

## D.4.2 Methodology of Learning-Teaching



Work Package:	4
Task:	2
Deliverable due date:	February 2026
Deliverable issue date:	
Responsible partner:	UD
Author:	Campos, J.A.; Díez, F. & del Val, J.L.
Co-authors:	...
Deliverable number:	D4.2
Deliverable type:	R
Status of the deliverable:	Final
Dissemination level:	PU
First Created:	July 2025
Last Updated:	February
Version:	6

## DISCLAIMER



*Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor the granting authority can be held responsible for them.*

## Table of Contents

<b>Executive Summary</b> .....	<b>4</b>
<b>1. Introduction</b> .....	<b>5</b>
1.1 Purpose and Scope .....	5
1.2 Objectives of the Model .....	5
1.3 Target Audience .....	6
1.4 Theoretical Foundations .....	6
<b>2. The Learning-Teaching Model Cycle</b> .....	<b>7</b>
2.1 Phase 1: Experiential Context.....	8
2.2 Phase 2: Reflective Observation.....	9
2.3 Phase 3: Conceptualisation .....	10
2.4 Phase 4: Active Experimentation .....	10
2.5 Phase 5: Assessment and Feedback .....	11
<b>3. Bloom's Taxonomy: Structuring Learning Objectives</b> .....	<b>12</b>
3.1 Overview .....	12
3.2 Relevance to the LeaderSHIP Framework .....	13
3.3 Learning Domains .....	14
3.4 Activities and Assessments in Bloom's Taxonomy.....	16
<b>4. Mapping Bloom's Taxonomy to LeaderSHIP Skill Levels</b> .....	<b>18</b>
4.1 Correspondence Table .....	20
<b>5. Delivery Modalities</b> .....	<b>21</b>
5.1 Four Delivery Modalities .....	21
5.2 Alignment with the Learning-Teaching Model Cycle .....	22
5.3 Practical Guidance for Modality Selection .....	24
<b>6. Contextual Adaptation: Learner Profiles and Institutional Resources</b> .....	<b>25</b>
6.1 Adapting to Learner Profiles .....	25
6.2 Adapting to Institutional Resources.....	26
6.3 A Practical Approach to Adaptation.....	27
<b>7. Applying the Framework: Activities and Assessments by Skill Level</b> .....	<b>29</b>
7.1 Beginner / Basic Level.....	30
7.2 Intermediate Level.....	31
7.3 Proficient Level.....	32
7.4 Expert Level.....	33
<b>8. Bibliography</b> .....	<b>35</b>

## List of Figures

Figure 1 — The LeaderSHIP Learning-Teaching Model Cycle .....	7
Figure 2 — Bloom's Revised Taxonomy (Anderson & Krathwohl, 2001).....	13
Figure 3 — The Three Learning Domains (KSA) and Their Hierarchies .....	14
Figure 4 — LeaderSHIP Skill Levels Aligned with Bloom's Taxonomy.....	19
Figure 5 — Delivery Modalities and Learning Phases: Alignment Matrix.....	23
Figure 6 — Instructor's Quick-Start Guide to Applying the Framework .....	29

## List of Tables

Table 1 — Revised Cognitive Domain in Bloom's Taxonomy .....	15
Table 2 — The Affective Domain in Bloom's Taxonomy.....	16
Table 3 — Activities and Assessments for the Cognitive Domain .....	17
Table 4 — Activities and Assessments for the Affective Domain .....	18
Table 5 — LeaderSHIP Levels and Bloom's Taxonomy Correspondence .....	20
Table 6 — Activities and Assessments for Beginner/Basic Level.....	25
Table 7 — Activities and Assessments for Intermediate Level .....	31
Table 8 — Activities and Assessments for Proficient Level .....	32
Table 9 — Activities and Assessments for Expert Level .....	33
Table 10 — Delivery Modality Comparison .....	34

## Executive Summary

The LeaderSHIP 4 Skills project, funded under the European Union's Erasmus+ Programme, develops a comprehensive learning framework for the maritime technology and shipbuilding industries. This document presents the project's **Teaching-Learning Model**: a structured, cyclical approach to skills development that serves as a universal guide for both instructors and learners across the sector.

The model integrates two established educational foundations. First, it draws on the **experiential learning tradition** refined over decades at the University of Deusto, itself rooted in nearly five centuries of Jesuit educational practice across a global network of over 200 universities and 3,700 schools. Second, it incorporates **Bloom's Revised Taxonomy** (Anderson & Krathwohl, 2001) to provide a systematic framework for defining learning objectives, designing activities, and evaluating competence attainment.

The resulting framework is organised around a **five-phase learning cycle** (Experiential Context, Reflective Observation, Conceptualisation, Active Experimentation, and Assessment & Feedback) that places the learner at the centre of a dynamic, iterative process. Each phase is mapped against four progressive **skill development levels** (Beginner, Intermediate, Proficient, and Expert), which in turn correspond to specific cognitive and affective domains within Bloom's Taxonomy.

Recognising that the same pedagogical model must operate across very different delivery contexts, the framework also addresses four **teaching modalities** — face-to-face instruction, work-based learning (WBL), MOOCs and online delivery, and blended learning — and provides guidance on how the five-phase cycle can be implemented within each. A dedicated chapter on **contextual adaptation** ensures that institutions can tailor syllabi, materials, and assessment approaches to the specific characteristics of their learner cohorts and the resources available at their training centres.

This document is intended for university instructors, vocational training providers, curriculum designers, and programme coordinators working within or adjacent to the European maritime and shipbuilding sector. It provides concrete tables of activities and assessments, visual reference diagrams, and practical guidance to enable immediate implementation in both academic and workplace learning environments.

# 1. Introduction

## 1.1 Purpose and Scope

The European maritime technology and shipbuilding industries face a dual challenge: maintaining global competitiveness while adapting to rapid technological transformation in areas such as digitalisation, green shipping, and advanced manufacturing. Addressing this challenge requires not only technical innovation but also a fundamental investment in human capital — specifically, in the skills, competencies, and adaptive capacities of the sector’s current and future workforce.

The LeaderSHIP 4 Skills project responds to this need by developing a transferable, evidence-based learning framework. Its primary aim is to establish a teaching-learning model that fosters innovation, resilience, and sustainable cooperation on skills development across European maritime education and training institutions.

### Sector Relevance

*The maritime and shipbuilding sector employs over 2 million workers across Europe and generates more than €130 billion in annual turnover. As the industry transitions towards zero-emission vessels, autonomous shipping, and Industry 4.0 production methods, the gap between existing workforce competencies and emerging skill requirements continues to widen. This framework directly addresses that gap.*

## 1.2 Objectives of the Model

A teaching-learning model serves as a structured roadmap that guides both educators and learners through a coherent, purposeful educational process. Rather than prescribing a rigid sequence, the LeaderSHIP model establishes a flexible architecture within which specific learning programmes, modules, and activities can be designed and adapted. Its core objectives are as follows:

- **Enhancing learner engagement.** By grounding each learning experience in the learner’s existing knowledge, professional context, and personal motivations, the model ensures that content is perceived as relevant and meaningful from the outset.
- **Fostering critical thinking.** The model systematically encourages learners to question assumptions, reflect on observations, and analyse information from multiple perspectives — competencies that are essential for problem-solving in complex industrial environments.
- **Facilitating deep knowledge integration.** Through a structured progression from contextualisation to conceptualisation, the model helps learners connect new theoretical knowledge with their existing mental frameworks, promoting durable understanding rather than superficial memorisation.

- **Promoting practical application.** Experiential learning opportunities — including projects, internships, laboratory work, and design-based activities — bridge the gap between theoretical understanding and professional practice.
- **Supporting continuous assessment and feedback.** Multiple forms of evaluation (personal reflection, formative feedback, and summative assessment) enable learners to identify strengths, address weaknesses, and track their development over time.

### 1.3 Target Audience

This framework is designed for implementation across a broad range of educational settings within the maritime and shipbuilding sector. Its primary audiences include undergraduate and postgraduate university students enrolled in programmes related to naval architecture, marine engineering, maritime logistics, and related disciplines; vocational training students pursuing technical qualifications in shipbuilding trades, port operations, or maritime technology; and instructors, trainers, and curriculum designers responsible for delivering education and training across these programmes.

The model is deliberately designed to be **level-agnostic**: its five-phase cycle applies equally to a first-year undergraduate module on ship structures and to an advanced professional development course on autonomous vessel systems. The differentiation lies not in the model's architecture but in the selection of activities, assessments, and Bloom's Taxonomy levels appropriate to each learner cohort.

### 1.4 Theoretical Foundations

The LeaderSHIP teaching-learning model stands on two well-established pillars of educational theory and practice.

The first is the **experiential learning tradition** as developed and refined at the University of Deusto. The Deusto model, which benefits from the pedagogical heritage of the Society of Jesus (Jesuits) — founders of their first educational institution 476 years ago and operators of a worldwide network of over 200 universities and more than 3,700 schools — emphasises a cyclical process in which observation, reflection, conceptualisation, and action are continuously interwoven. This tradition places the learner's lived experience at the starting point of every educational encounter.

The second pillar is **Bloom's Taxonomy**, originally proposed by Benjamin Bloom and colleagues in 1956 and subsequently revised by Anderson and Krathwohl in 2001. Bloom's framework provides a hierarchical classification of cognitive and affective learning objectives, enabling educators to design activities and assessments that progressively develop higher-order thinking

skills. Its integration into the LeaderSHIP model ensures that skill development is systematic, measurable, and aligned with internationally recognised educational standards.

By combining the cyclical, learner-centred architecture of the Deusto tradition with the structured competency progression of Bloom's Taxonomy, the LeaderSHIP framework creates a robust and adaptable tool for education and training in the maritime sector.

## 2. The Learning-Teaching Model Cycle

Learning should not be passive and receptive. To be meaningful, it must promote exploration, initiative, reflection, and action. The cognitive abilities that learners deploy when engaging with content — rather than the mere accumulation of facts — are the true instruments of understanding. These abilities enable learners to grasp theoretical approaches, apply knowledge to new situations, and develop the professional competencies required in a rapidly evolving industrial sector.

The LeaderSHIP model conceptualises education and training as a **dynamic, iterative cycle** consisting of five interconnected phases. This cyclical structure reflects the recognition that learning is not a linear journey from ignorance to mastery but rather an ongoing process of contextualisation, reflection, knowledge construction, practical application, and evaluation. Learners may revisit earlier phases, apply their understanding in new contexts, and engage in continuous self-assessment to guide their personal and professional growth.

The five phases of the cycle are presented in Figure 1 and described in detail in the sections that follow.

## LeaderSHIP Learning-Teaching Model Cycle

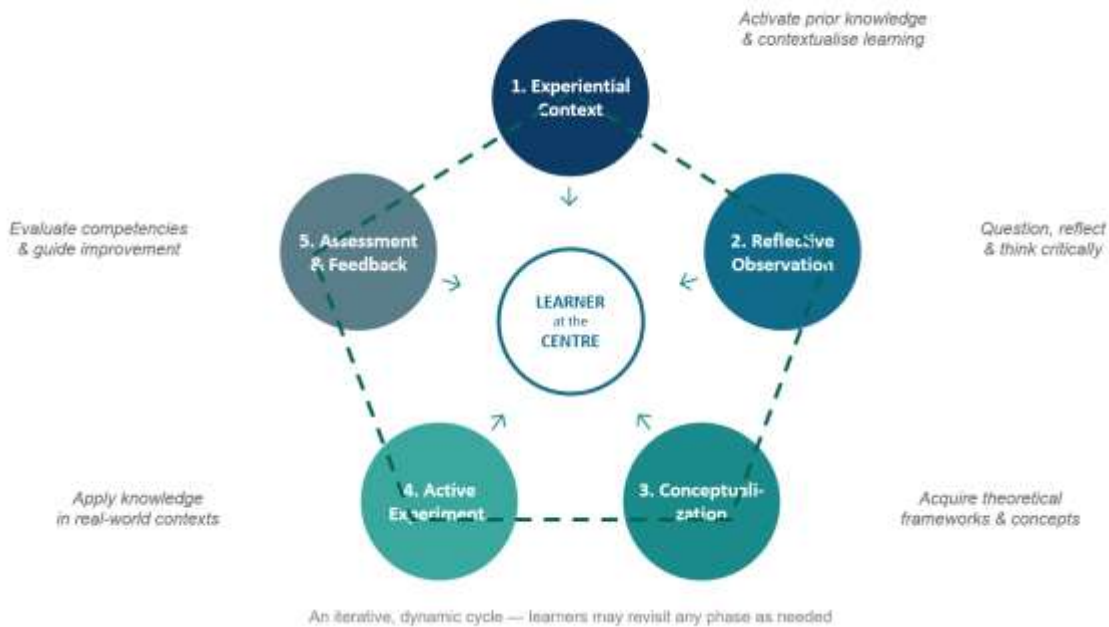


Figure 1 — The LeaderSHIP Learning-Teaching Model Cycle

### 2.1 Phase 1: Experiential Context

The cycle begins with the learner. Every educational encounter should start by activating what learners already know and connecting the subject matter to their existing experiences, motivations, and contexts. The purpose of this initial phase is to provide a broad, accessible overview of the topic or skill to be developed, highlighting its relevance and practical applicability.

For information to become knowledge, it must be contextualised. Learners do not arrive as blank slates; they bring with them a rich tapestry of prior learning, professional experiences, cultural perspectives, and personal interests. Effective education recognises and builds upon this foundation. As established in educational research, **interest** — whether directed towards cognitive content or affective engagement — plays a decisive role in learning outcomes. Learners who perceive a topic as relevant to their lives and aspirations tend to demonstrate greater attention, persistence, and depth of understanding.

In practical terms, this phase may involve strategies such as establishing connections with learners' prior knowledge, exploring diverse experiences within the group, analysing preconceptions about the subject, setting expectations for the learning journey, and gathering contextual data that will inform subsequent phases. These strategies can be implemented individually or collaboratively, facilitating the exchange of perspectives and the identification of both shared and divergent viewpoints.

### **Maritime Application — Experiential Context**

*In a module on sustainable shipbuilding materials, this phase might begin with learners sharing their direct experience of traditional materials (steel, aluminium) from shipyard visits or prior coursework, followed by a facilitated discussion of current industry challenges such as weight reduction, corrosion resistance, and environmental regulations. A brief case study of a recent vessel project (e.g. a hybrid ferry or an offshore wind installation vessel) can contextualise the theoretical content that follows.*

## 2.2 Phase 2: Reflective Observation

Observation is an inherent method of learning, but it acquires its full educational value when combined with structured reflection and internalisation. In this second phase, learners are encouraged to move beyond surface-level reception of information and to engage in **critical questioning** of what they have observed, experienced, or been presented with in the contextualisation phase.

Meaningful learning requires the learner to question both the subject matter and their own relationship to it. Reflective observation translates raw observations into ideas, goals, and analytical frameworks. It enables learners to concentrate their existing knowledge on the data at hand, deepening their understanding and generating insights that mere passive reception cannot produce.

The questions that drive this phase may range from simple clarification ("What exactly is this?") to deeper interrogation ("What contradictions does this present to my existing understanding?", "How does this challenge my assumptions?", "What are the practical implications for my professional context?"). Importantly, the practice of questioning and reflection is not limited to cognitive development; sharing questions and reflections within a group serves as a foundation for **teamwork and interpersonal skills** — competencies that are increasingly valued across the maritime sector.

### **Maritime Application — Reflective Observation**

*After an initial presentation on Classification Society rules for structural design, learners might be asked: "Which of these requirements surprises you? How do they compare with what you assumed about ship safety? What tensions exist between safety requirements and commercial pressures?" In a vocational context, apprentices returning from a shipyard placement could reflect in writing on the gap between what they learned in the classroom and what they observed on the shop floor.*

## 2.3 Phase 3: Conceptualisation

Having established context and reflected critically, learners are now prepared to engage with the **theoretical frameworks, principles, and terminology** relevant to the subject. The aim of this phase is to bring theory closer to the learner — not as an abstract exercise in memorisation, but as an active process of knowledge construction.

Conceptual learning involves the acquisition of scientific terminology, factual knowledge, analytical methods, strategic principles, and theoretical models. Critically, it relies on the application of higher-order cognitive skills such as comprehension, analytical and synthetic thinking, critical judgement, and divergent thinking. When learners engage these abilities, they do not simply absorb information; they situate concepts and data within their own intellectual frameworks, thereby expanding their personal knowledge base in a meaningful and durable manner.

This phase can be structured flexibly to accommodate the diverse needs and learning preferences of individual learners and teams. Some learners may thrive in autonomous, self-paced environments that allow deep exploration of areas of personal interest. Others may benefit from the synergistic exchange of ideas and collective problem-solving inherent in team-based approaches. Instructors should remain attentive to these individual differences and adjust their conceptualisation strategies accordingly, recognising that the most effective approach is one that meets each learner where they are.

The consolidation of conceptual knowledge is facilitated through activities that require learners to comprehend and manage specialised terminology, identify similarities and differences across theories, analyse cause-and-effect relationships, summarise key findings from research, draw analogies between different approaches, propose alternative solutions, and determine effective strategies for solving complex problems.

### Maritime Application — Conceptualisation

*In a course on marine propulsion systems, this phase would involve structured engagement with the theoretical principles of hydrodynamics, thermodynamics, and engine performance. Learners might work through comparative analyses of conventional diesel, LNG, and hydrogen fuel cell propulsion systems, using concept maps to visualise the relationships between efficiency, emissions, operational cost, and regulatory compliance (IMO 2050 targets).*

## 2.4 Phase 4: Active Experimentation

At this stage of the cycle, learners move from understanding to **doing**. The Active Experimentation phase bridges the divide between theory and practice through a diverse array of hands-on, applied learning experiences. These may include exercises, laboratory work, internships, design projects, research activities, simulations, and collaborative problem-solving tasks.

This phase empowers learners to directly apply the concepts, theories, and models they have studied — testing their understanding against real-world conditions, strengthening their grasp of the material, and developing the practical competencies that employers in the maritime sector require. It is through this integration of theory and practice that learners cultivate higher-order thinking abilities and demonstrate mastery in authentic, contextual settings.

The experimentation phase lends itself particularly well to **collaborative work**, as it frequently requires the application of diverse skills and competencies that can be synergistically leveraged by team members. Both technical and social dimensions should be addressed: on the technical side, learners explore procedural strategies, resource requirements, and the advantages and limitations of different methodologies; on the social side, they consider the broader implications of their work — including environmental, economic, ethical, and community impacts — thereby cultivating a holistic, socially responsible approach to professional practice.

#### **Maritime Application — Active Experimentation**

*In a naval architecture programme, learners might undertake a group design project for a small coastal vessel, applying structural analysis software, conducting stability calculations, and preparing preliminary general arrangement drawings. In a vocational setting, apprentices could complete a supervised welding qualification test using procedures certified to Classification Society standards. In either case, the project is structured so that learners must justify their design or technical choices with reference to the theoretical knowledge acquired in Phase 3.*

## 2.5 Phase 5: Assessment and Feedback

The learning cycle is completed — and renewed — through a comprehensive evaluation of the knowledge, skills, and competencies developed throughout the preceding phases. Assessment within the LeaderSHIP model is not merely a grading exercise; it is a multidimensional process designed to consolidate learning, identify areas for further development, and prepare the learner for the next cycle of skill acquisition.

The model distinguishes three levels of assessment:

1. **Personal level.** This dimension transcends technical evaluation and enters the realm of self-reflection. Learners are encouraged to examine their own capacities, limitations, motivations, and underlying attitudes and beliefs. The objective is to empower learners to confront what they have acquired — both formally and informally — and to connect that learning meaningfully to their evolving professional identity.
2. **Training level.** This dimension centres on **formative feedback** as the primary driver of learner progress. Constructive feedback on learning achievements, difficulties encountered, and errors to be corrected provides the basis for improvement and optimal application of acquired knowledge and skills. Strategies at this level include formative

self-evaluation, diagnosis of learning styles, portfolio-based feedback on exercises and activities, and personalised follow-up of each learner's development.

3. **Summative level.** This dimension evaluates the accountability of each learner's work and study. Its purpose is to assess the performance achieved and, ultimately, to accredit the level of competence attained. Summative evaluation provides a formal, standardised measure of progress against the learning objectives established for the programme or module.

The comprehensive evaluation process serves as both the capstone of the current learning cycle and the gateway to the next. Its true purpose is to ascertain whether the learner has attained the intended level of competence: if so, they advance to a new cycle of development at a higher proficiency level; if not, the assessment identifies the specific phases that must be revisited to achieve the required standard.

#### **Maritime Application — Assessment and Feedback**

*For a module on maritime safety management, personal-level assessment might involve a reflective essay on the learner's evolving understanding of safety culture in the industry. Training-level assessment could take the form of peer review of a risk assessment exercise, with structured feedback using a rubric aligned to the module's learning outcomes. Summative assessment might comprise a formal examination on ISM Code requirements combined with a graded case study analysis of a real maritime incident.*

## 3. Bloom's Taxonomy: Structuring Learning Objectives

### 3.1 Overview

Bloom's Taxonomy is a hierarchical classification of the learning objectives that educators set for their learners. Originally proposed in 1956 by Benjamin Bloom and colleagues at the University of Chicago, the taxonomy provides a structured framework for organising cognitive skills from the most basic (recall of facts) to the most complex (creation of new knowledge). It is one of the most widely used and enduring tools in educational design worldwide, informing curriculum development, instructional strategies, and assessment practices across virtually every discipline.

The revised taxonomy, published by Anderson and Krathwohl in 2001, reframed the original six categories as active verbs reflecting cognitive processes: **Remember**, **Understand**, **Apply**, **Analyse**, **Evaluate**, and **Create**. This revision emphasised that the categories represent a progressive hierarchy: each level subsumes and builds upon the cognitive abilities developed at the levels below it. Learners are expected to progress upward through this hierarchy as they develop deeper expertise in a subject.

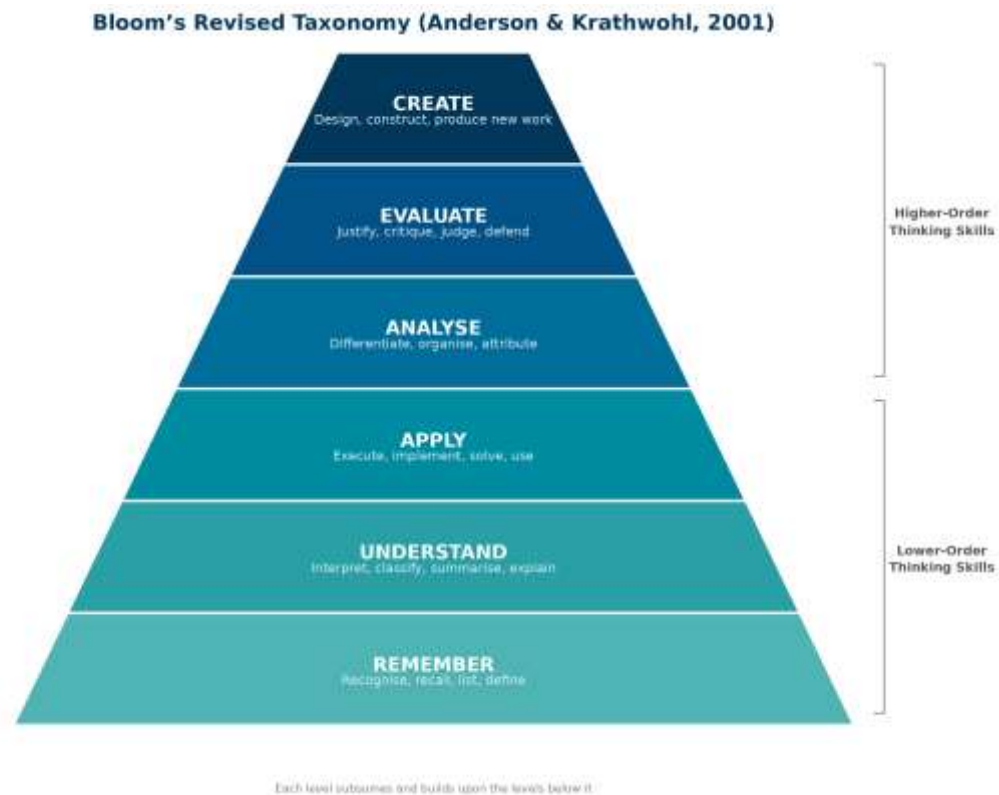


Figure 2 — Bloom's Revised Taxonomy (Anderson & Krathwohl, 2001)

### 3.2 Relevance to the LeaderSHIP Framework

Bloom's Taxonomy serves three essential functions within the LeaderSHIP teaching-learning model:

- **Defining learning objectives.** By classifying objectives according to their cognitive and affective demands, the taxonomy enables instructors to set clear, measurable goals for each module, session, or activity.
- **Designing aligned instruction.** The taxonomy provides a vocabulary for matching teaching activities to the cognitive level required. Flashcards and reading assignments develop recall; case studies and debates develop analytical and evaluative thinking.
- **Ensuring valid assessment.** Assessment tasks can be designed to test the specific cognitive or affective level targeted by the learning objectives, ensuring that instruction and evaluation are coherently aligned.

As a practical tool, Bloom's Taxonomy allows instructors to plan progressive programmes in which earlier sessions build foundational knowledge (Remember, Understand) and later sessions require learners to apply, analyse, evaluate, and ultimately create. At each stage, the instructor can select from a repertoire of activities and assessment methods calibrated to the appropriate level of cognitive demand.

### 3.3 Learning Domains

Bloom’s Taxonomy encompasses three distinct learning domains, commonly referred to by the acronym **KSA**: Knowledge (cognitive), Skills (psychomotor), and Attitudes (affective). The goal of any complete educational programme is that, by the end of the learning process, learners will have acquired new knowledge, developed new skills, and formed new attitudes towards the subject matter. Within the LeaderSHIP framework, the cognitive and affective domains are the primary focus, as they are most directly applicable to the skills development needs of the maritime and shipbuilding sector.

Figure 3 illustrates the three domains and their respective hierarchies.

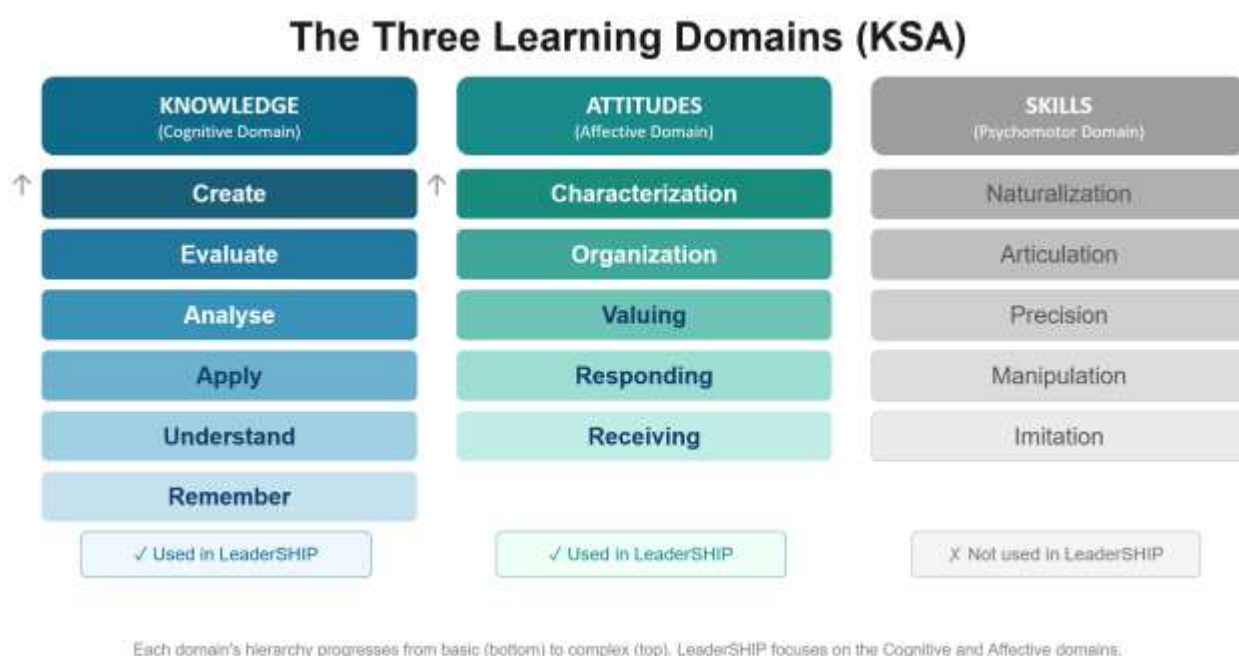


Figure 3 — The Three Learning Domains (KSA) and Their Hierarchies

#### The Cognitive Domain

The cognitive domain concerns the development of intellectual skills: the ability to recall, comprehend, apply, analyse, evaluate, and create. It is organised as a hierarchy spanning from basic memorisation (building a foundational knowledge base) to the creation of original work based on previously acquired information. Learners are expected to progress through this hierarchy in a broadly sequential manner, although real-world learning often involves movement between levels as understanding deepens.

Table 1 presents the six levels of the revised cognitive domain, together with behavioural descriptions and representative action verbs. These verbs are particularly useful for writing learning objectives and designing aligned assessment tasks.

Level	Description	Sample Action Verbs
Remember	Exhibit memory of previously learned material by recalling facts, terms, basic concepts, and answers.	arrange, define, choose, identify, indicate, label, list, locate, match, memorize, name, outline, recall, recognize, repeat, reproduce, select, state
Understand	Construct meaning from instructional messages by organizing, comparing, translating, interpreting, and stating main ideas.	categorize, classify, compare, describe, discuss, distinguish, estimate, explain, express, generalize, give examples, illustrate, interpret, paraphrase, predict, present, report, restate, summarize, translate
Apply	Solve problems in new situations by applying acquired knowledge, facts, techniques, and rules.	calculate, change, complete, compute, demonstrate, design, execute, illustrate, implement, modify, operate, organize, prepare, produce, solve, use
Analyse	Examine and break information into parts by identifying motives or causes; make inferences and find evidence to support generalisations.	categorize, compare, contrast, criticize, debate, detect, differentiate, discriminate, distinguish, experiment, identify, infer, investigate, organize, question, relate, separate, test
Evaluate	Present and defend opinions by making judgements about information, validity of ideas, or quality of work based on criteria.	argue, assess, check, compare, conclude, contrast, criticize, critique, defend, determine, examine, grade, judge, justify, measure, recommend, rank, rate, reflect, support
Create	Compile information in a new way by combining elements in a new pattern or proposing alternative solutions.	arrange, combine, compose, construct, design, develop, devise, formulate, generate, hypothesize, integrate, plan, produce, propose, reconstruct, revise, synthesize, transform

*Table 1 — Revised Cognitive Domain in Bloom’s Taxonomy*

## The Affective Domain

The affective domain addresses the attitudes, values, interests, and emotional engagement of learners. Although often underestimated in favour of cognitive and psychomotor learning, research consistently identifies the affective domain as a critical gateway to deep and lasting education (Pierre & Oughton, 2007). Affective learning cuts across all other domains, incorporating cognitive and behavioural dimensions while exploring values and feelings.

The hierarchy of the affective domain begins with **Receiving** (awareness and willingness to listen) and progresses through **Responding** (active participation), **Valuing** (commitment and motivation), **Organization** (integration of values into a coherent system), and **Characterization** (consistent behaviour reflecting internalised values). Table 2 presents these levels with representative verbs.

Level	Description	Sample Action Verbs
Receiving	Being aware of or attending to something in the environment.	ask, choose, describe, follow, give, hold, identify, locate, name, point to, select, reply
Responding	Showing new behaviours as a result of experience; actively participating.	answer, assist, comply, discuss, greet, help, label, perform, practice, present, read, recite, report, tell, write
Valuing	Demonstrating definite involvement or commitment; finding worth in learning.	complete, demonstrate, differentiate, explain, follow, initiate, invite, join, justify, propose, select, share, study
Organization	Integrating a new value into one's existing set of values and priorities.	adhere, alter, arrange, combine, compare, complete, defend, explain, formulate, generalize, identify, integrate, modify, organize, prepare, relate
Characterization	Acting consistently with internalised values; values control behaviour.	act, discriminate, display, influence, listen, modify, perform, practice, propose, question, revise, serve, solve, verify

*Table 2 — The Affective Domain in Bloom's Taxonomy*

### 3.4 Activities and Assessments in Bloom's Taxonomy

Activities and questioning are the fundamental tools at the instructor's disposal. Both require learners to engage different cognitive processes when interacting with content, and the quality of the activities set and questions asked has a direct impact on learner progress. By aligning activities and assessments with the appropriate level of Bloom's Taxonomy, instructors ensure that adequate cognitive demands are placed on learners, facilitating challenge, engagement, and effective learning.

Tables 3 and 4 present collections of learning activities and assessments organised by Bloom's Taxonomy level for the cognitive and affective domains respectively. Each activity and assessment is assigned a unique reference code (A for activities, E for assessments) to enable cross-referencing with the skill-level matrices presented in Chapter 7. These collections, adapted

from the work of Dalton and Smith (1986) and aligned with LeaderSHIP objectives, provide instructors with a practical starting point for curriculum design.

Level	Learning Activities (A)	Assessments (E)
Remember	A1 Flashcards; A2 Highlight key words; A3 Lists; A4 Memory activities; A5 Reading materials; A6 Watching presentations and videos	E1 Clicker questions; E2 Fill-in-the-blanks; E3 Label; E4 Match; E5 Multiple choice; E6 Quizzes; E7 True/false questions
Understand	A11 Case studies; A12 Concept maps; A13 Demonstrations; A14 Diagrams; A15 Flowcharts; A16 Gamification; A17 Group discussions; A18 Lightboard; A19 Mind maps; A20 Matrix activity; A21 Play/sketches; A22 Summarise; A23 Think-pair-share	E6 Quizzes; E14 One-minute paper; E18 Concept map; E19 Summary; E20 Essay; E21 Diagrams; E22 Infographics; E23 Matrix activity; E24 Presentation; E25 Provide examples; E26 Short answers
Apply	A11 Case studies; A12 Concept maps; A16 Gamification; A31 Calculate; A32 Creating examples; A33 Demonstrations; A34 Flipped classrooms; A35 Gallery walks; A36 Group work; A37 Lab experiments; A38 Mapping; A39 Prezi	E24 Presentation; E27 Short answers; E34 Discussion board post; E35 E-portfolio; E36 Lab reports; E38 Problem-solving tasks; E39 Tests
Analyse	A11 Case studies; A12 Concept maps; A44 Compare and contrast; A15 Flowcharts; A45 Discussions; A46 Graphs; A47 Group investigation; A48 Report/survey; A49 Think-pair-share; A50 Review paper	E14 One-minute paper; E49 Analysis paper; E50 Case studies; E51 Evaluation criteria; E52 Critique hypothesis/procedures; E53 Muddiest point; E54 Research paper; E55 Review paper
Evaluate	A19 Mind maps; A50 Review paper; A53 Debates; A54 Journal; A55 Pros and cons list	E14 One-minute paper; E60 Argumentative/persuasive essay; E61 Debates; E62 Discussions; E63 Presentation; E64 Alternative solutions; E65 Report
Create	A19 Mind maps; A59 Brainstorm; A60 Decision-making tasks; A61 Develop new solutions or plans; A62 Performances; A63 Presentations; A64 Research projects; A65 Written assignment	E70 Develop criteria to evaluate product/solution; E71 Grant proposal; E72 Outline alternative solutions; E73 Research proposal

Table 3 — Activities and Assessments for the Cognitive Domain

Level	Learning Activities (A)	Assessments (E)
Receiving	A6 Watching presentations/videos; A8 Attend focus groups; A9 Listen to presentations; A10 Read articles/papers/textbooks	E8 Feedback forms; E9 Fill-in-the-blanks; E10 Knowledge survey; E11 List; E12 Match; E13 Memory tests; E14 One-minute paper; E15 Qualitative interviews; E16 Recall and verbalise reactions; E17 Summary of key points
Responding	A17 Group discussions; A24 Active class participation; A25 Brainstorm ideas; A26 Present to audience; A27 Problem-solving activities; A28 Role-play; A29 Written assignments; A30 Questionnaires	E14 One-minute paper; E28 Answer questions; E29 Follow procedures; E30 Critical questioning; E31 Feedback and peer evaluation; E32 Questionnaires; E33 Willingness to participate
Valuing	A40 Debates; A41 Opinionated writing; A42 Reflection paper; A43 Self-report	E32 Questionnaires; E41 Attendance; E42 Quality of submitted work; E43 Meet deadlines; E44 Proposals of new plans; E45 Rating scale; E46 Reflection paper; E47 Report on activities; E48 Ungraded paper
Organization	A51 Analyse and contrast; A52 Concept map (formal and informal experiences)	E32 Questionnaires; E56 Develop realistic aspirations; E57 Prioritise time to meet goals; E58 Focus groups; E59 Ability to solve new problems
Characterization	A56 Critical reflection; A57 Group projects; A58 Self-report goals	E66 Criteria for group projects; E67 Self-evaluation; E68 SMART goals

Table 4 — Activities and Assessments for the Affective Domain

## 4. Mapping Bloom’s Taxonomy to LeaderSHIP Skill Levels

To operationalise the integration of Bloom’s Taxonomy within the LeaderSHIP framework, a systematic mapping has been conducted between the taxonomy’s cognitive and affective domains and four progressive skill development levels. This mapping enables instructors to select the appropriate combination of learning objectives, activities, and assessments for any given learner cohort, regardless of the specific subject or skill being taught.

The four LeaderSHIP skill levels are defined as follows:

- **Beginner/Basic.** Learners at this level are developing foundational knowledge and awareness. They correspond to the Remember and Understand levels of the cognitive domain, and the Receiving and Responding levels of the affective domain.
- **Intermediate.** Learners at this level can apply knowledge to new situations and demonstrate commitment to learning. They correspond to the Apply level (cognitive) and the Valuing level (affective).
- **Proficient.** Learners at this level can analyse complex information, identify patterns, and integrate values into a coherent professional framework. They correspond to the Analyse level (cognitive) and the Organization level (affective).
- **Expert.** Learners at this level can evaluate, critique, and create original solutions. They demonstrate consistent professional behaviour grounded in internalised values. They correspond to the Evaluate and Create levels (cognitive) and the Characterization level (affective).

It is important to note that, while four levels are defined here, individual educational institutions may consolidate them as appropriate to their programmes (for example, grouping Beginner and Intermediate into a single “Foundation” level, or combining Proficient and Expert into an “Advanced” level).

Figure 4 provides a visual representation of this alignment.

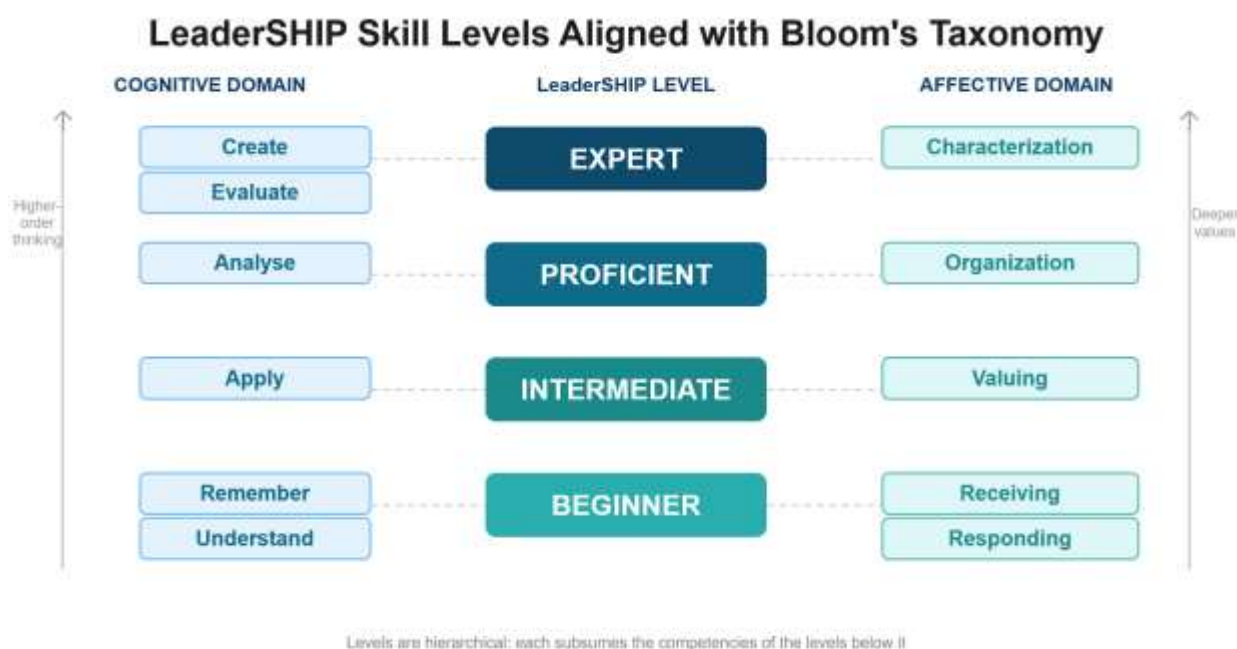


Figure 4 — LeaderSHIP Skill Levels Aligned with Bloom's Taxonomy

## 4.1 Correspondence Table

LeaderSHIP Level	Focus	Cognitive	Affective	Learner Capability
Beginner / Basic	Foundation building	Remember	Receiving	Recall facts, follow instructions, demonstrate awareness
Beginner / Basic	Foundation building	Understand	Responding	Explain concepts, actively participate, engage with content
Intermediate	Guided application	Apply	Valuing	Use knowledge in new situations, show commitment and motivation
Proficient	Independent analysis	Analyse	Organization	Break down complex problems, integrate values, prioritise goals
Expert	Autonomous creation	Evaluate	Characterization	Judge, critique, and defend positions; act on internalised values
Expert	Autonomous creation	Create	—	Design, produce, and propose original solutions and strategies

Table 5 — LeaderSHIP Levels and Bloom’s Taxonomy Correspondence

## 5. Delivery Modalities

The five-phase learning-teaching model and its alignment with Bloom's Taxonomy constitute the **pedagogical architecture** of the LeaderSHIP framework. This architecture is independent of the medium through which instruction is delivered: the same cycle of contextualisation, reflection, conceptualisation, experimentation, and assessment applies whether a course takes place in a university lecture hall, on a shipyard production floor, through an online platform, or across a combination of these settings.

However, the choice of delivery modality significantly influences **how** each phase is implemented in practice. Certain modalities offer natural strengths for particular phases, while others require more deliberate instructional design to ensure that all five phases are adequately addressed. This chapter defines the four principal delivery modalities envisaged within the LeaderSHIP project and examines their alignment with the learning cycle.

### 5.1 Four Delivery Modalities

#### Face-to-Face Instruction

Traditional classroom-based or workshop-based delivery, in which instructors and learners interact directly in a shared physical space. This modality encompasses university lectures, seminars, laboratory sessions, and practical workshops. Face-to-face instruction offers the richest opportunities for spontaneous interaction, real-time feedback, group dynamics, and hands-on experimentation with physical equipment and materials.

##### Maritime Example — Face-to-Face

*A university module on ship stability delivered through lectures, tutorial problem-solving sessions, and practical inclining experiments conducted in the institution's naval architecture laboratory. Learners interact directly with physical models and instrumentation under instructor supervision.*

#### Work-Based Learning (WBL)

Learning that takes place primarily within a professional working environment, such as a shipyard, a port facility, a design office, or an engineering consultancy. WBL includes apprenticeships, industrial placements, supervised internships, and on-the-job training programmes. This modality provides unmatched access to authentic professional contexts and real-world problems, but may present challenges in delivering structured theoretical content and ensuring systematic reflection.

### **Maritime Example — Work-Based Learning**

*A vocational apprenticeship in marine welding, where trainees develop practical skills on production vessels under the supervision of qualified welding engineers, complemented by structured logbooks and periodic assessment against Classification Society standards.*

## MOOC and Online Delivery

Fully online delivery through Massive Open Online Courses (MOOCs) or other digital learning platforms. This modality enables scalable, flexible, and geographically distributed access to learning materials, making it particularly valuable for the pan-European reach of the LeaderSHIP project. Online delivery excels in the structured presentation of theoretical content and self-paced knowledge acquisition, but requires careful design to support meaningful interaction, collaborative learning, and practical experimentation.

### **Maritime Example — MOOC / Online**

*An open-access online course on maritime environmental regulations (MARPOL, EU ETS for shipping), delivered through video lectures, interactive quizzes, discussion forums, and a final peer-assessed case study on a vessel's compliance strategy.*

## Blended Learning

A deliberate integration of face-to-face and online components, designed so that the two modes complement and reinforce each other. Blended learning combines the flexibility and scalability of digital delivery with the interpersonal richness and practical opportunities of in-person instruction. When well designed, this modality offers the most comprehensive coverage of all five learning phases, as each can be assigned to the delivery mode that serves it best.

### **Maritime Example — Blended Learning**

*A postgraduate module on autonomous vessel technology, where theoretical content on sensor systems and AI-based navigation is delivered through online pre-recorded lectures and self-assessment quizzes (Phases 1–3), followed by an intensive two-day on-campus workshop involving simulator exercises, group design challenges, and formal presentations (Phases 4–5).*

## 5.2 Alignment with the Learning-Teaching Model Cycle

The pedagogical model's five phases can be effectively implemented across all four delivery modalities, but the **degree of natural alignment** varies. Figure 5 presents a matrix indicating, for each combination of modality and phase, whether the alignment is naturally strong, feasible with

deliberate instructional design, or requires special attention from the instructor or programme coordinator.

### Delivery Modalities and Learning Phases: Alignment Matrix

	1. Experiential Context	2. Reflective Observation	3. Conceptualisation	4. Active Experiment.	5. Assessment & Feedback
Face-to-Face	✓✓	✓✓	✓✓	✓✓	✓✓
Work-Based Learning (WBL)	✓✓	✓✓	△	✓✓	✓
MOOC / Online	✓	✓	✓✓	△	✓
Blended	✓✓	✓✓	✓✓	✓✓	✓✓

Naturally strong alignment     
 Feasible with deliberate design     
 Requires special attention

The five-phase learning cycle applies to all modalities; the matrix indicates where additional design effort is needed.

Figure 5 — Delivery Modalities and Learning Phases: Alignment Matrix

The key observations from this mapping are as follows:

- **Face-to-face instruction** provides naturally strong alignment across all five phases. It is the most versatile modality, allowing instructors to move fluidly between contextualisation, discussion, theory, practical exercises, and assessment within a single session or across a series of sessions.
- **Work-based learning** excels in Phases 1 (Experiential Context) and 4 (Active Experimentation), where the authentic professional environment provides unparalleled contextualisation and hands-on application. However, Phase 3 (Conceptualisation) requires special attention, as the workplace may not naturally lend itself to structured theoretical instruction. Institutions should consider supplementary materials, mentoring protocols, or complementary online resources to address this gap.
- **MOOC and online delivery** is particularly strong for Phase 3 (Conceptualisation), where well-structured digital content, multimedia resources, and self-paced learning paths can effectively convey theoretical frameworks. Phase 4 (Active Experimentation) requires the most attention, as hands-on, physical experimentation is inherently difficult to replicate online. Virtual laboratories, simulation software, and remote-controlled equipment can partially bridge this gap, but programme designers should be realistic about the limitations.
- **Blended learning** achieves strong alignment across all phases by design, as the programme can strategically assign each phase to the delivery mode that serves it best.

Its effectiveness, however, depends on the quality of integration between the online and face-to-face components: a poorly coordinated blended programme risks becoming two disconnected half-courses rather than a coherent whole.

### 5.3 Practical Guidance for Modality Selection

The choice of delivery modality for a given course or module should be driven by three considerations: the nature of the competencies to be developed, the characteristics of the learner cohort (see Chapter 6), and the resources available at the training institution (see Chapter 6). In practice, most programmes within the maritime and shipbuilding sector will benefit from a **blended approach** that leverages the strengths of multiple modalities. The following table summarises the principal strengths and limitations of each modality as a practical reference for programme coordinators.

Modality	Strengths	Limitations	Best Suited For
Face-to-Face	Rich interaction; real-time feedback; group dynamics; hands-on lab/workshop access; spontaneous adaptation by instructor	Geographically constrained; limited scalability; physical infrastructure; scheduling rigidity	Technical skills requiring physical equipment; soft skills development; assessment of practical competence
Work-Based Learning	Authentic professional context; direct industry relevance; employer engagement; development of workplace behaviours	Limited theoretical structure; variable quality of supervision; assessment standardisation challenges; access dependent on industry partnerships	Vocational qualifications; apprenticeships; professional placements; industry-specific technical skills
MOOC / Online	Scalable and flexible; self-paced; accessible across borders; cost-effective for theoretical content; supports diverse media	Limited hands-on practice; risk of learner isolation; high dropout rates; assessment integrity challenges; requires digital literacy	Theoretical knowledge; regulatory frameworks; foundational concepts; continuing professional development

Blended	Combines strengths of all modalities; flexible scheduling; differentiated learning paths; adaptable to diverse cohorts	Requires careful coordination; design complexity; dependent on reliable digital infrastructure; risk of fragmentation if poorly integrated	Most programmes requiring both theoretical depth and practical application; postgraduate and professional courses
---------	--	--	---

Table 6 — Delivery Modality Comparison

It is essential to emphasise that the selection of a delivery modality does **not** alter the pedagogical model itself. The five-phase cycle, the Bloom’s Taxonomy alignment, and the skill-level progression remain constant. What changes is the **instructional design** through which these elements are enacted: the specific activities chosen, the tools and platforms employed, the forms of interaction facilitated, and the assessment instruments used. Chapters 7 and 8 of this document provide the activity and assessment matrices that instructors can draw upon regardless of the modality selected.

## 6. Contextual Adaptation: Learner Profiles and Institutional Resources

The LeaderSHIP teaching-learning model is designed to be **universally applicable** across the diverse landscape of European maritime education and training. However, universality of the model does not imply uniformity of implementation. Each course, module, or training programme must be adapted to two fundamental contextual dimensions: the **characteristics of the learner cohort** and the **resources available at the training institution**. This chapter provides guidance on how to approach this adaptation while preserving the integrity of the pedagogical framework.

### 6.1 Adapting to Learner Profiles

The maritime and shipbuilding sector encompasses a remarkably diverse range of learner populations. A first-year undergraduate studying naval architecture at a research-intensive university, a mid-career shipyard technician pursuing a vocational qualification, and a senior manager enrolling in a continuing professional development course all have fundamentally different starting points, motivations, learning preferences, and time constraints. The LeaderSHIP model accommodates this diversity through the interaction of two mechanisms:

- **Skill-level selection.** The four progressive levels defined in Chapter 4 (Beginner, Intermediate, Proficient, Expert) allow instructors to calibrate the cognitive and affective demands of a course to the learner’s current proficiency. A vocational trainee’s first

module on hull construction may operate at the Beginner level (Remember/Understand + Receiving/Responding), while an advanced postgraduate seminar on computational fluid dynamics may operate at the Expert level (Evaluate/Create + Characterisation).

- **Modality selection.** The four delivery modalities defined in Chapter 5 enable instructors to choose the format that best matches the learner's circumstances. Full-time university students may benefit from a face-to-face or blended approach with regular campus attendance. Working professionals with limited availability may require a predominantly online format with periodic intensive workshops. Apprentices will naturally be situated in a work-based learning context.

Beyond these structural selections, instructors should consider the following learner characteristics when designing their syllabi and selecting materials:

- **Prior knowledge and experience.** Learners with significant industry experience will require a different balance between contextualisation (Phase 1) and conceptualisation (Phase 3) compared with learners entering the sector for the first time. Experienced learners may move quickly through contextualisation and spend more time on advanced conceptual frameworks, while novice learners will benefit from extended contextualisation to build the foundational mental models on which subsequent learning depends.
- **Academic level.** Undergraduate learners are typically developing disciplinary foundations and may require more structured guidance through the learning cycle. Postgraduate learners are expected to exercise greater autonomy, engage more deeply with primary research literature, and contribute original analysis.
- **Language and cultural background.** In a pan-European sector, learners will come from diverse linguistic and cultural contexts. Course materials should be designed with clarity and accessibility in mind, avoiding unnecessary jargon and providing glossaries of specialised terminology. Assessment methods should account for language competence where the course is delivered in a language other than the learner's first language.
- **Digital literacy.** Online and blended modalities assume a certain level of comfort with digital tools and platforms. Where this cannot be assumed, introductory support and orientation sessions should be provided.
- **Motivation and professional objectives.** Learners pursuing a first qualification, those seeking career advancement, and those updating skills for regulatory compliance will each bring different motivational profiles. The Experiential Context phase (Phase 1) should explicitly connect the learning content to the learner's professional goals.

## 6.2 Adapting to Institutional Resources

Training institutions participating in the LeaderSHIP project and its successor initiatives will vary considerably in their available infrastructure, staffing, and industry connections. A large technical university with dedicated naval architecture laboratories, towing tanks, and simulation centres will

be able to implement the Active Experimentation phase (Phase 4) very differently from a smaller vocational training centre with limited workshop facilities. Similarly, an institution with established shipyard partnerships will have advantages in offering work-based learning placements that others may not share.

The following institutional resource dimensions should be assessed when adapting the framework:

- **Physical infrastructure.** Laboratories, workshops, simulation equipment, computing facilities, and library resources directly influence the range of activities available for Phases 3 and 4. Where physical resources are limited, partnerships with other institutions, shared facilities, or virtual alternatives (remote laboratories, simulation software, virtual reality environments) should be explored.
- **Digital infrastructure.** The availability and reliability of learning management systems (LMS), video conferencing platforms, online assessment tools, and digital content repositories determine the feasibility and quality of online and blended delivery. Institutions should audit their digital capabilities before committing to a modality that their infrastructure cannot adequately support.
- **Industry partnerships.** Relationships with shipyards, maritime companies, Classification Societies, port authorities, and research institutes are critical for the authenticity of work-based learning and for providing real-world case studies, guest lectures, site visits, and placement opportunities. Building and maintaining these partnerships should be a strategic priority.
- **Instructor expertise.** The competence and experience of the teaching staff — both in their technical disciplines and in pedagogical methods — shapes the quality of implementation. Institutional investment in instructor development, including training on the LeaderSHIP model itself and on effective use of the selected delivery modalities, is a prerequisite for success.
- **Support services.** Academic advising, career guidance, language support, accessibility services, and student wellbeing provisions all contribute to the learner's capacity to engage fully with the learning cycle, particularly at the Personal assessment level (Phase 5).

### 6.3 A Practical Approach to Adaptation

In practical terms, the process of contextual adaptation can be summarised as a sequence of decisions that each training institution or programme coordinator should make when designing a new course or module within the LeaderSHIP framework:

1. **Define the target competencies.** Identify the specific skills (technical, soft, cultural, creative) to be developed, drawing on the training needs analysis conducted under the LeaderSHIP project.

2. **Profile the learner cohort.** Characterise the intended learners in terms of their prior knowledge, academic level, professional experience, language background, digital literacy, and motivational profile.
3. **Select the appropriate skill level.** Using Table 5 (Chapter 4), determine the Bloom's Taxonomy levels (cognitive and affective) that match the learners' current proficiency and the course's intended outcomes.
4. **Audit institutional resources.** Assess the available physical infrastructure, digital platforms, industry partnerships, instructor expertise, and support services.
5. **Choose the delivery modality (or modalities).** Based on the learner profile and institutional audit, select the most appropriate delivery format from among face-to-face, work-based learning, online, or blended approaches (Chapter 5).
6. **Select activities and assessments.** Using the matrices in Chapter 7 (Tables 6–9), choose the specific learning activities and assessment methods appropriate to the skill level, skill area, and delivery modality.
7. **Map activities across the five learning phases.** Distribute the selected activities across the five phases of the learning-teaching model cycle (Chapter 2), ensuring that all phases are adequately addressed within the chosen modality.
8. **Implement, evaluate, and iterate.** Deliver the course, apply the three-level assessment framework (Personal, Training, Summative), gather feedback from both learners and instructors, and refine the design for subsequent iterations.

This eight-step process is deliberately aligned with the Instructor's Quick-Start Guide presented in Figure 6 (Chapter 7), expanding upon it to incorporate the modality and contextual dimensions introduced in Chapters 5 and 6. It is intended as a practical tool that programme coordinators can apply directly when planning new courses or revising existing ones.

### **Adaptation in Practice**

*Consider two institutions both offering a module on marine propulsion systems at the Intermediate level. University A, a large technical university with a thermodynamics laboratory and an LNG engine test facility, might opt for a face-to-face approach with extensive lab sessions (Phase 4) and in-person group debates (Phase 2). Vocational Centre B, a smaller institution with strong industry partnerships but limited lab facilities, might adopt a blended approach: online delivery for Phases 1–3 (contextualisation, reflection, and theory via video lectures and interactive simulations), combined with a two-week supervised placement at a partner shipyard's engine room for Phase 4, and a portfolio-based summative assessment (Phase 5). Both implementations follow the same pedagogical model and target the same Bloom's Taxonomy levels; the difference lies entirely in the contextual adaptation.*

## 7. Applying the Framework: Activities and Assessments by Skill Level

This chapter provides the practical tools that instructors need to implement the LeaderSHIP teaching-learning model in their programmes. For each of the four skill development levels (Beginner, Intermediate, Proficient, and Expert), a detailed matrix specifies the recommended learning activities and assessment methods across four skill categories: **Technology and Legislation** (including Intellectual Property Rights), **Soft Skills**, **Cultural Skills**, and **Creative Skills**.

These matrices draw directly on the activity and assessment catalogues presented in Tables 3 and 4 (Chapter 3), applying them to the specific Bloom’s Taxonomy levels that correspond to each LeaderSHIP skill level (as mapped in Table 5, Chapter 4). Instructors should use these tables as a starting point, selecting and adapting activities and assessments to suit the specific requirements of their modules, learner cohorts, institutional contexts, and chosen delivery modalities (see Chapters 5 and 6).

Figure 6 illustrates the overall workflow for applying the framework.

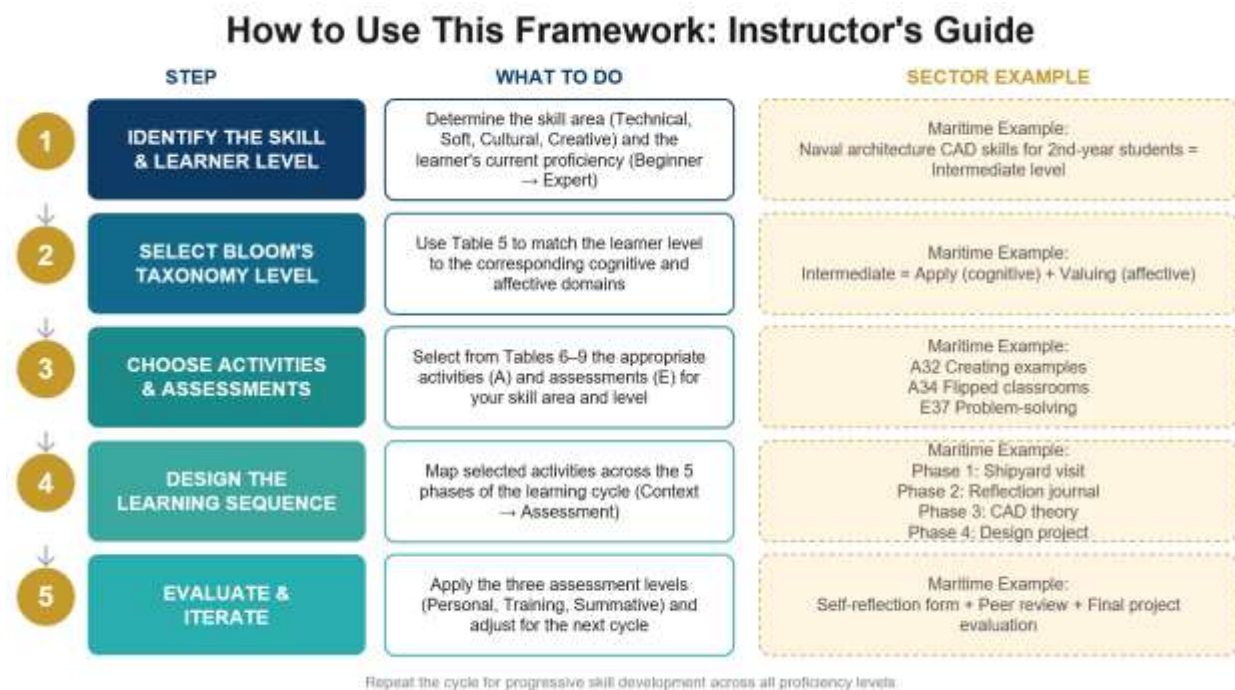


Figure 6 — Instructor’s Quick-Start Guide to Applying the Framework

## 7.1 Beginner / Basic Level

At the Beginner level, learners are building foundational knowledge and developing initial awareness of the subject matter. Activities emphasise recall, recognition, and initial engagement; assessments verify basic comprehension and willingness to participate.

Skill Area	Core Activities	Supplementary Activities	Assessments
Technology + Legislation (IPR)	A1 Flashcards; A2 Highlight key words; A5 Reading materials; A6 Presentations/videos; A11 Case studies; A16 Gamification; A17 Group discussions; A18 Lightboard; A19 Mind maps; A20 Matrix activity; A23 Think-pair-share	A3 Lists; A4 Memory activities; A10 Read articles/textbooks; A12 Concept maps; A13 Demonstrations; A14 Diagrams; A15 Flowcharts; A22 Summarise; A24 Active participation; A27 Problem-solving; A28 Role-play; A29 Written assignments	E1-E7 (Recall tests); E8 Feedback forms; E14 One-minute paper; E15 Qualitative interviews; E18 Concept map; E19-E22 (Summary, Essay, Diagrams, Infographics); E24-E27 (Presentation, Examples, Short answers); E30-E31 (Critical questioning, Peer evaluation)
Soft Skills	A1-A6 (As above); A11 Case studies; A16 Gamification; A17 Group discussions; A19 Mind maps; A23 Think-pair-share; A24 Active participation; A27 Problem-solving; A28 Role-play	A8 Focus groups; A9 Listen to presentations; A10 Read articles; A13 Demonstrations; A25 Brainstorm ideas; A26 Present to audience; A29 Written assignments; A30 Questionnaires	E8 Feedback forms; E14 One-minute paper; E15 Qualitative interviews; E18 Concept map; E20 Essay; E24 Presentation; E25 Examples; E30 Critical questioning; E31 Peer evaluation; E32 Willingness to participate
Cultural Skills	A1-A6 (As above); A11 Case studies; A16 Gamification; A17 Group discussions; A19 Mind maps; A23 Think-pair-share; A24 Active participation; A27 Problem-solving; A28 Role-play	A8 Focus groups; A12 Concept maps; A21 Play/sketches; A25 Brainstorm; A26 Present to audience; A9 Listen to presentations; A10 Read articles	E12 Match; E14 One-minute paper; E16 Recall reactions; E17 Summary of key points; E19 Summary; E24 Presentation; E25 Examples; E30 Critical questioning; E32 Willingness to participate

Creative Skills	A1-A6 (As above); A11 Case studies; A16 Gamification; A17 Group discussions; A19 Mind maps; A23 Think-pair-share; A24 Active participation; A27 Problem-solving; A28 Role-play	A8 Focus groups; A12 Concept maps; A13 Demonstrations; A14 Diagrams; A21 Play/sketches; A25 Brainstorm; A26 Present to audience	E8 Feedback forms; E14 One-minute paper; E21 Diagrams; E22 Infographics; E24 Presentation; E25 Examples; E27 Answer questions; E32 Willingness to participate
-----------------	--	---	---

Table 7 — Activities and Assessments for Beginner/Basic Level

## 7.2 Intermediate Level

At the Intermediate level, learners apply knowledge to new situations and demonstrate growing commitment. Activities emphasise hands-on application and values engagement; assessments evaluate problem-solving ability and personal investment in learning.

Skill Area	Core Activities	Supplementary Activities	Assessments
Technology + Legislation (IPR)	A32 Creating examples; A34 Flipped classrooms; A40 Debates; A41 Opinionated writing; A42 Reflection paper; A43 Self-report	A31 Calculate; A33 Demonstrations; A37 Lab experiments; A38 Mapping; A39 Prezi	E33 Discussion board; E34 E-portfolio; E35 Lab reports; E37 Problem-solving tasks; E38 Tests; E40 Attendance; E41-E47 (Quality, Deadlines, Plans, Reflection, Reports, Ungraded paper)
Soft Skills	A32 Creating examples; A34 Flipped classrooms; A40 Debates; A41 Opinionated writing; A42 Reflection paper; A43 Self-report	A35 Gallery walks; A36 Group work	E33 Discussion board; E34 E-portfolio; E40 Attendance; E42 Meet deadlines; E45 Reflection paper; E47 Ungraded paper
Cultural Skills	A32 Creating examples; A34 Flipped classrooms; A40 Debates; A41 Opinionated writing; A42 Reflection paper; A43 Self-report	A35 Gallery walks; A39 Prezi	E33 Discussion board; E34 E-portfolio; E37 Problem-solving; E40 Attendance; E41 Quality of work; E42 Meet deadlines; E45

			Reflection paper; E46 Report on activities
Creative Skills	A32 Creating examples; A34 Flipped classrooms; A40 Debates; A41 Opinionated writing; A42 Reflection paper; A43 Self-report	A33 Demonstrations; A35 Gallery walks; A36 Group work; A37 Lab experiments; A38 Mapping; A39 Prezi	E33 Discussion board; E34 E-portfolio; E35 Lab reports; E37 Problem-solving; E40 Attendance; E41 Quality of work; E42 Meet deadlines; E43 Proposals of new plans

Table 8 — Activities and Assessments for Intermediate Level

### 7.3 Proficient Level

At the Proficient level, learners engage in independent analysis, critical comparison, and integration of values into a coherent professional framework. Activities emphasise investigation and synthesis; assessments require analytical depth and the ability to solve novel problems.

Skill Area	Core Activities	Supplementary Activities	Assessments
Technology + Legislation (IPR)	A45 Discussions; A49 Think-pair-share; A52 Concept map (formal/informal experiences)	A44 Compare and contrast; A46 Graphs; A47 Group investigation; A50 Review paper; A51 Analyse and contrast	E48 Analysis paper; E49 Case studies; E50 Evaluation criteria; E51 Critique hypothesis; E52 Muddiest point; E53 Research paper; E54 Review paper; E57 Focus groups; E58 Solve new problems
Soft Skills	A45 Discussions; A49 Think-pair-share; A52 Concept map	A47 Group investigation; A50 Review paper	E48 Analysis paper; E49 Case studies; E51 Critique hypothesis; E53 Research paper; E55 Develop realistic aspirations; E57 Focus groups
Cultural Skills	A45 Discussions; A49 Think-pair-share; A52 Concept map	A46 Graphs; A47 Group investigation; A50 Review paper	E49 Case studies; E51 Critique hypothesis; E53 Research paper; E54 Review paper; E55 Develop realistic aspirations; E57 Focus groups

Creative Skills	A45 Discussions; A49 Think-pair-share; A52 Concept map	A44 Compare and contrast; A46 Graphs	E49 Case studies; E51 Critique hypothesis; E53 Research paper; E55 Develop realistic aspirations; E57 Focus groups; E58 Solve new problems
-----------------	--	--------------------------------------	--

Table 9 — Activities and Assessments for Proficient Level

## 7.4 Expert Level

At the Expert level, learners evaluate, critique, and create original work. They demonstrate autonomous professional behaviour grounded in internalised values. Activities emphasise debate, research, and innovation; assessments require the production of original proposals and the defence of complex positions.

Skill Area	Core Activities	Supplementary Activities	Assessments
Technology + Legislation (IPR)	A53 Debates; A54 Journal; A56 Critical reflection; A57 Group projects; A60 Decision-making; A61 Develop new solutions; A63 Presentations	A55 Pros and cons list; A64 Research projects	E59 Argumentative essay; E60 Debates; E61 Discussions; E62 Presentation; E63 Alternative solutions; E64 Report; E67 SMART goals; E69 Criteria to evaluate product; E70 Grant proposal; E71 Alternative solutions; E72 Research proposal
Soft Skills	A53 Debates; A54 Journal; A56 Critical reflection; A57 Group projects; A60 Decision-making; A61 Develop new solutions; A63 Presentations	A55 Pros and cons; A58 Self-report goals; A59 Brainstorm; A62 Performances	E59 Argumentative essay; E60 Debates; E61 Discussions; E62 Presentation; E63 Alternative solutions; E64 Report; E65 Criteria for group projects; E66 Self-evaluation; E67 SMART goals
Cultural Skills	A53 Debates; A54 Journal; A56 Critical reflection; A57 Group projects; A60 Decision-making; A61 Develop	A55 Pros and cons; A62 Performances; A64 Research projects	E59 Argumentative essay; E60 Debates; E61 Discussions; E62 Presentation; E63 Alternative solutions;

	new solutions; A63 Presentations		E64 Report; E65 Group project criteria; E66 Self-evaluation; E67 SMART goals; E69 Criteria to evaluate product
Creative Skills	A53 Debates; A54 Journal; A56 Critical reflection; A57 Group projects; A60 Decision-making; A61 Develop new solutions; A63 Presentations	A58 Self-report goals; A59 Brainstorm; A62 Performances; A64 Research projects	E59 Argumentative essay; E60 Debates; E62 Presentation; E64 Report; E65 Group project criteria; E66 Self-evaluation; E67 SMART goals

*Table 10 — Activities and Assessments for Expert Level*

## 8. Bibliography

- Bloom, B. S. (2010). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. Longman.
- Bloom, B. S., Engelhart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook 1: Cognitive domain* (pp. 1103-1133). New York: Longman.
- Dave, R. H. (1970). *Developing and writing behavioural objectives*. Educational Innovators Press.
- Gershon, M. (2015). How to use bloom's taxonomy in the classroom: the complete guide. *(No Title)*.
- Harrow, A. J. (1972). A taxonomy of the psychomotor domain: A guide for developing behavioral objectives. *(No Title)*.
- Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. *Theory into practice*, 41(4), 212-218.
- Krathwohl, D. R., Bloom, B., & Masia, B. B. (1964). *Taxonomy of educational objectives* (Vol. 2). David McKay Company.
- Markle, R., & O'Banion, T. (2014). Assessing affective factors to improve retention and completion. In *Learning abstracts* (Vol. 17, No. 11, pp. 1-16).
- Pierre, E., & Oughton, J. (2007). The Affective Domain: Undiscovered Country. *College Quarterly*, 10(4), 1-7.
- Shephard, K. (2008). Higher education for sustainability: seeking affective learning outcomes. *International journal of sustainability in Higher Education*, 9(1), 87-98.
- Nobre, P. R. B. (2021). Currículo e Avaliação em Educação Física: um manual pedagógico. *Educational Research*, 5(4), 189-200.

## Web References

- University of Deusto Educational Model: [Deusto Educational Model | Deusto](#)
- Bloom's Taxonomy — Center for Teaching, Vanderbilt University: [Blooms-Taxonomy.pdf](#)
- Bloom's Taxonomy of Learning — Simply Psychology: [Bloom's Taxonomy of Learning | Domain Levels Explained](#)
- LeaderSHIP 4 Skills Project: [LeaderSHIP for Skills – LeaderSHIP for Skills](#)