This step defines the outcome of the students' activities. The final product must be described in detail. The task must be clear and sustainable: students must understand it and must have the prerequisites to be able to do it. Instrumental directions for completing the task can also be given at this stage.

THE PROCESS

The third step describes in detail the activities the students must perform in order to complete the task. This section must be well designed because it must provide all the necessary information.

The process should set up an individual or a cooperative/collaborative learning process; in many cases, some tasks can be performed autonomously and other cooperatively.

This page should describe:

- the work groups, the assignment of roles, specifying tasks and responsibilities.
- the work steps, as well as the order and way they have to be carried out.

A good description of this section/page will help other teachers understand how the lesson unfolds and how they might adapt it for their own use, so it is important to include details. The whole page/section is addressed to students, so their steps should be described using the second person.

> **FOR EXAMPLE**
>
> *First you'll be assigned to a team of 3 students...*
>
> *Once you've picked a role to play...*
>
> *... and so on.*

The WebQuest might also provide some guidance on how to organize the information gathered. It might suggest the use of flowcharts, summary tables, concept maps, or other organizing structures. It could also take the form of a checklist of questions with which to analyze the information, or of things to notice or think about.

The answer or solution that students' teams develop can be posted, emailed or presented to real people for feedback and evaluation. This authentic assessment also motivates students to do their best and come up with a real group answer, and not simply with something to fulfill an assignment.

RESOURCES

This fourth step involves listing all the resources useful for carrying out the task and is clearly linked to THE PROCESS section. It is important to remember that, as previously mentioned, the focus of the WebQuest is not the search for information, but its use.

Students will access the identified online resources as they go through THE PROCESS section. The WebQuest may (or may not) suggest a set of links that everyone looks at as a way of developing background information. Then, if it splits learners into groups, it should embed the links that each group will look at within the description of that stage of the process.

When applied to adult learning, WebQuest can leave more leeway to students to find the proper resources on the web. Teachers/trainers may suggest criteria for the search or suggest specific databases (e.g. scientific ones) and then leave the students free to identify the proper information. While websites are the main point with WebQuests, they are not limited to this kind of resources, but other materials can be suggested like handouts, books, magazines, or even peer-reviewed journals or scientific papers.

EVALUATION

This penultimate step is of crucial importance to grasp the repercussions of the designed WebQuest.

To be able to carry out a meaningful assessment of positive aspects and critical points, assessment grids should be shared in advance with the students. These grids should clearly outline the stages of the task and the activity to be carried out (with criteria made explicit by means of indicators) and allow students to understand which aspects to focus on. See for instance the table below.

An example of assessment grid from http://webquest.org/					
	1-beginning	**2-developing**	**3-accomplished**	**4-exemplary**	**SCORE**
Stated Objective or Performance	Description of identifiable performance characteristics reflecting a beginning level of performance	Description of identifiable performance characteristics reflecting development and movement toward mastery of performance.	Description of identifiable performance characteristics reflecting mastery of performance.	Description of identifiable performance characteristics reflecting the highest level of performance.	
Stated Objective or Performance	Description of identifiable performance characteristics reflecting a beginning level of performance	Description of identifiable performance characteristics reflecting development and movement toward mastery of performance.	Description of identifiable performance characteristics reflecting mastery of performance.	Description of identifiable performance characteristics reflecting the highest level of performance.	
Stated Objective or Performance	Description of identifiable performance characteristics reflecting a beginning level of performance	Description of identifiable performance characteristics reflecting development and movement toward mastery of performance.	Description of identifiable performance characteristics reflecting mastery of performance.	Description of identifiable performance characteristics reflecting the highest level of performance.	
……					

Such grids could support different types of assessment that can be carried out in parallel:

- *self-assessment*, which can be carried out individually by the student on the basis of the grid
- *peer-assessment*, which can be carried out for instance by asking each member of the group to rate from 1 to 5 the contribution given by other participants to the whole process
- *students' assessment performed by the teacher*, which focuses on the learning process that the student has put in place. The aim is to assess whether the objectives have been achieved and to guide possible developments.

CONCLUSION

This concluding phase summarises the activity carried out and the teaching and learning outcomes achieved. Emphasis should be placed on all disciplinary and non-disciplinary aspects learnt from the point of view of competences (both cognitive and instrumental).

The conclusion can be a short paragraph that summarizes what students should have achieved or learned by completing the WebQuest. It might also include some rhetorical questions or additional links to encourage students to extend their thinking to other content beyond this lesson.

Six elements						
Phase	**1 – Introduction**	**2 – Task**	**3 – Process**	**4 – Resources**	**5 – Evaluation**	**6 – Conclusion**
Task	It gives a background information on the topic of the Quest, writing an introduction to the overall theme to interest the students	It presents a formal and specific description of what the students are supposed to produce in the WebQuest	It describes in detail the activities the students must perform in order to complete the task.	It lists all the resources useful for carrying out the task and is clearly linked to the process section.	It provides assessment grids shared in advance with the students	It summarizes the activity carried out and the teaching and learning outcomes achieved.
Team	Individual learner or small groups of students (from 3 to 8 members)	Individual learner or small groups of students (from 3 to 8 members)	Individual learner or small groups of students (from 3 to 8 members)	Individual learner or small groups of students (from 3 to 8 members)	Individual learner or small groups of students (from 3 to 8 members)	Individual learner or small groups of students (from 3 to 8 members)
Needed technologies (online)	Individual access to the WebQuest and to the resources suggested for completing the tasks. Access to the Web.	Individual access to the WebQuest and to the resources suggested for completing the tasks. Access to the Web.	Individual access to the WebQuest and to the resources suggested for completing the tasks. Access to the Web.	Individual access to the WebQuest and to the resources suggested for completing the tasks. Access to the Web.	Individual access to the WebQuest and to the resources suggested for completing the tasks. Access to the Web.	Individual access to the WebQuest and to the resources suggested for completing the tasks. Access to the Web.

The WebQuest can be produced and published on the Internet using applications available online, which generate them automatically with an attractive and professional layout. Here are some possible suggestions:

- QuestGarden (http://questgarden.com/), which was created by Bernie Dodge to make it easier to create WebQuests without having to master a web editor. It provides step-by-step direction and examples and supporting documents in Word, PowerPoint, etc. can be attached to the WebQuest. A 30-day free trial is available.
- Createwebquest (https://www.createwebquest.com/), which is a rudimental WebQuest editor available for free on the web.

Anyway, WebQuests can be easily created using PowerPoint and sharing the result on the web, *Google Drive* or *Wikies*[14].

TEACHERS' PAGE

While the whole WebQuest is supposed to "address students" and thus the sections/pages should be described using the second person and explaining in detail what the students are supposed to do, the Teacher's Page/section can provide an added value to the resource.

It "addresses other teachers" and supports the WebQuest reuse, providing additional information to any teacher who might want to use the same WebQuest in their own classroom. The Teacher Page could mirror the 6 sections addressing students, providing comments and details about on how to implement or support the process.

ADDITIONAL HINTS AND COMMENTS

Learning to design WebQuests is a process that should go from the simple and familiar to the complex and new. That means starting within a single discipline and a short-term WebQuest and then moving up to longer and more interdisciplinary activities.

Here are some examples of WebQuests addressing adult learners:

- https://web.ics.purdue.edu/~lehman/ct/teacher.html
- https://ozline.com/webquests/china/chinaquest.html
- https://ozline.com/webquests/democracy/debtquest.html

The high added value of a WebQuest is **its reusability**. As a matter of fact, once invested in the creation of WebQuest for a course it can be "reused" in following editions, just after a check about the availability of all the suggested resources. They can also be easily updated and integrated.

Examples in NECTAR context

WebQuests stimulate critical thinking, cooperative learning, authentic assessment, and technology integration and can therefore be used to address different types of learning outcomes. Their reusability also pushes to invest in the creation of such training materials, which can be adopted in several training contexts and initiatives.

In the NECTAR context, a WebQuest can be designed in order to support an effective search on the Web, guided by a well-defined task or problem, for instance about:

- possible suppliers;
- different diets and respect towards cultures and religions;
- how to try out new meals/recipes (evaluating the trial phase in terms of its feasibility in the business/service);
- the identification of opportunities to create value, develop creative and purposeful ideas.

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[14] See for instance "How to make a WebQuest" https://www.wikihow.com/Make-a-Webquest

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ANNEX 18 – TRAINING PATTERN 3: PYRAMID
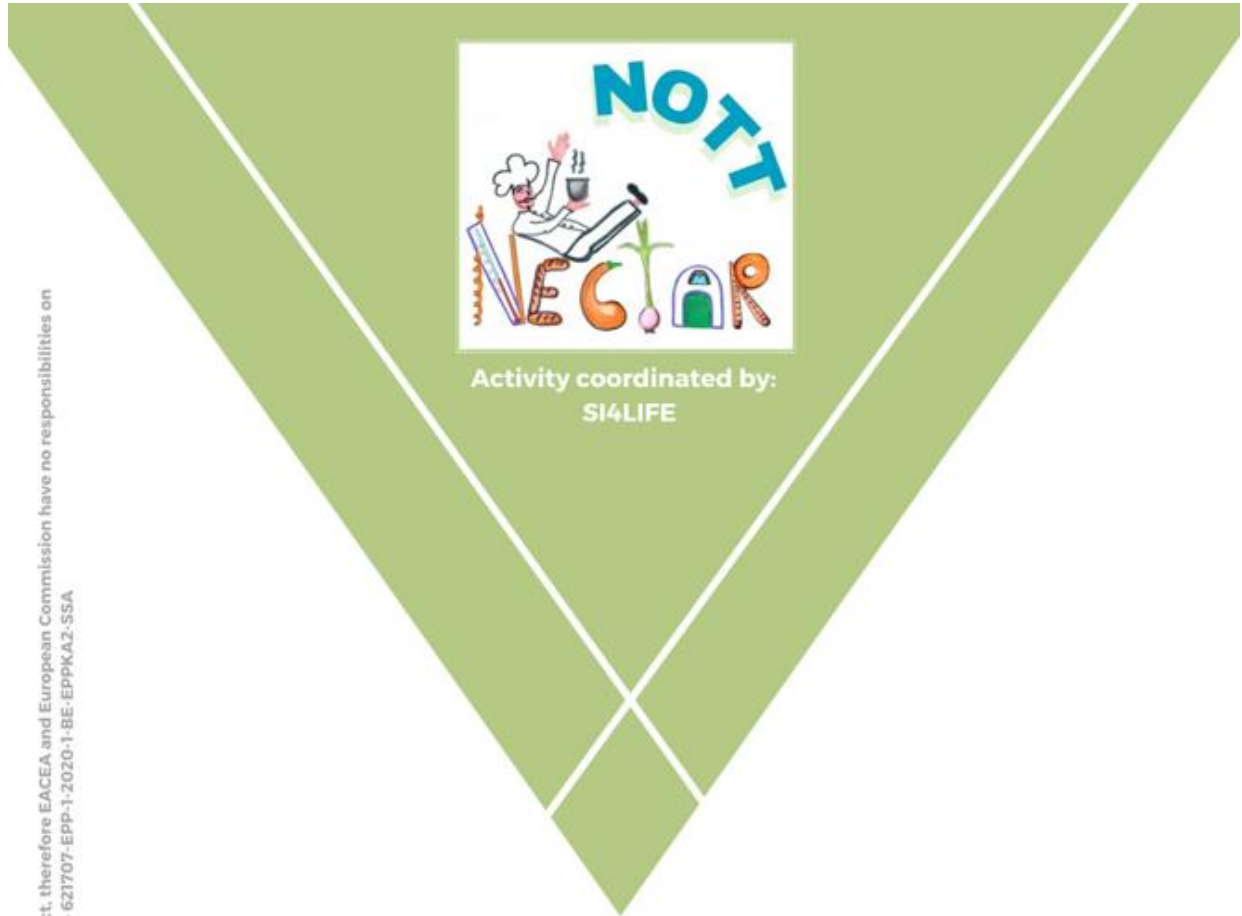
Activity coordinated by:
SI4LIFE

PYRAMID
TRAINING PATTERN 4

Authors:
Serena Alvino, SI4LIFE

TITLE

Pyramid

GENERAL DESCRIPTION

The Pyramid technique supports the convergence of a large group on a shared solution. Each individual participant studies the problem and proposes a solution. Groups (usually pairs) of participants compare and discuss their proposals and, finally, propose a new shared solution. These groups join larger groups to generate new agreed proposals. At the end, all the participants must propose a final agreed solution.

WHEN IS IT USEFUL?

The Pyramid technique is useful to tackle a complex problem, usually without a specific solution, the resolution of which involves reaching a gradual consensus among the participants.

It is used when there is a need for convergence of a large group on a shared solution for a complex problem (i.e. one that does not have only one right solution), e.g. for the collaborative design of projects where each participant contributes his or her own design, which is later compared with other proposals and refined.

HOW TO IMPLEMENT IT? SUGGESTED PHASES AND TASKS

A Pyramid flow is initiated with individual students solving a global task. Then, in a second level of the Pyramid, such individual solutions are discussed in small groups and agreed upon a common proposal. These small groups then form larger-groups iteratively and large group discussions continue until a consensus is reached on a global level.

In the **preparation phase,** the trainer should:

- ✓ define the global problem to focus on
- ✓ collect useful information (documents, links, etc) to analyse the problem
- ✓ determine the size of the groups, by planning the number of "phases/levels" of the Pyramid

The Pyramid usually has at least three phases.

PHASE/LEVEL 1 is usually characterized as follows:

- ✓ access to information
- ✓ individual study of the problem
- ✓ individual proposal of a solution

EACH FOLLOWING PHASE is characterized by:

- ✓ group formation
- ✓ group discussion
- ✓ proposal of a common solution…

…until only one group remains.

Usually, in the first phase, each student devises a solution to the problem. In the second phase, pairs or groups of three work together comparing and negotiating the individual solutions to come up with an even better one. In the subsequent phases, groups merge and participants build new "shared" solutions based on those elaborated during the previous phase, until the whole cohort of students produces a single solution progressively built on the pre-existing ones.

During the Pyramid technique implementation, the trainer should monitor the situation, decide how much time to give for each step and, at the end, once the whole group has presented the agreed solution, comment on it and optionally introduce a suggested solution.
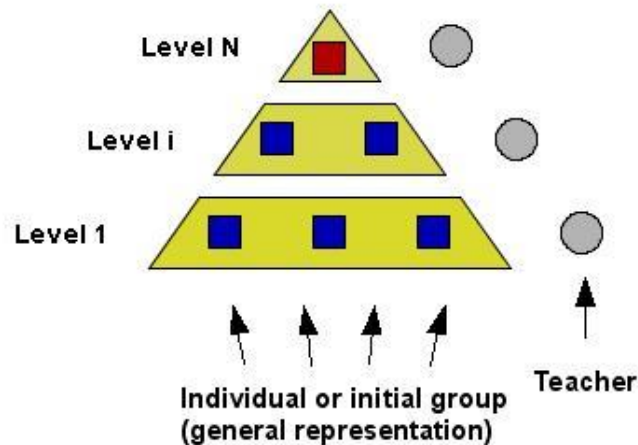
Figure 2: Graphical representation of the groups involved in a Pyramid technique (Hernández-Leo et al, 2005; 2006)

The Pyramid technique can be managed both in presence (F2F) and online, with the support of the proper technologies.

If it is performed F2F, the classroom should be organized in such a way to allow the different groups (both expert and jigsaw ones) to interact properly; thus, chairs and desks should be movable. Participants should be provided with the documents about the content they have to focus on (e.g. printouts) and groups should rely on devices that allow for the collaborative production of artefacts, i.e. boards and/or computers with the needed applications.

To convey the energy encapsulated in the F2F class to the online modalities, the anatomy of the F2F course should be emulated online by creating groups through adequate technologies.

Online interaction can be **synchronous or asynchronous**.

A web-conferencing system could effectively support a synchronous Pyramid activity if equipped with *break-out rooms*[15] where students can work collaboratively in smaller groups. Break-out rooms' functions can be designed to encompass Pyramid activities and thus offer opportunities for active online learning. For example, *Google Meet, MS Teams, Zoom, Webex* and *Discord* can be used to create break-out rooms to conduct online classes with synchronous delivery mode. The tools/resources to be used in the activity, such as text documents, videos, webpages, etc., should be identified and shared beforehand.

A Pyramid activity managed by progressive re-shaping of progressively larger break-out rooms needs an accurate design and good skills in using the tools.

A web-conferencing system could be used together with a *polling software tool*, such a *Mentimeter*[16] or *Slido*[17], which allow learners to participate in real time polling activities using a mobile device, tablet or computer. A *padlet*[18] can also serve the purpose of the Pyramid: visually, it looks like a sort of wall on which post-it notes with various information and content are 'hung' and it is a sort of 'virtual notice board' on which group members can upload, place and share all kinds of files and materials: images, pdfs, videos, links to sites.

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[15] a small meeting room or a separate part of an internet meeting where a small group can discuss a particular issue before returning to the main meeting (https://dictionary.cambridge.org/)

[16] https://www.mentimeter.com/

[17] https://www.slido.com

[18] See for instance https://padlet.com/

A specific app supporting "pyramid-based collaborative learning activities" (Pyramid App[19]) has been developed by the University Pompeu Fabra in Barcelona. These tools facilitate an agile design and the technology-mediated *orchestration*[20] of the pyramid activity in both face-to-face and distance learning scenarios supported by mobile devices

A Pyramid activity can also be performed asynchronously through forum interaction. Asynchronous discussion and collaboration need more time than "real time" ones: they could take 3-10 days per phase depending on the theme and the number of people. A forum should be created for each group, so that people could access progressively larger forums of discussion, until they reach the last one involving the whole group. Since asynchronous collaboration (especially when it is meant for the co-production of an artefact) is normally effective when it involves from 3 to maximum 8 persons, an asynchronous approach could not be the best solution for the "last levels" of the pyramid when groups are larger.

A padlet can be adopted in order to support asynchronous collaboration, too.

A "**mixed approach**" can be designed integrating an asynchronous interaction in the first steps and F2F or web-conferencing in the last steps.

Time	"n" Phases		
	Phase 1	**Phase n**	**Final Phase** (whole class)
Task	access to information individual study of the problem individual proposal of a solution which can be formalized in a document or an artefact	group formation group discussion / artefacts comparison proposal of a common solution which should be formalized in a new document /artefact	group formation group discussion / artefact comparison proposal of a common solution which should be formalized in a new document /artefact
Team	Individual students	From pairs or small groups to progressively larger groups	The whole class
Classroom organization (F2F)	Movable chairs and desks; printouts of the documents; devices that allow for the collaborative production of artefacts, i.e. boards and/or computers with the needed applications	Movable chairs and desks; printouts of the documents; devices that allow for the collaborative production of artefacts, i.e. boards and/or computers with the needed applications	Movable chairs and desks; printouts of the documents; devices that allow for the collaborative production of artefacts, i.e. boards and/or computers with the needed applications
Needed technologies (online)	Digital resources focusing on the content	Digital resources focusing on the content Web-conferencing – using "break out rooms" (synchronous) + (optional) polling	Digital resources focusing on the content Web-conferencing – using "break out rooms" (synchronous) + (optional) polling software such as

[19]https://www.upf.edu/web/tide/tools/-/asset_publisher/W2iQtvtwlOQl/content/id/183108101/maximized#.Ytq2zXZBw2w

[20] "Orchestration" refers to the real-time management of complete flows of collaborative learning activities, including group formulation and allocation, resource distribution and activity sequencing

	Text editors or software for presentations to produce a document or an artefact	software such as Mentimeter or Slido or a padlet	Mentimeter or Slido or a padlet
		or forums for online interaction (asynchronous) + (optional) a padlet	or forums for online interaction (asynchronous) + (optional) a padlet
		Text editors or software for presentations to produce a document or an artefact	Text editors or software for presentations to produce a document or an artefact

ADDITIONAL HINTS AND COMMENTS

Pyramid flows foster individual participation, accountability and a positive balanced interdependence. Furthermore, the Pyramid pattern promotes conversations in increasingly large groups, clear expectations of consensus achievement and positive reinforcement mechanisms leading to the desired positive behaviours in the learning process.

The "orchestration" of a Pyramid activity could be very complex, especially if it involves a big class and if it is at least partially managed online. Complex "orchestration" situations can be facilitated by technologies, but these should be flexible to support dynamic modifications of pre-designed flows, which are caused by unexpected situations, such as the absence of a student. Each step and its related tools must be planned in detail before the start of the activity.

If it is implemented online, it should not be the first activity of a course: people need a good degree of familiarization with their peers, the learning environment and mediated communication.

Participants' assessment should be based on the level of participation of the individual, aside to a self-assessment and a learning log[21].

Examples in NECTAR context

The Pyramid technique can be used to deal with complex problems, usually without a specific solution, which require a group to converge on a shared solution. These characteristics make it suitable for all the Learning Outcomes of the CGE Curriculum, which requires a "team-based" approach in an interdisciplinary perspective. It could also help to go deeper in issues concerning the kitchen staff organization.

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[21] Learning Logs are like diaries students keep that record their reflections about what they are learning and how they are going about learning it. Learning Logs are useful because they promote metacognition. They are also useful tools for teachers because they can reveal students' perceptions (and misperceptions) of the information, as well as reveal how they are reacting to the way the material is being taught

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ANNEX 19 – TRAINING PATTERN 5: BRAINSTORMING
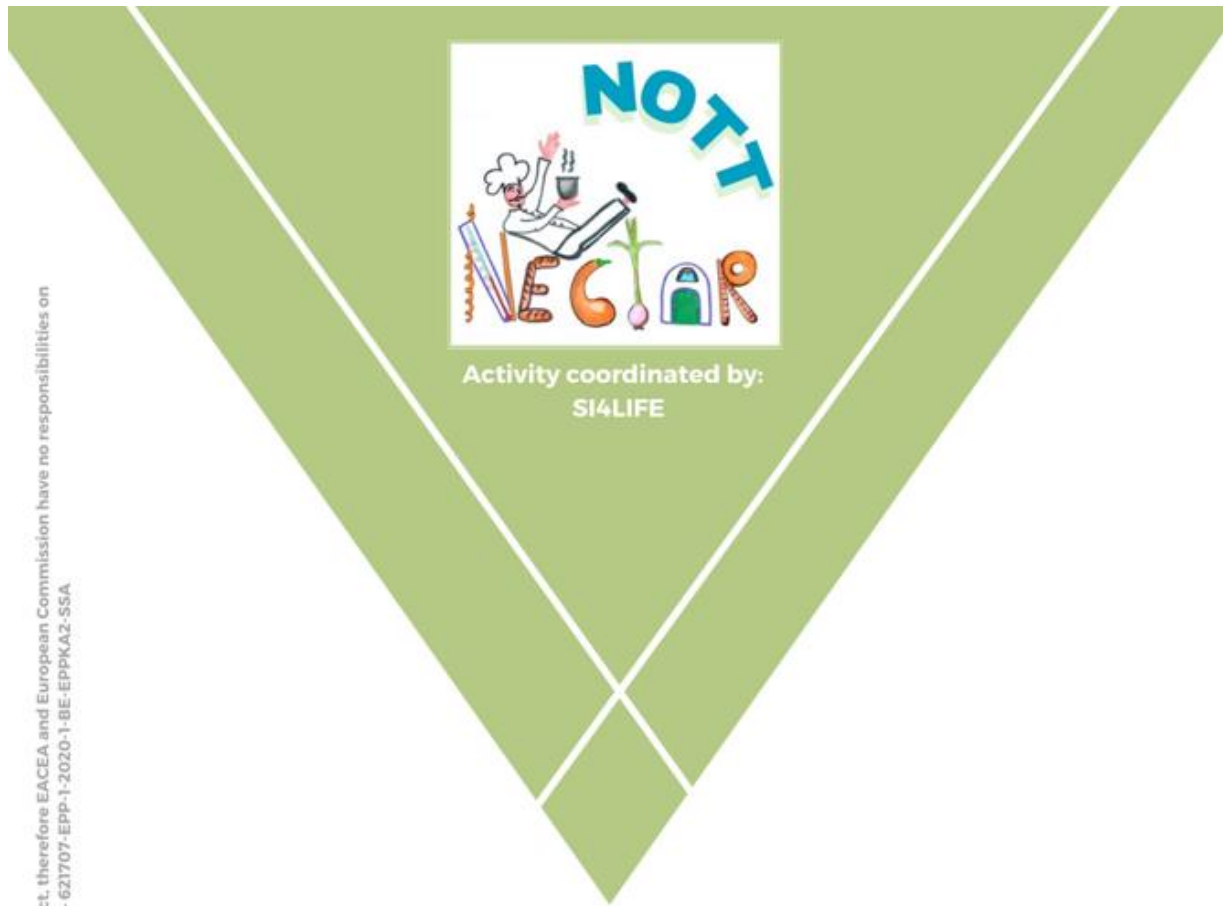
Activity coordinated by:
SI4LIFE

BRAINSTORMING
TRAINING PATTERN 5

Authors:
Serena Alvino, SI4LIFE

Co-funded by the
Erasmus+ Programme
of the European Union

TITLE

Brainstorming

GENERAL DESCRIPTION

Brainstorming is a pedagogical approach used to encourage and increase creative productivity, often in an effort to come up with potential solutions to a problem. The idea is that working in a group, students come up with the most outlandish ideas possible that could be considered as a solution to the given problem.

Under the guide of the teacher, who usually writes down all the ideas on a board, each student shares his/her own thoughts with the group, who finds an adequate solution to the problem based on the expressed ideas.

WHEN IS IT USEFUL?

A Brainstorming activity is suitable for large groups and makes the most of the diversity in competences.

It is usually implemented to come up with potential solutions to a problem or to break the ice before a more complex activity, such as, for instance, a case study.

Performing a Brainstorming activity could:

- help students think outside the box to find innovative solutions and ideas;
- enable students to think independently, to develop their thinking skills, giving them the freedom to express their views and ideas and strengthening their self-confidence;
- maximize the potential of students' diverse experiences, backgrounds, and strengths;
- increase respect for other people's ideas and encourage active listening;
- increase motivation and create stronger bonds among people in the learning community/class.

HOW TO IMPLEMENT IT? SUGGESTED PHASES AND TASKS

In the **preparation phase,** the trainer should:

- ✓ define the global problem, usually in terms of a question which has a wide range of possible answers
- ✓ collect useful information (documents, links, etc) to analyse the problem
- ✓ define the size of the "brainstorming groups" or decide to implement it with the whole class
- ✓ define timing, main steps and supporting tools (in the event that it is at least partially implemented online).

The Brainstorming method can be implemented through different approaches.

The creative problem-solving process usually embraces two types of thinking: convergent and divergent. Convergent thinking focuses on reaching one well-defined solution to a problem. This type of thinking is best suited for tasks that involve logic rather than creativity, such as answering multiple-choice tests or solving a problem for which one knows there are no other possible solutions. Divergent thinking is the opposite of convergent thinking and involves more creativity. With this type of thinking, you can generate ideas and develop multiple solutions to a problem. While divergent thinking often involves brainstorming many possible answers to a question, the goal is the same as convergent thinking: to arrive at the best solution.

Trainers can use a mix of convergent and divergent thinking to support learners in solving problems.

Anyway, the following phases can be identified.

PHASE 1 (divergent thinking) is usually characterized as follows:

- ✓ access to information
- ✓ individual study of the problem/question
- ✓ individual proposal of a solution
- ✓ collection of all proposals/solutions on a shared (physical or digital) board

Then, **PHASE 2** (convergent thinking) usually envisages:

- ✓ the group comments on the proposed solutions, also scaffolded by the trainer
- ✓ the possible refinement of the proposals/solutions in a second round of contributions
- ✓ the preparation and running of a group presentation of the agreed solutions in front of the trainer and/or other groups

In this phase, the trainer usually monitors the process, ensures that the groups fit into the set time/schedule, supports discussions, and then assesses the activity.

The Brainstorming activity can be managed both in presence (F2F) and online, with the support of the proper technologies.

If the Brainstorming activity is performed F2F, it can involve the whole class or sub-groups. In this second option, the classroom should be organized as to allow the different groups to interact properly. Thus, chairs and desks should be movable. Participants should be provided with the documents on the content they have to focus on (e.g. printouts).

A shared board for each group should be available. It can be physical (white board, a big paper on the wall, post-it notes sticked on the wall, etc.) or digital. Several digital applications are available on the web aimed to support a brainstorming of ideas. For instance, a **padlet**[22] can be useful to the purpose of the Brainstorming: visually, it looks like a sort of wall on which post-it notes with various information and content are 'hung' and it is a sort of "virtual notice board" on which members of the groups can upload, place and share all kinds of files and materials, i.e. images, pdfs, videos, links to sites. If the class is used to LMS, a possibility is to **create a page as a wiki** and to contribute to a brainstorming activity by allowing everyone to edit it. Other suggested applications are *Stormboard*[23] or other apps that support *mind mapping* like *Bubbl.us*[24].

Online interaction could be **synchronous or asynchronous**.

A web-conferencing system can effectively support a synchronous Brainstorming. Due to the limits of online interaction, it is suggested to split the whole class in subgroups of about 5 to 8 members and to equip each of them with *break-out rooms*[25]. For example, *Google Meet, MS Teams, Zoom, Webex* and *Discord* can be used to create break-out rooms to conduct online classes with synchronous delivery mode. The tools/resources to be used in the activity, such as text documents, videos, webpages, etc., should be identified and shared beforehand.

A moderator should be identified in advance for "each room": his/her aim is to collect proposals on the shared board or to support this process if carried out individually.

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[22] See for instance https://padlet.com/

[23] Stormboard (https://stormboard.com/) is a shared workspace designed to support brainstormin and other collaborative processes through virtual canvas, whiteboards, workspacse, idea boards etc. (basic version free for educational purposes)

[24] Bubbl.us (https://bubbl.us/) supports groups to take notes, brainstorm new ideas, collaborate, and present shared ideas (basic version free for educational purposes).

[25] a small meeting room or a separate part of an internet meeting where a small group can discuss a particular issue before returning to the main meeting (https://dictionary.cambridge.org/)

A Brainstorming activity can also be performed asynchronously through the interaction in forums. Asynchronous discussion and collaboration need more time than "real time" ones. They could take 3-10 days per phase depending on the theme and the number of people involved. At least one forum should be created for each brainstorming group, but the most effective solution seems to be to create for each group a forum for the divergent process and another for the convergent process. Groups should involve 5 to 8 members.

A "**mixed approach**" can be designed integrating F2F or web-conferencing in the divergent process and asynchronous interaction in the convergent one.

Time	2 Phases	
	Phase 1 - divergent	**Phase 2 - convergent**
Task	access to information individual study of the problem/question individual proposal of a solution collection of the proposals/solutions on a shared board (physical or digital)	the group comments on the proposed solutions, also scaffolded by the trainer the possible refinement of the proposals/solutions in a second round of contributions the preparation and running of a group presentation of the agreed solutions in front of the trainer and/or other groups
Team	Individual students + collection of the proposals/solutions supported by the trainer	Brainstorming groups
Classroom organization (F2F)	Movable chairs and desks; printouts of the documents. A shared board should be available for each group. It can be physical (white board, a big paper on the wall, post-it notes sticked on the wall, etc.) or digital.	Movable chairs and desks; printouts of the documents. A shared board should be available for each group. It can be physical (white board, a big paper on the wall, post-it notes sticked on the wall, etc.) or digital. The presentation of the agreed solution should be supported by adequate tools/apps.
Needed technologies (online)	Digital resources focusing on the content Text editors or software for presentations to produce a document or an artefact Web-conferencing – using "break out rooms" (synchronous) + a virtual board like a padlet or a wiki or forums for online interaction (asynchronous) + (optional) a virtual board	Digital resources focusing on the content Text editors or software for presentations to produce a document or an artefact Web-conferencing – using "break out rooms" (synchronous) + a virtual board like a padlet or a wiki or forums for online interaction (asynchronous) + (optional) a virtual board Text editors or software for presentations to produce a document or an artefact

ADDITIONAL HINTS AND COMMENTS

The "orchestration" of an online Brainstorming activity could be complex. Each step and related tools should be planned in detail before the activity starts.

Participants' assessment should be based on the level of participation of the individual, aside to a self-assessment and, in the event of an asynchronous process covering more days, a possible learning log[26]. A peer-assessment can be performed too, by asking each member of the group to rate from 1 to 5 the contribution given by other participants to the whole process.

One recommended method for assessing students' participation in a brainstorming activity is to monitor the process and compile an easy rating scale in parallel. A possible example is provided in the frame below.

Example of assessment rating scale (https://www.studyquirk.com)
Indicate how well the class did while brainstorming.
Use a (+) if students really worked at it.
Use a (=) if you felt students were so-so about it.
Use a (-) if students didn't really try at all.
_____ Did not judge
_____ Welcomed all ideas
_____ Did not interrupt
_____ Did not discuss ideas
_____ Did not criticize ideas
_____ Everyone contributed
_____ Wrote down repeated ideas
_____ Kept focused on brainstorming
_____ Allowed enough time
_____ Stopped when everyone was finished

Examples in NECTAR context

Brainstorming can be implemented as a preliminary step to launch an activity or as an independent learning activity. It can be used to come up with potential solutions to a problem which require creativity to find the most suitable one. These characteristics make it suitable for targeting all the Learning Outcomes of the CGE Curriculum that require creativity and problem solving, such as creating new recipes or menus, innovating and stimulating entrepreneurship or testing new solutions on the market.

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[26] Learning Logs are like diaries students keep that record their reflections about what they are learning and how they are going about learning it. Learning Logs are useful because they promote metacognition. They are also useful tools for teachers because they can reveal students' perceptions (and misperceptions) of the information, as well as reveal how they are reacting to the way the material is being taught

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