

SEACW DELIVERABLE D.4.2

“Methodological training plans”

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This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

Abstract

The methodological training plans are based on the development of detailed *subject course plans* that shall be established for both the training activities, and for each of the modules (learning subjects/areas) to which the training activities -mainly courses- belong. The subject course plan shall be developed with regard to the following items; description of the subject and objectives, competences, contents, methodology and description of training activities, assessment and grading system, resources and planning of learning and assessment activities.

As SEACW training activities will be mainly e-learning activities, the present document includes both a theoretical description of the premises to fulfil when developing e-learning training activities, and a description of technical parameters of the future SEACW e-learning platform.

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1 Introduction

A methodological plan detailing SEACW's training activities will be shown in the present document. As detailed in Deliverable 4.1 *Design of training content report*, the training activities will be based in a **module-schema basis**. Thus, different modules of contents will be composed of several training activities or *courses*.

By **training activities** SEACW consortium refers mainly to courses. But also to any other kind of learning activities different from a typical course-structure learning activity, that might result interesting for training individuals on AHA and ICTs subjects. These training activities can be *information pills, specific assignments, videos* and other resources. It is very important to underline the fact that the training activities, as a part of an emergent project like SEACW, are open **to be renewed and updated with whatever opportunities, changes and new releases in a rapidly-changing field like the training field**. Particularly, e-learning happens to be constantly renewed with several releases in terms of methodologies, applications and software in general. Such releases are to be considered for further improvements of an alive document like the present Deliverable 4.2.

The activities are to be developed following the methodology exposed here, and with regard to the basic differentiation between the **2 target groups for the training activities (Social inclusion agents and elderly)**. Therefore, the methodology will be varied and adapted to each of the levels of knowledge and skills that regarding SEACW's users.

Particular attention has been paid to the specifications of **e-learning**, which is the main training modality in which the training activities are to be developed and taken by SEACW users. Regarding the upcoming pilot's phase of project, scheduled for months 16 to 19 of the project, several training activities will be available to be piloted in such period. Those training activities will be developed following the methodological schema exposed here, and depending on the **outcomes of pilots**, particular features of the methodology on which they have been developed might be reviewed or upgraded.

2 Necessary elements to conform SEACW training activities

A *subject course plan* (SCP) will guide the methodology for developing each of the courses and training activities in general. Within the present section we are to detail what the mentioned *subject course plan* encloses. However, each module will be also introduced and detailed in the Ecosystem, so that the matrixes to which the courses and training activities belong get perfectly described.

The *subject course plan* defines the teaching and learning process of a subject and specifies the model used for its organization. Its purpose is to orient and guide students' learning during the subject course. It also enables the teaching staff/supervising staff to plan their teaching activities in different subjects, while allows students to find out the key topics in the subject of interest and its organisation, or to decide on the course to follow.

In short, SCP fulfils various objectives:

- Organization and planning of the subject.
- Provides appropriate information on competences, content and assessment mechanisms in a subject.
- Facilitates exchanges of students between different educational centres.

In order to achieve the above objectives, both the general structure of a module, and the SCP of each course must be approved by a competent body (SEACW Experts Committee) and must be addressed to students/users in order to inform them about issues such as the training activity to follow, what competences they are going to acquire, or the assessment mechanisms.

The Subject Course Plan must be unique to each training activity, and normally includes the description of the subject, the associated competences, the contents, the teaching methodology, and the form of assessment.

For all training activities, regardless its module and its learning modality (either classroom-based or, mostly, online), the following items will be always marked as horizontal when developing the corresponding Subject Course Plan:

- Description of the subject and objectives.
- Competences.
- Contents.
- Methodology and description of training activities.
- Assessment and grading system.
- Resources.
- Weekly planning of learning and assessment activities.

2.1 Activity description and learning outcomes

There will be both a general description for the module, and detailed description for each training activity -mainly courses- as a part of its SCP. The description contains a series of identifiers of the subject (topic) in question, including key aspects of the subject, contextualization and general recommendations. The description seeks to position the subject

of the training activity within the corresponding study area, identifying the key aspects of the training activity and its approach.

The information contained in the description of a course may be divided in several sections:

- Name of the training activity
- Module
- Code
- Total credits (Credit-based system; number of credits per course)
- Workload: hours of supervised learning and hours of autonomous learning.
- Year
- Period of time (of each course)
- Type of subject: compulsory, optional (if relevant)
- Teaching language(s)
- Teaching team/staff
- Subject coordinator

The activity description can include:

- A guideline with a series of instructions or general standards for the implementation or achievement of established objectives;
- A reference to the learning activities (study hours, hours preparing for examinations, etc.).
- Learning outcomes

With regard to this last point, *learning outcomes*, it is important to make clear that are basically statements about what a student is expected to know, understand and be able to demonstrate at the end of the learning activity, in terms of established competences. Students must have a clear vision of what is expected of them and, when necessary, to be able to establish a dialogue or negotiation between the trainer/tutor and the group to clarify the goals to be achieved.

Learning outcomes are linked to the attainment of concepts, skills and values, and should enable subsequent assessment (indicators of achievement of competences), organization of timeframes for assessment situations, establishment of students' study timeframe, the compulsory/optional nature of the assessment and where this will take place (inside and/or, mainly, outside the classroom).

Learning outcomes can be written in terms of knowledge (conceptual goals), skills (related to the command of specific procedures or techniques), values or attitudes that are generally considered important for the professional profile or field, and without an excessive degree of definition.

Recommendations for learning outcome formulation:

- Write them from students' point of view and in relation to the competences to be assessed. One way of doing this is to include a statement like: "*On completing (the module, the activity ...) the student should be able to...*" followed by a list of specific learning objectives.

- Each item on the list should begin with a verb in the infinitive form, describing actions that are observable, measurable and assessable, such as: *enumerate, calculate, estimate, describe, explain, predict, model, etc.*
- The number of objectives should be balanced in terms of subject length, module, or course allowing students to achieve them.
- The wording of all objectives must be clear and understandable, comprehensible to anyone reading them, and must only provide scope for interpretation in one way.
- A highly exhaustive list of objectives can create a long document, but objectives that are too general provide little information about the real nature of the subject, and do not allow the fulfilment of its purpose.
- The number of objectives to be defined depends on the criteria of each trainer and on the general guidelines of each educational centre.

➔ SCP Example: Training activity description and learning outcomes:

Training activity (course) name: **Healthy eating**

Module: Nutritional aspects of healthy aging

Course developed for: Social Inclusion Agents

Code: NAHA_HE

Total credits: To be determined

Workload: (credits * 25 hours): To be determined

Year: To be determined

Period of time: To be determined.

Centre: e-learning course; SEACW Platform-based

Teaching language(s): English

Teaching team/Teaching staff: To be determined.

Subject coordinator: To be determined.

Course description: The student will achieve an appropriate knowledge on food's nutritional needs regarding healthy eating standards. The course also provides knowledge on the effects that nutrition has over several diseases such as osteoporosis, chronic heart disease, diabetes, etc.

Learning outcomes: After the course, the student should be able to acquire the main competence of *becoming familiar with the nutritional basis of healthy eating.*

2.2 Competences

Deliverable 2.3 “*Final document of skills and competences for elderly people and social inclusion agents*” has identified the digital skills of the elderly people and social inclusion agents (professional and non-professional) in accordance with their needs and in relation to the subject of active and healthy ageing. Accordingly, Deliverable 4.1 has presented a first

overview of training contents in the fields of digital literacy and AHA aimed for the SEACW's target groups. The training contents have been developed in accordance with the needs and required competences of elderly people and social inclusion agents. This section defines the competence concept and its different types that might be related to a specific field/discipline or to various disciplines. It also provides some general recommendations for competence formulation.

The competences are defined as those dominions and skills that will enable students to respond and solve problems in different real and professional contexts. Therefore, it is important to start any training (also online training) by identifying what competences will be developed and evaluated as part of the training.

A competence has two distinct components: it is related to specific work in a specific context, and includes various types of knowledge, skills and attitudes. There are competences related to a specific field or discipline, as well as cross-disciplinary competences that can be applied to various fields.

Classification of competences:

- General (cross-disciplinary or generic) that are common to most disciplines but have a different contextualised impact on each of them. One categorisation is the following: a) instrumental competences; b) interpersonal competences; c) systemic competences. Each SEACW module shall have general competences present within all its training activities.
- Specific of a discipline, academic and/or professional field, aimed at achieving a specific professional profile. These include: a) disciplinary knowledge, meaning the body of knowledge, concepts and theories, as well as cognitive skills needed to manage disciplinary knowledge (analytical thought, skills of inquiry, etc.); b) know-how or procedural and methodological skills that are related to techniques, methodologies, and working procedures or expertise, as well as cognitive and reflective skills (problem-solving, inductive reasoning, reflexive action, etc.).

Recommendations for competence formulation:

- Action. They should be formulated with a noun or a verb, and a result that can be seen and assessed. In addition, the use of verbs such as "know" and "understand" should be avoided and others, such as *describe, identify, recognize, classify, compare, assess or evaluate, formulate, argue, calculate, plan, etc.* Should be used instead.
- Description of the focus of action and the context in which it is applied. The competence should refer to the disciplinary field to which is applied.
- Level of achievement. The description of the competence should indicate how much should be achieved in the subject area.
- Number. The list of competences should include no more than a dozen items that may be grouped in more specific lists. This short list is achievable if large sections of competences are considered in relation to: I) the scientific foundations or theoretical corpus (understand, critically analyse, compare, evaluate, research, etc.); II) the methodological competences in the discipline; III) the technological/procedural competences

2.3 Contents

Contents are topics to be covered during a training activity, grouped, as explained above, into **modules** or content sections. They are items comprising what is learned and taught in relation to established competences.

SEACW's modules will be developed by multi-disciplinary course teams. These will include respected academics from other organizations working alongside SEACW consortium, educational technologists and media specialists contributing pedagogic and technical expertise; and external assessors to ensure academic standards are consistent with other online learning platforms. SEACW's Experts Committee will be in charge of the final validation of the contents.

The contents of the training activities will be developed with regard to what described in Deliverable 4.1 *Design of training content report*. As said above, the expertise of each partner of this project is to be accounted for developing the mentioned contents (for instance, UC3M is in the perfect position for developing ICT training contents). In addition, Áliad has a significant experience in health contents development. Besides, Áliad also has long experience in collaborating with prestigious publishing houses for developing learning contents.

➔ Criteria for determining content

- Identification of subject areas.
- Specification of the degree of deepness in the studied topics.
- Content structuring: I) its organization within sections or areas according to broad areas of a discipline; II) stages of a fundamental process that structures the subject (e.g. undertaking a professional project).
- Content covered during the course must be closely related to pre-established competences and learning outcomes.
- Reference must be made to the topics covered during the course, grouped in modules or content sections.

➔ Criteria for selecting content

- Representativeness: content that meets the aims and the context in which it is taught.
- Significance: identification of key concepts that give unity to the thematic structure and the functional skills and attitudes.
- Transferability: prioritise content with greatest potential for application in other situations.
- Durability: learning is today characterised by rapid change and continuous incorporation of new knowledge.
- Relevance: a guarantee of contents' value is the importance and validity assigned to it by the members of the scientific and academic community, as well as its social relevance.
- Specificity: some topics and procedures are repeated in different subjects and others are specifically assigned to particular subjects; content that is difficult to cover within other disciplines should be retained.

2.4 Methodology and description of training activities

The training methodology must provide information on what students will need to do in order to learn. Planned activities are at the centre of any training methodology, and these may be of various types depending on the role played by students and trainers.

The choice of methodologies to be used is essential for achieving high quality learning outcomes. The chosen methodology must be consistent with the learning objectives and assessment methods, appropriate to the subject of the course and general training guidelines.

→ Students workload and distribution of credits

→ Classification with regard to space-time conditions.

- On-line training as the main method for SEACW training activities.
- Face-to-face teaching and learning (classroom-based courses and training activities). Face-to-face learning is expected to be displayed in few cases, especially when the students/users are elders +76, or those to be within the digital divide, assumed to be on the need of direct help when it comes to ICT learning.
- Different activities are planned to take place. For example, trainer exposition or student exposition: individual or group, exposition by guests, debates (seminars, discussion groups, etc.), working groups, simulations (role-playing), cine-forum, examination. Assignments might be scheduled to be delivered by the students.
- Supervised teaching and learning (outside the classroom). For example, supervised projects, case studies, participation in online forums, guided reading, tutorials (face-to-face or online), individual or group work, guided visits.
- Autonomous teaching and learning (outside the classroom). For example, reading, personal study, preparation, examinations, organization of notes and/or materials, information search, free tutorials (individual or group).

Aspects to consider

- SEACW's online platform and its characteristics
- Space and organization. Classrooms of different sizes, places to work in small groups, computer rooms, laboratories, etc.
- Group. Number of groups and size.
- Timetables and calendar. Length of each session and time availability; this may hinder the implementation of a methodology.

→ Recommendations for designing teaching methodology

- Select the learning activities: select activities in accordance with the objectives and competences; propose feasible activities, ensuring that they are appropriate to the skills, resources and capabilities of the group; anticipate whether they are compulsory or optional like reinforcement or deepening, etc.
- Clearly determine what is to be achieved with each activity: students should know from the beginning the procedures to be followed when performing the activities.
- Calculate the time invested in carrying out the activities and anticipate their duration: the aim is to decide on total hours and face-to-face sessions that will correspond to each activity; decide what each session will be dedicated to; when calculating the time,

it is important to take into account the number of students participating in the activity and the amount of content to be covered in each activity.

- Place the activity correctly within the planning: specific content to be covered must be identified and also the selected strategies or techniques; identify any required change to the procedure or any new material to be used.
- Elaborate a complete guide with all the information that students need in order to perform the activity: this guide should include the objectives of the activity, instructions for carrying it out individual or group activities, the quality criteria of the activity and the assessment criteria.

➔ A wide variety of methodologies can be used in teaching and learning. We hereby underline five of the most common training methodologies:

- Solving exercises and problems
- Problem/project-based learning
- Case studies
- Exposition/lecture method (mainly in classroom-based courses and training activities)
- Co-operative learning (mainly in classroom-based courses and training activities)

➔ General structure of a training activity.

The structure of the training activities will be based on the process to acquire and develop the competences explained in Deliverable 4.1. The contents of each module will have a distribution that adapts according to the subject and the type of target students. It consists of:

1. The **teaching material** in the platform, which is structured according to the teaching plan and the expected learning evaluation.

➔ In each training activity the students have the TEACHING GUIDE, with the course program, including recommendations for their own planning, the details of their tutorials, guidelines on e-learning, high-level description of aims and content, additional contact details, etc. (Use a motivational and inclusive language)

➔ Agenda and calendar, with events that indicate the student when each milestone should be achieved within the course. The students can follow their progress on their own profile and can incorporate their own events to their agenda in order to plan their self-study. (To have organization skills).

➔ Content guide: Explanation of the contents that are presented to the student (the contents permit to develop the technical competences of each module, for example the detection of psychiatric illness).

➔ Interactive presentations of the key ideas of each module (be capable of transmitting knowledge and attitudes).

➔ Videos to show real life situations

➔ Consultation papers and resources.

➔ Support materials (texts, legislation, etc.) in formats such as *pdf*, that the student can consult and, generally download.

➔ Links of interest.

➔ Knowledge databases.

2. The work of students during the course can be promoted through various **activities** which also act on their competency profile:

- ➔ Exercises and case studies; embedded within the course content, alternating theory and practice. They intend to apply to real situations the concepts covered in the modules and / or learning units, and start from practice situations that are close to the participants. (
- ➔ Work in virtual groups
- ➔ Resolution of simulations
- ➔ Debates in the forums of the course.
- ➔ Evaluations: planned with the modules and regulated in terms of execution time and test duration. These assessments are interactive, so they instantly tell students whether they have passed or not.

The students in an e-learning will be of course mediated by the interaction with trainers/tutors, but also influenced by the rest of students through tools such as forums, chat and mail.

2.5 Assessment and grading system

Assessment is a process that provides information on the learning acquired by students and helps to check if they are achieving the established objectives. Assessment therefore requires data to determine what has been learned, its extent and the criteria for assessing it.

Assessment consists of a series of processes, tools and teaching strategies identified in the Subject Course Plan (SCP), which are applied on a progressive and integrated basis throughout the course. It includes the model, indicators, instruments and timeframe in each subject for assessing the achievement level of learning in terms of outcomes.

➔ Assessment criteria

Students should be aware of the assessment criteria at the beginning of each course. Tutors are responsible for approving assessment and re-assessment criteria for the activities included in the Subject Course Plan (SCP). Moreover, the mentioned criteria will be available for students to consult on the platform.

➔ What to assess?

The weight or importance placed on each competence in a subject must be previously decided. The activities proposed for working on each competence should be revised to decide which activities to assess and what instruments it is possible to use. Factors to take into account when designing an assessment plan:

- Determine what will be assessed and why;
- Identify the necessary information;
- Decide when and how to obtain the necessary information;
- Prepare or select tools for gathering information;
- Summarise and disseminate the results of the assessment.

➔ Types of assessment

The assessment should be consistent with the methodological approach. Different assessment criteria may be used depending on the type of activity.

- Online Support. Several online tools shall be displayed in order to provide online assistance for the students. Forums chat, emailing, etc.
- Face-to-face assessment for classroom-based training activities: class participation, assignments, examinations.
- Autonomous assessment outside the classroom: self-assessment, dossier.

➔ Grades

Students must be assessed and graded according to the specifications in the SCP and current regulations of the educational centre.

Students are entitled to a review of their grade by the teaching staff responsible for the course in question. This review will take place on the date and at the time specified by the teaching staff responsible for the course and after announcing the provisional grades.

The numerical grades of the training activities will be mostly obtained -when applicable- using the following conversion table:

Grade	Equivalent in points
Pass	5.5
Good	7.5
Excellent	9
Excellent with honours	10

2.5.1 SEACW's training activities evaluating methodology

There are different types of evaluation of the student's/users' learning process:

➔ Tests:

- ➔ Tests are planned in the modules and regulated in terms of fulfilment time and length of the test. These evaluations are interactive, communicating the student/user the result of the test instantly. When a determined number of mistakes is exceeded, the system regenerates a different exam, in order to encourage the student/user to consult the new material (if the student/user doesn't fulfil the test correctly once, the next test varies its questions, to ensure that the student/user knows the material and doesn't mark the answers by trial and error)

There are the test types:

- Initial test. It is done by the tutor, if applicable, at the beginning the course, in order to become familiar with the knowledge and preferences of the students/users in the group and adapt the monitoring to their needs (see methodology)

- Test of each unit. They will be carried out at the end of each unit to evaluate the acquired knowledge, if it's considered necessary.

Both must be overcome to pass each training unit.

- Final Exam. It will be carried out when all the units are completed. The course diploma will be obtained once the exam has been passed.

Besides the tutor will evaluate the students/users and a personalized and confidential evaluation that will be sent them.

➔ Analysis Of Case Studies

Guided and corrected by the tutor. A good result will improve the final evaluation.

➔ Monitoring

The tutor will evaluate the students/users in the communications (connection, forums and chats participation, questions, etc.) and will do a personalized and confidential evaluation that will send them.

This monitoring will include individual and group attitudes to compensate imbalances.

- Online debates

The responsible person is the trainer/tutor, the tools are the email, forum or chat and the notes and reports of the professor, with the results treated in a software application and the period during its implantation.

The process description is the following one:

In order to evaluate the skills in this training action, during its development, the tutor invites the students/users to suggest debate topics, encouraging in a coordinated way the motivation of the study and the proposed topics. Examples, simulations and case studies are used where situations close to reality are set out, and are evaluated through answers.

- Tutoring communications

The responsible is the tutor. The process description is the following one:

Doubts and questions, and assignment-delivering allow the tutor to know aspects of the skills acquirement. The tutor is the training responsible and he is in charge of revising, quantifying and analyzing the results, in order to enrich the training action and take corrective, preventive or improving actions.

2.6 Reference sources

These are information and materials from various sources and other appropriate educational sources for the learning and teaching process (teaching materials, notes file, case studies, etc.). They are used to provide a guide for educational and information resources related to the course and their location has to be clearly identified (library or other sources). References are also provided for those students interested in expanding and complementing the information on the content of a course.

Reference sources can be classified according to several criteria:

- The extent to which consultation of it is obligatory;
- Type of resource;
- The weighting degree in the learning process of the course.

Two types of resources are normally offered to the students:

- Bibliography and basic resources. Information resources and core bibliography for monitoring the subject from various sources and formats (e.g. paper and digital).
- Bibliography and complementary resources. Information resources and bibliography for expanding and deepening in the subject from various sources, formats and media.

2.7 Planning of learning and assessment activities

Time is a key factor in any learning and teaching process. When we think of the time, we have to consider not only the time that students will use to realise the proposed learning activities, but also its distribution in the calendar. In addition to the time spent to perform activities and monitoring the course, there is a parallel time that allows students to think, apply or reflect upon the acquired learning contents, and ultimately strengthens them.

Planning is produced in order to ensure a balanced calculation of the time spent on activities during the course period as regards the estimated time for the subject in question, according to SEACW training activities credit-system (1 SEACW credit might be equal to 25 hours of total study time). The planning may include the spaces, instruments and resources to be used, as well as the learning outcomes and where appropriate, their relationship to the defined competences.

The programme of activities of a course is the plan/programme of the activities that must be carried out to achieve the competences and general learning objectives of the course. Given that what students do (rather than what the trainer does) is truly important for the learning process to take place, the plan must be drawn up to specify what students do:

- Schedule of learning and assessment activities; Students will have continuous access to the *virtual classroom*, where the calendar of activities and assessments, and description of activities will be always updated.
- Context in which the activity takes place (inside and/or outside the classroom);
- Group format for each activity;
- Expected results of each activity;
- Estimated time for each learning and assessment activity;
- Competences worked on in each activity.

→ Example

Nutritional aspects of healthy aging

Planning	Theoretical Work	Estimated time	Practical Work	Estimated time
1st week: Digestive system and liver function	Learning manual	2 hours	Access to www.idf.org	3 hours
	Key ideas	1 hour	For the study and prevention of diabetes	
2nd week: Endocrine system	Learning manual	2 hours	Forum: "Have you noticed differences in your nutrition?"	1 hour
	Key ideas	1 hour		
3rd week: Nutrition, calories.	Learning manual	2 hours	Exercise: Energetic requirements	1 hour
	Key ideas	1 hour		
4th week: Vitamins	Learning manual	2 hours	News to comment	1 hour
	Key ideas	1 hour		
5th week: Antioxidants	Learning manual	2 hours	Forum: Resveratrol	1 hour
	Key ideas	1 hour		
6th week: Nutrition wheel	Learning manual	2 hours	Access to http://www.nutricion.org/	1 hour
	Key ideas	1 hour		
7th week: Nutrition groups	Learning manual	2 hours		
	Key ideas	1 hours		
8th week: Our diet	Learning manual	2 hours	Creation of a diet adapted to a specific case	2 hours
	Key ideas	1 hour		
	Final assessment activities	30 mins		
Others	Link of interest	1 hour		
	Related articles	1 hours		
Total hours		26½ hors		10 hours

3 E-learning or online training

E-learning refers to a virtual learning model and a new training concept. SEACW's Digital Ecosystem will provide modern distance learning through innovative teaching and learning methods that will enable people of different ages and backgrounds to develop their level of proficiency in ICT and active and healthy ageing. Students will be able to develop their career and life goals studying at times and in places which suit them.

3.1 Students at the centre of the learning process

People who are going to study at SEACW's Virtual Ecosystem will have a genuine motivation to learn about active and healthy ageing and the use of new technologies in this field of activity. In most cases, they might be of different ages and backgrounds or they might have to combine studying with an active professional and personal life, often full of challenges.

Given the diversity of its students, SEACW's Digital Ecosystem will have to promote social justice and equality of opportunity in order to create an inclusive learning community. Students will have to be treated with respect and dignity while inequalities will have to be challenged so that everyone can achieve their potential. The trainers and tutors will have to anticipate and respond positively to the different needs and circumstances of SEACW's students.

Students of the SEACW's Virtual Ecosystem will acquire a series of skills to manage information and knowledge in the network, to learn and reinforce attitudes and aptitudes that will distinguish them of other more traditional students. Among these skills, we could mention the following:

- Commitment to constantly improving skills
- Familiarity with intellectual work that involves rigor, critical thinking and method
- Good management of personal time
- Advanced use of new technologies
- Familiarity with working in networks
- Promoting empowerment and discipline of participants
- Promoting awareness of the learning community that blends ideas, experiences and practices with one another
- Learning Enrichment with the electronic coexistence among students located in different physical spaces
- Encouraging the development of creative and constructive thinking

3.2 Spaces and Communication

One of the factors that influence students' perception on the success of online training is the quality of their relationship with the trainer and also with the other students in the group. The quality of this relationship depends on technical factors such as the virtual space and its functioning, but also on the general style of communication that is closely linked to the

communication skills of the participants. The communicative attitude of the trainer/tutor is particularly important because, in addition to its specific functions, provides excellent opportunities for experiential learning.

→ Communication tools

Communication, essential for the generation of a virtual community, is determined primarily by the space and tools available in the virtual classroom or space. The communication tools can be:

- As for the coincidence in time: a) **Synchronous**: Participants must be connected at once and swap messages immediately; Example: chat, instantaneous messages (dialogues, etc.); b) **Asynchronous**: Participants need not be connected simultaneously; a person can write and send a message that another person can read at the moment when connecting and accessing the virtual space; Example: bulletin boards, news.
- As for the receivers: a) **Unidirectional**: the sender sends a message but the sender or the receivers cannot post a reply; it is often used when the trainer wants to communicate some information to the group of students; Example: Professor board; b) **Bidirectional**: a sender and a receiver exchange messages; Example: e-mail; c) **Multidirectional**: the sender can send messages to multiple receivers; Example: forums, e-mail (with the option to send to multiple recipients or receivers).

→ The written language

In a virtual environment communication is written. In comparison with the oral language used in face to face classrooms, written verbal language has its characteristics and has its own advantages and disadvantages that should be considered:

- It is first necessary to master the techniques of writing: write correctly meaning correct spelling and grammar, use stylistic resources and a rich and varied vocabulary, write in the appropriate registry in each case, and so on. In this respect it is very recommended revising text messages before sending them to recipients and taking note that the written code is generally more formal and more accurate than the oral one.
- While not everyone has the same writing skills, there are a number of rules that can improve the communication quality of written messages. We must be aware of the purpose of the message, the recipients, the communication situation and the degree of formality required in order of using the appropriate registry. Moreover, despite the lack of physical stimuli representing nonverbal language (gestures, changes in voice tone or body movements, for example), a written message can be as rich as an oral message in face to face environment.
- In written communication we should elaborate more the message and specify the ideas we want to express but, at the same time, there is no such time pressure and we have more time to reflect, consult documentary sources and elaborate the message. Moreover, though we should try to be brief, messages can be enriched with more or less extensive attachments or links to websites of interest. Messages can be consulted as often as we want, can be reinterpreted and reworked, and they can make reference to what has already been exposed.

→ Communication between the trainer and students

The SEACW Digital Ecosystem will have students of all ages and backgrounds: school students wanting experience in active and healthy ageing, school leavers who choose to begin their careers while they study for a degree in health or social inclusion, people wanting to develop or update their ICT skills, or change career entirely to the field of active and healthy ageing, and elderly people wanting to explore new interests and keep mentally active.

The communication must be appropriate over time and in function of the different ages and backgrounds. Messages must be written when they have a clear function (submit materials or activities, events of the year, a moderate debate, investigate the causes of a detected problem, etc.) and at the proper time (in order to result g effective and provide flexibility in communication). In this way, students will receive assistance when and where they need that will prevent them for feeling alone.

Messages, as we have already noted, must have the adequate registry: an excessively formal message can produce a feeling of remoteness or even hostility, but if it is unnecessarily informal it can give the feeling of lack of quality.

→ Colleagues of a virtual classroom: the peer group

The virtual classroom will be a place where students will permanently interact with trainers and their peer group, where they will experience the learning process and generate knowledge by sharing their ideas or proposals, and where they will resolve, either individually or collectively, doubts about the learning contents.

The most popular area of the SEACW's Digital Ecosystem might be the forums, where students can interact with their peer group and can support each other with advice on everything from what to study to how to stay the course.

3.3 The tutor as a facilitator of e-learning

During the study period, students' learning and their progress in achieving the established objectives will count with the personalised and continuous assistance of the tutor.

In the context of a virtual classroom, the tutor will fulfil guiding and stimulus functions, facilitating learning, fostering communication, and helping and guiding students' own management.

In this kind of training action we consider necessary to use a training methodology based on a collaborative concept that gives more prominence to the student/user being the tutor the person who provides the learning, instead of being only a transmitter of knowledge, pre-established guidelines or orientations. The functions of the tutor are explained in the tutorial system, but are included here in order to make clearer the methodology as the tutor's role and action are intimately connected to the training methodology we plan to follow:

- Develop a plan for students' reception, according to the specific characteristics of the training activity and ensure the compliance with the teaching planning and learning evaluation schedule.
- Orientate and guide students/users in the realization of activities, the use of materials and the use of tools of the virtual learning platform for the acquisition of the competences established for each training activity.

- Encourage the participation of students/users by proposing various reflection and debate activities and organizing individual and team tasks; by using forums, chats and email, the tutor can schedule different virtual activities. Monitoring and evaluation of the activities of the participants, resolving doubts and solving problems, adjusting to the scheduled planning.
- Monitoring and evaluation of the activities of the participants, resolving doubts and solving problems, adjusting to the scheduled planning.
- Encourage participants who remain behind, motivating them to participate and follow the learning pace.. The tutor may propose special activities in addition to the established ones.
- Keep record and track students or participants 'progress, as well as any other incidents or matters relevant to the group.
- Evaluate the participants according to established assessment criteria. Evaluation tests are part of the content and design of the training,
- Create connections between students and the rest of the team responsible for the organization, management and development of the training, reporting of any incident.
- Prepare reports, statistics, news, and all kinds of tracking documents requested about his/her group.

The tutor will encourage students to use communication channels and, if applicable, will create forums on topics of interest in the matter and will schedule periodic chats according to the study plan (the students/users can see it in their messages). Students' participation in training activities will be part of the final evaluation and grades.

3.4 Learning strategies and outcomes in the virtual space

➔ Strategies for technology use

This new training framework brings in an important aspect to be taken into consideration: the added value of technology for online training.

Beyond the skills needed to use new technology, virtual classroom demand students and trainers to develop new strategies for studying management. The manner and order in which the virtual space is navigated, the resources and new developments, the use that students and trainers make of each of them, the connection and disconnection time when working, or providing personal tricks for time saving on internet, are just some of the questions that demand personal strategies of functioning.

There come some recommendations for students based on previous online training experiences and contexts:

- In online training is important to follow the training steadily and continuously. A short connection every day does not require a lot of time and allow students to maintain themselves informed about the process.
- Reviewing the different areas methodically and systematically allow students to capture their own working or studying status as well as that of the group or of the whole virtual community. It may be useful for students to recollect those interesting aspects that they encounter every day, and do not wait until the end of the course.

- It is important to revise personal mailbox every day, for if there is a new message related with the course.
- It is also important to revise regularly shared spaces of the virtual classroom.
- In virtual reality, the presence makes itself noted by intentional communication. Silence sometimes is difficult to interpret. So, students should try not leaving messages to be responded or proposals to be commented.
- By participating regularly, students become part of the team and can build the course together.

→ Strategies for studying

Given the different characteristics of online learning, there are some strategies that will not be useful in the virtual space (e.g., grasp content from hearing the speech of teachers) and others that might be adapted to this new environment.

There are four major types of strategies that students and trainers might develop and/or adapt:

- Support Strategy: one of the biggest handicaps of online training is obviously the apparent solitude of the student: a student alone behind a computer...but in contact with other students also alone behind their computers. But online training disposes of great communication tools to break that stereotype and it is the task of the trainer and students to surpass it. Moreover, students' motivation is a key factor for success in training, so students must take care of their own motivation and work this motivation together with others. The motivation of a student may be intrinsic (interest in training, own expectation...) and extrinsic (that comes from outside: the material, the training, classroom, classmates...).
- Strategies of information processing. Virtual environment and global network present information in various forms (text, image, audio, video etc...) and, to some extent, dispersed (internal to the course, external to the internet, or books, or articles,...). Strategies are needed in order to discern between important and non-important information, to organize the large volume of information which can be accessed, to summarise and elaborate the information. The strategies in this regard can be specified in the way of prioritizing information, how to navigate it, or how to gather and work it out.
- Strategies for customising knowledge. Information is not knowledge in itself. The knowledge is achieved when the new information interacts with developed knowledge schemes and allows knowledge to evolve and even change. And this interaction takes place within the social exchange process itself. So, from all the information students can gather, they must develop strategies that allow this incorporation mediated by knowledge schemes: they should make the new knowledge theirs. These strategies allow students to interpret information critically, allow them to be creative, to extrapolate to new situations, to remember and retrieve information from their knowledge schemes.
- Strategies for meta-cognition. The online training suggests an active and constructive role in the learning process, a role of process manager. Therefore to manage the learning process, we need to know some variables that affect this process: knowing what we know and what we do not know, what we learn and what not, how we learn better, what does it works better for us.... All these aspects have to be used to develop a strategy that should be an action plan for learning achievement. Trainer's role in this

process is to facilitate learning. Trainers must, based on the available tools, develop appropriate facilitating strategies to help students develop and implement the studying or learning strategies they really need.

➔ E-learning outcomes

The quality of students' experience will be key to the reputation of the SEACW's Digital Ecosystem and to attracting and retaining its students. Delivering quality learning and teaching will have to be at the heart of that experience. Quality e-learning outcomes will demonstrate students' progression in their learning while the design of assessment methods should clearly measure the achievement of those outcomes.

It has often been given more importance to the formal aspects of learning outcomes, such as their formulation style, than to their true function in terms of clarifying the real meaning of learning. In the context of virtual training we could argue the importance of learning outcomes as it follows:

- By looking for maximum clarity in determining the learning content that is intended to be transmitted, but understanding that this learning content may be presented in different ways.
- By accommodating as many levels of deepness as students participating in a course.

3.5 Educational materials and digital resources

Virtual learning implies that students have at their disposal all the educational material and digital resources of a module/course.

➔ Educational material

This will contain the proposals for knowledge acquisition as well as the competencies and skills to be acquired during the course. All educational materials will be designed and developed with the support of a team of experts in various fields of interest and teaching, and according to the principles of the pedagogical model of the SEACW's Ecosystem.

Two general types of training activities might be used in e-learning: learning and assessment activities. There are also additional contents such as texts of reference, urls, legal texts, etc.

Learning activities are working proposals on contains that lead to the achievement of established objectives. They imply some action or activity from part of the students, such as reading, hearing, thinking, retaining, synthesising, decision making, etc.

Learning activities may be quite diverse in order to suit each type of learning. It is possible to conceive a training in which there are no learning activities. These are always present, even though it had not been presented as such (for example, courses in which the activity performed by the student is to listen, understand and take note of the oral presentation of an expert).

Each learning process requires a record of its progress that may help detect the acquisition phase of established objectives or the need to adjust the proposed learning or training plan. Assessment activities are also aimed for student learning though they have primarily an evaluation purpose. In these activities, trainer and students value differently the importance of monitoring and controlling the learning process.

According to the order and time of proposed activities as well as to the decisions that arise from performing these activities, we can talk about initial or diagnosis assessment, formative

assessment and summative assessment. It is important to appreciate that while conducting the assessment, different techniques may be used such as self-assessment, mutual evaluation and co-evaluation among the peer groups or teacher assessment.

In some cases, it may be interesting to distinguish some reinforcing or additional activities (compulsory or not), from those designed as core activities in the development of a course. The interaction of all these elements that make up the training should be reflected in the SCP plan.

➔ Digital resources

Digital resources allow an educational centre or platform to carry out the e-learning process. Sometimes, they provide the necessary content to develop the proposed activities. In other cases, they are tools for experimentation and application of acquired learning contents.

It is important to explain to students the role that proposed resources are expected to perform and their level of importance in relation to the established objectives. Some resources may be suitable for acquiring basic learning contents of a formative action, while other resources might constitute useful elements for the trainer to adapt the learning to the specific needs of the students. In interactive environment, we can use various types of digital resources: text; interactive text; virtual characters or avatars; videoconference; simulation; audio/videos; images, etc.

Studying with the SEACW's Digital Ecosystem will involve more than reading texts and writing essays or assignments. In distance learning, virtual microscopes, interactive laboratories and online collaborations have taken the place of home experiment kits sent through the post, while late night TV programmes have been replaced by DVDs and online videos. SEACW's students will receive materials written specifically for the module or course, usually delivered online or as high-quality printed books. These materials may also include everything from text books, CDs and DVDs to extensive web-based resources.

4 SEACW e-learning platform. General premises

SEACW e-learning Platform combines the benefits of the open source Moodle software platform with enterprise-level security, reliability and scalability, enabling the participants to focus on high-quality teaching and learning.

The Moodle software platform was designed using sound pedagogical principles and has been embraced by a broad community of more than 30 million users in over 200 countries. Moodle also has an extensive list of contributing developers who help maintain the code base to keep up with the needs of today's LMS environments. The software has been proven to scale well with implementations that currently serve as many as 600,000 students.

Choosing open source software for a mission-critical application such as eLearning, however, often brings up concerns about being able to properly design, build, and support an IT environment that can deliver consistently high service levels for users.

SEACW e-learning Platform includes the support, customization, instruction, training and other services to tap the full potential of a e-learning platform. SEACW e-learning Platform also devotes ongoing development efforts to the open source Moodle software platform to help the platform continues to grow and evolve. All code contributed by SEACW e-learning Platform is tested for quality assurance to verify its functionality, security and scalability.

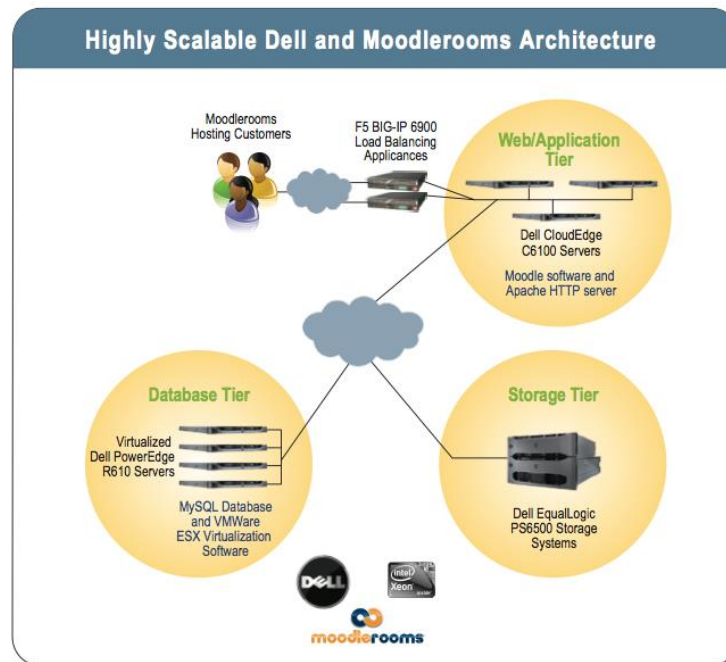
4.1 Services offered by SEACW e-learning Platform

Services offered by SEACW e-learning Platform include:

- Cloud Based Platform —SEACW e-learning Platform is supported by a secure Cloud Based Moodle Server to simplify deployment and ongoing support.
- Help-desk services — To help support onsite pilots, SEACW e-learning Platform offers first-line help to users and coacher as well as context-sensitive help features. These extra help and support features make Moodle even easier to use.
- Instruction/training services — SEACW e-learning Platform offers online and onsite training for SEACW instructors. A blend of instruction will give instructors the skills and deliverables they need to run their own SEACW training activities.
- High service levels – The architecture has been proven to support 500 concurrent users and 50 page requests/second with a single database server. This demonstrates very good scalability for the Ecosystem itself while the SEACW e-learning Platform hosting service provides another dimension of scalability.

4.2 Reference Architecture and HW Infrastructure

We have chosen the reference architecture provide by dell for moodle and moodle rooms (As is shown in the Figure). The horizontally scaled Web/application tier uses load balancing across a pool of servers to support a high volume of user requests. Load balancing is achieved by using an application delivery switch such as the F5 Networks BIG-IP® 6900 platform to distribute user requests across the available server resources. Transactions are dynamically assigned to physical servers to distribute workloads and to enable fast recovery from a hardware failure.



Each physical server in the Web/application tier runs a single instance of the Learning Component and one instance of the Apache HTTP server. Dell ITM PowerEdge™ C6100 servers were chosen for the Web/application tier because of their small footprint and the price/performance advantages of Intel 5500 series processors. It is recommended that each PowerEdge C6100 server be configured with 24 GB of memory and two quad-core Intel 5500 series processors, providing eight CPU cores or 16 threads within each server. The Web/application tier could also be built using other Dell servers such as Dell ITM PowerEdge™ R610 rack mountable servers or Dell ITM PowerEdge™ M610 or M710 blade servers, all of which feature the latest Intel 5500 series processors.

The Web/application tier can be easily scaled by simply deploying additional Dell PowerEdge C6100 servers to meet the increased user load. Each additional server also adds to the availability of the Web/application tier by providing

The SEACW e-learning Platform database is based on MySQL and holds the index for course offerings, student profiles, and student data such as homework and test results. The database tier uses VMware vSphere 4 virtualization technology to enable the platform to scale well.

The Dell PowerEdge R620 server was chosen because of its small footprint, low cost, and powerful performance in virtualized environments. The virtualized database tier allows SEACW e-learning Platform to take full advantage of the powerful Intel 5500 series processors on the Dell PowerEdge R610 servers.

➔ Higher Utilization Through Virtualization

VMware ESXi 5.0 virtualization technology enables each physical server in the database tier to run multiple instances of the Red Hat Enterprise Linux operating system and multiple MySQL databases.

VMware ESXi 5.0 abstracts server processor, memory, storage and networking resources so that each operating system instance can have direct control over specific system resources. Applications are then installed and can operate on these virtual machines (VMs) in much the same way that they run on separate physical servers. VMware is the market-leading provider of hypervisor technology with production-proven installations at thousands of customers of all sizes.

An important reason for implementing virtualization in the database tier is that modern CPUs such as the Intel 5500 series processors are so powerful that a single instance of the operating system and one database typically cannot fully utilize the CPU. Thus, it's more cost-effective to add more memory to a server and divide its resources into multiple virtual machines than it is to deploy multiple physical servers where each server is only partially utilized. To optimize performance and database server resource utilization, it is recommended that each virtual machine in the database tier be sized with two virtual CPUs and approximately 4 GB of memory.