TRAINER'S HANDBOOK

ManagiDiTH
ADVANCED DIGITAL SKILLS

D3.3 Trainer's handbook

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Abstract	This handbook is designed for the academic staff of the ManagiDiTH Master's program to support it in preparing and delivering the curricular units of this program. It provides pedagogical guidelines, practical tips, and technical information necessary for a successful delivery of the Curricular Units.

Keywords	Trainer handbook, train the trainers, pedagogy, Moodle

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Note on the ManagiDiTH consortium

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Glossary of key terms

CU	Curricular Unit
EC	European Commission
ECTS	European Credit Transfer and Accumulation System
EU	European Union
ManagiDiTH	Managing Digital Transformation in the Health Sector
WP	Work Package

1. Introduction

Welcome to this handbook, a resource designed to support you in preparing and delivering your curricular units in the ManagiDiTH Master's program. It aims to provide pedagogical guidelines, practical tips, and technical information that can serve you.

After presenting the general features of the program the Handbook presents the pedagogical approach and practices that guide your work (Chapter 1). The design process of a single curricular unit is described in Chapter 2. Chapter 3 introduces the 5E model of instruction which consists of five stages: engage, explore, explain, elaborate, and evaluate. Guidance for the Master Thesis is included in Chapter 4. Chapter 5 gives practical information on how to build and deliver your curricular unit in Moodle. You will find guidelines for the use of artificial intelligence in Chapter 6. The last chapter of this handbook (7) deals with data protection.

Hopefully, you will find this handbook useful. Dive in and explore it!

1.1. General features of the programme

The imperative for the ManagiDiTH program is rooted in the recognition that the conventional silos between medical, social, digital and managerial domains are no longer tenable in the face of evolving healthcare landscapes. The imperative for interdisciplinary competence has become more pronounced, with the demand for professionals capable of navigating the intricacies of digital transformation for the health sector growing exponentially. ManagiDiTH, with its comprehensive curriculum and holistic approach, thus arises as a response to this imperative, positioning itself as a transformative force in digital transformation for the health sector.

The Master's programme comprises 90 ECTs (European Credit Transfer and Accumulation System). One credit is equivalent to 27 hours of work.
The program is structured as follows: Study Units (60 ECTs) + Master's Thesis (30 ECTs)
It comprises Altogether 21 Study Units, each earning 6 ECT
Out of these, five Study Units are mandatory Study Units (30 ECT) and the rest are optional

Figure 1 presents the outline of the Master's programme structure:
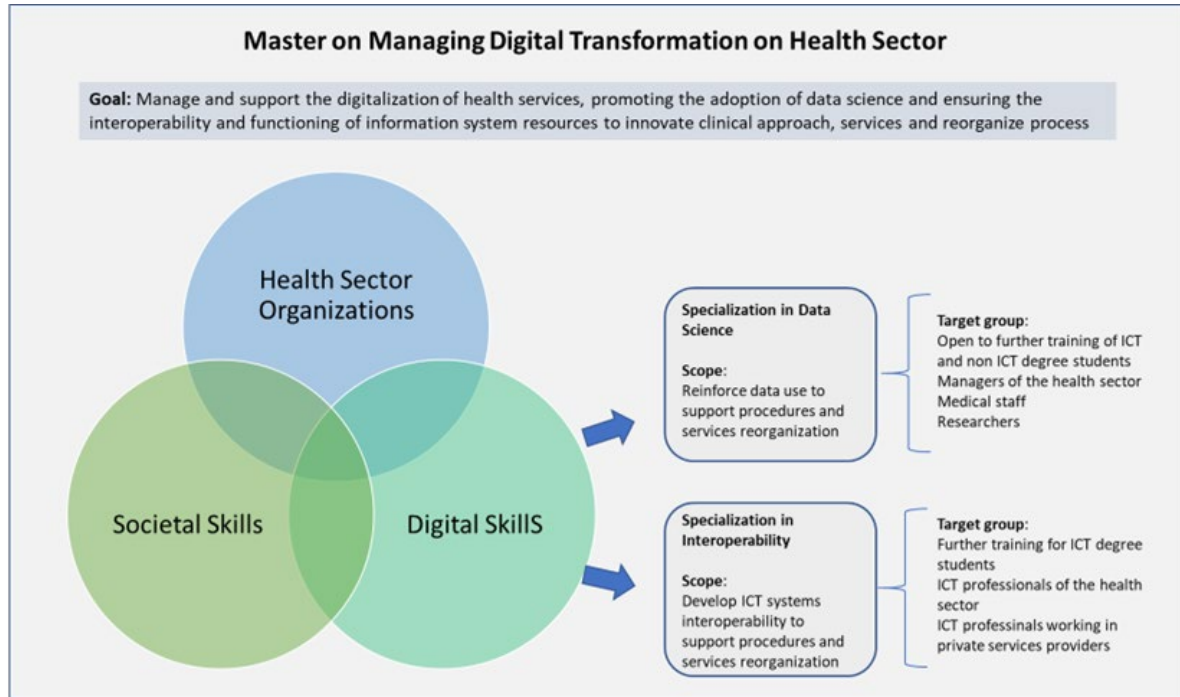
Figure 1. Outline of the Master Programme structure

Figure 2 illustrates the organizational logic of the curriculum of the Master's programme. It allows the students to build their own pathway and invest in a specialization aligned with the professional context of their practice (present or future).
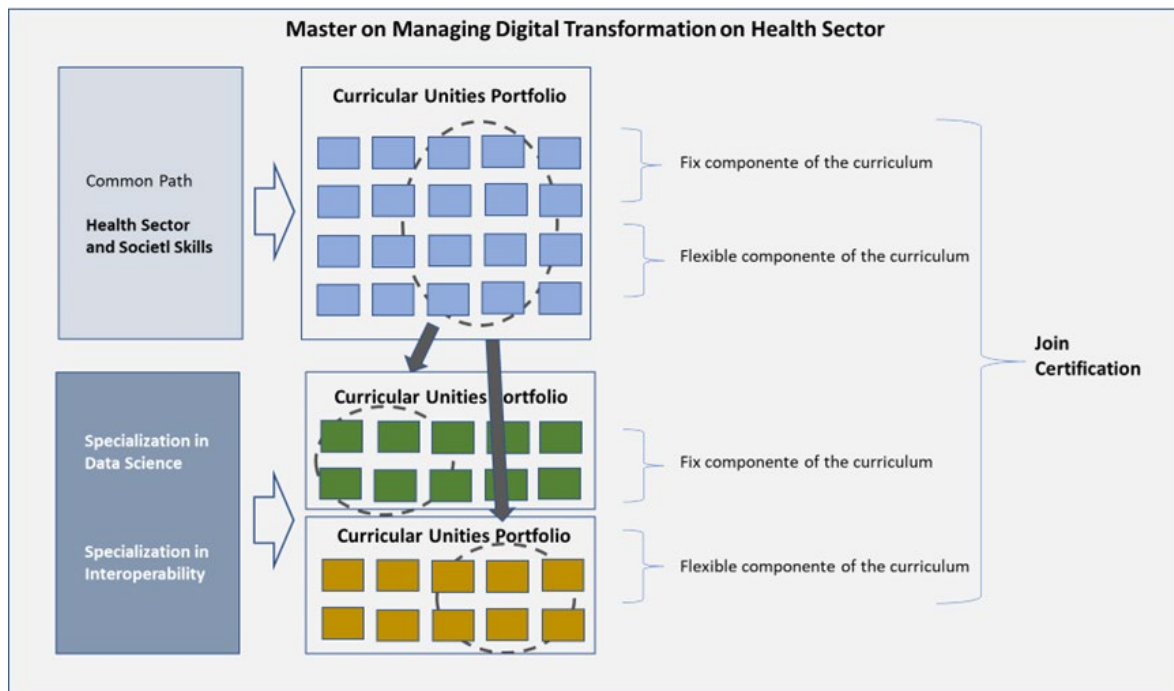
Figure 2. Organisational logic of the Master's programme

The programme corresponds to level 7 of the European Qualifications Framework (EQF). The learning outcomes at level 7 are described as follows:

Knowledge	Skills	Responsibility and autonomy
Highly specialised knowledge, some of which is at the forefront of knowledge in a field of work or study, as the basis for original thinking and/or research Critical awareness of knowledge issues in a field and at the interface between different fields	Specialised problem-solving skills required in research and/or innovation in order to develop new knowledge and procedures and to integrate knowledge from different fields	Manage and transform work or study contexts that are complex, unpredictable and require new strategic approaches; take responsibility for contributing to professional knowledge and practice and/or for reviewing the strategic performance of teams

Figure 3. Description of EQF Level 7 (https://europa.eu/europass/en/description-eight-eqf-levels)

2. Pedagogigal approach and Practices

2.1. Pedagogical Approach

For the design and delivery of the program, the partner universities will apply a constructivist pedagogy in which learners create knowledge through the interaction between their experiences and ideas (Phillips 1995). They learn science and develop critical thinking skills by solving real-world problems (Richardson 2003). The pedagogical approach is based on social constructivism which emphasizes the importance of social interaction and the sociocultural context of learning (Vygotsky 1978; Engeström 1978). It builds on trialogical learning which brings together different levels of learning: monological, dialogical, and trialogical. Monological learning takes place within one's mind and refers to individual knowledge acquisition. In a dialogical situation, learning takes place in social interaction and meaning-making. In trialogical learning, the learners operate through analysis, construction, and creation of new knowledge and shared objects.

The shared objects refer to mediating tools and artifacts which mediate human interaction. Their role has been emphasized in technology-mediated collaborative learning. (Paavola & Hakkarainen, 2021.)

Figure 4 illustrates the trialogical learning model:
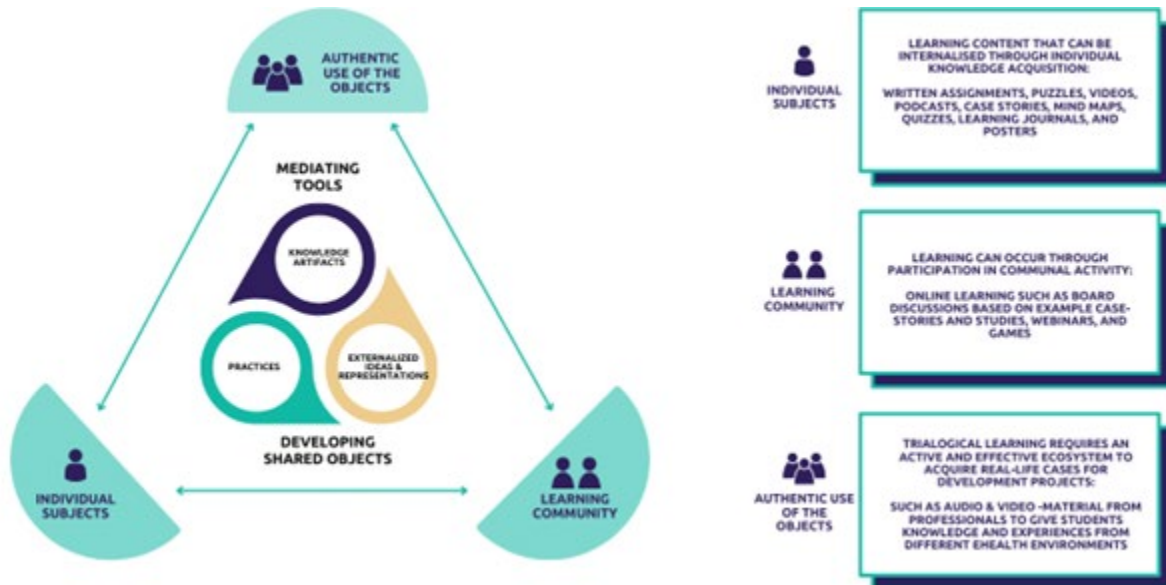
Figure 4. Trialogical learning model (Paavola and Hakkarainen (2009)

The pedagogical strategy of the ManagiDiTH master's programme comprises 5 pillars presented in the following Figure 4:
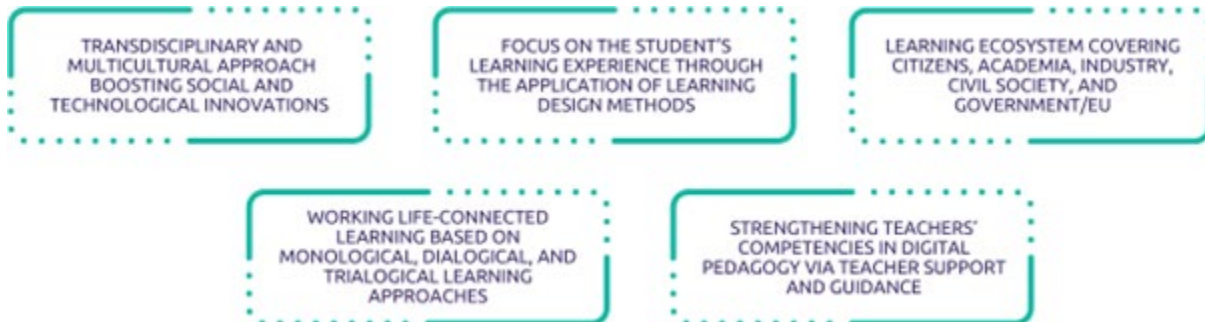
Figure 5. The 5 pillars of the pedagogical strategy of the Master's program (ManagiDiTH 2023)

2.2. Pedagogical practices

2.2.1. Teachers

The Master teachers' team will be composed gathering teachers from each university. A group of teachers is defined for each CU. It's agreed that teachers work together promoting an interprofessional cooperation environment. Therefore, remote classes in each CU may be delivered by more than one teacher. In these cases, the teachers must belong to different universities. The teacher team can be supplemented among people from enterprises and

technology transfer centres (some of these are already associated partners of the project) and other relevant ecosystem entities.

2.2.2. CU planning and design process

The CUs are planned, designed, and further developed by inter-university teams. For each CU, there is a teacher team of 3-4 teachers, each one representing one of the partner universities. The teacher team can be supplemented by working life partners (e.g., Clinipower, Finland). For each CU, a responsible university is named. The learning outcomes of the co-created curricular units are agreed upon among all partners.

2.2.3. Number of students per Study Unit

The minimum number of students per curricular unit is 20. However, during the piloting stage, all the curricular units will be delivered independent of the number of students. The maximum number of students per Curricular Unit depends on the modality of its' modality. E.g., in the case of a self-guided CU or module, there is no limitation on the number of participants.

2.2.4. Semester schedule

The semester schedule for 2024 – 2025 is described below:
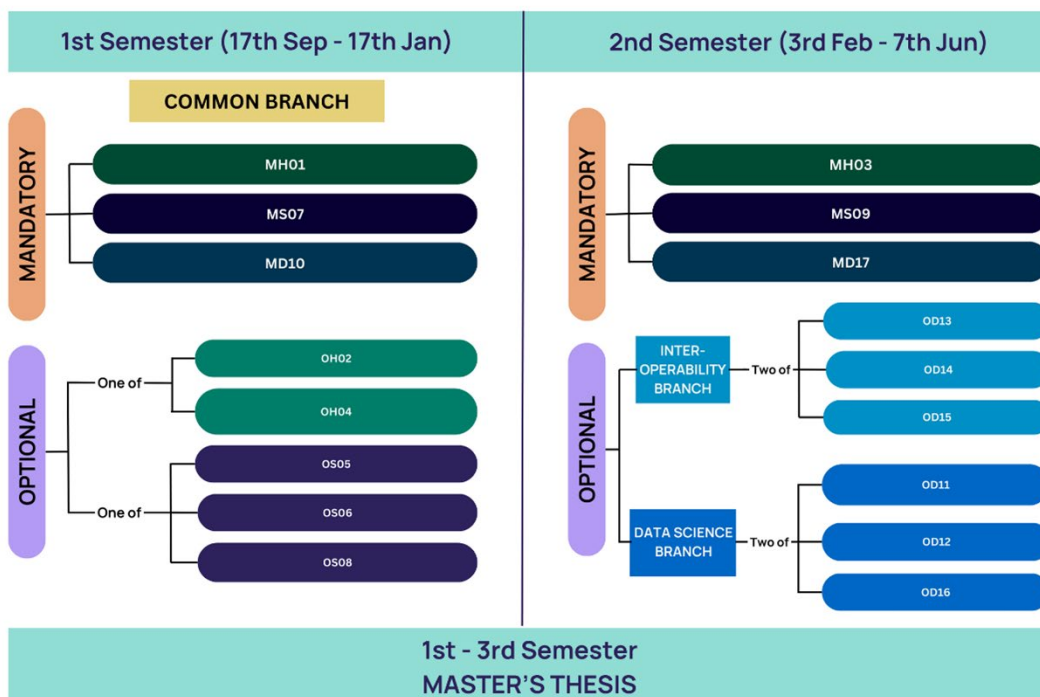
Figure 6. Semester schedule

2.2.5. Timing of the online sessions

Online sessions in each Curricular Unit will be held on Mondays, Tuesdays, Wednesdays and Thursdays. The time for these sessions is 17-19 CET (18-20 Finnish and Greek time, 16-18 Portuguese time)

2.2.6. Grading schemes

Master's degrees are graded using a different system in each university involved in ManagiDiTH. The partnership has developed and agreed on a table (table 1) of the associated grading, having the ECTS scale as a reference.

In the ManagiDiTH Moodle, we use a percentage scale from 0 to 100 percent (100% x [Points student earned divided by max points]). ISCTE has a scale of 20 to 0 that later at the diploma issuing phase is converted into the European scale A, B, C, D, E & F that AUTH uses. Laurea uses scale 5–0.

ECTS Scale	Greece (AUTH)	Portugal (ISCTE)	Finland (LAUREA)	ManagiDiTH Equivalent System (to be used for grading the students)
F (Failure)	1-5,5	0-9	0	0-49%
E (Lowest passing grade)	6	10-11	1	50 – 59%
D	6,5 - 7	12-13	2	60 – 69%
C	7,5 - 8	14-15	3	70 – 79%
B	8,5	16-17	4	80 – 89%
A (Highest grade)	9-10	18-20	5	90 – 100%

Table 1. Scoring system per country

The table below shows the student's performance as a percentage in relation to different higher education grading scales:

Student's performance (out of 100%)	ECTS	Greece (AUTH)	Portugal (ISCTE)	Finland (LAUREA)

[0-50[	F (failure)	1-5.5	0-9	0
[50-60[	E	6	10-11	1
[60-70[	D	6.5-7	12-13	2
[70-80[	C	7.5-8	14-15	3
[80-90[	B	8.5	16-17	4
[90-100]	A	9-10	18-20	5

Table 2. Student's performance as a percentage per country.

2.2.7. Student assessment schedule

The final assignment deadline or final online meeting equals the end of a curricular unit. Teachers have 1 month time to evaluate and give grades to students. For more information on student assessment, see chapter 2: CU design/Student Assessment.

2.2.8. Teaching language

The teaching language of the CUs is English. The language for guidance can be a national language. All learning materials need to be provided in English. During the project, the learning materials can be made available in different languages via the use of translator applications.

2.2.9. Modalities of teaching

The program will be carried out online except for certain activities that require a face-to-face setup (e.g., Service Design Boot Camp). The program includes both synchronous and asynchronous, independent, and collaborative guided online learning that takes place on the Moodle platform created for the programme.

2.2.10. Remote classes within Curricular Units

The first class of each CU will be synchronic and online. There should be altogether 4-7 synchronous online classes during each CU (part of these sessions can be for online guidance).

2.2.11. Tutoring

There will be a tutor for each student group to support learning throughout the programme. Every university needs to have a team of tutors covering all Study Units to follow up with

students in both English and the country's official language. Tutors will guide and support the learning process in the platform for digital learning.

2.2.12. Extracurricular activities

Extracurricular activities refer to seminars, summer schools, and study visits, among other learning activities, that are foreseen in the Master program design. The extracurricular activities must be face-to-face and delivered in English allowing students from all European Union countries to attend. This way there will be more flexibility to choose activities and to give more emphasis to ecosystem Players' interaction. Even though these activities may award credits they are additional to the 90 credits of the Master. In this way, attendance in extracurricular activities will be optional for the master students.

One extracurricular activity, Design Sprint (summer school), is a part of MS09 Service design curricular unit and it is included to the curricular unit credits. However, if a student is not able to participate to this activity, we offer them alternative option (online) to proceed in the curricular unit.

2.3. Teachers' roles and responsibilities

In the context of the ManagiDiTH master's programme, the roles and responsibilities of lead teachers and contributing teachers play pivotal roles in ensuring the program's success and the delivery of a high-quality education. Below, are the distinct roles and responsibilities associated with each position (as described in the Deliverable 4.1 of WP4).

2.3.1. Lead Teachers

Lead teachers for each of the Curriculum units of the Master's programme are faculty members of each of the respective partner institutions responsible for coordinating and overseeing curriculum development, teaching methodologies and student mentoring.

2.3.2. Contributing Teachers

Contributing teachers for each of the Curriculum unities of the Master's programme are faculty members of each of the respective partner institutions or otherwise discipline experts that participate in co-designing the CUs under the leadership and mentoring of the lead professor, contribute to the implementation of curriculum and have a steady and sufficient involvement in student mentoring.

Lead Teachers	Contributing teachers
Curriculum Development Lead teachers are primarily responsible for developing and shaping the curriculum for their assigned curricular units. This includes defining learning objectives, selecting instructional materials, and designing assessments.	
Instructional Design Design and implement effective instructional strategies that align with the program's pedagogical goals. This involves creating engaging learning experiences that cater to the diverse needs of students.	**Resource Development** Contribute to the co-design and co-development of instructional materials and resources for assigned curricular units. This includes preparing supplementary materials, case studies, and relevant multimedia content.
Curricular unit Delivery Act as the primary instructors for their assigned curricular units, leading discussions (both online and offline) and facilitating practical exercises. Lead teachers set the tone for the curricular unit and establish a positive and engaging learning environment in an all e-learning form and format.	**Curricular unit Support** Contributing teachers provide support to lead teachers in the delivery of specific curricular units. This may involve assisting with lectures, conducting tutorials, or facilitating practical sessions.
Assessment and Evaluation Develop assessment methods and tools to evaluate students' understanding and application of curricular unit content. Lead teachers provide timely and constructive feedback to support student learning and development.	**Assessment Assistance** Assist lead teachers in the development and implementation of assessments. This may involve grading assignments, exams, or other evaluation methods.
Student Mentorship Lead teachers serve as mentors to students within their curricular units, offering guidance on academic and professional matters. They encourage student participation and foster a supportive learning community	**Student Engagement** Actively engage with students during curricular unit activities and provide additional support as needed. Contributing teachers play a role in creating a positive and inclusive learning environment.
Professional Development Stay abreast of advancements in their respective field of expertise and more globally in the field of medical management, continuously updating their knowledge and incorporating	**Professional Collaboration and development** Collaborate with lead teachers and other contributing teachers to share insights, best practices, and experiences. This collaborative approach ensures consistency and quality

innovative teaching methodologies. Lead teachers are expected to contribute to academic curricular unit.	across the program (in conjunction to the "co-design" scheme for the curricular units) Engage in professional development opportunities to enhance teaching skills and stay informed about developments in medical management education.
Collaboration and co-design Collaborate with other lead teachers, contributing teachers, and program administrators to ensure a cohesive and integrated curriculum. Foster interdisciplinary collaboration to enrich the overall educational experience. Co-design is used to create engaging and collaborative learning experiences. Collaborating with other teachers, and stakeholders to ensure a cohesive and integrated curriculum. ManagiDiTH will foster interdisciplinary collaboration to enrich the overall educational experience to incorporate co-design principles.	**Continuous Improvement** Participate in ongoing evaluations and discussions to identify areas for improvement in curricular unit delivery and content. Contributing teachers contribute to the program's evolution based on their experiences and observations.

Table 3.Teachers' roles and responsibilities (WP4, deliverable 4.1)

These delineated roles and responsibilities for lead teacher and contributing teachers aim to create a well-coordinated and effective educational framework within the ManagiDiTH Master's programme. Collaboration and a commitment to continuous improvement are key principles that underpin the success of the teaching faculty and the program as a whole.

3. Curricular Unit Design

Organizing a curricular unit for digital transformation in the health sector is an arduous task, as it should prepare students for competencies and skills rather than just focusing on theory. As a programme, ManagiDiTH is concerned with transmitting content and you as a teacher surely dominate your subject area. However, for an engaging online learning experience, it is important to plan carefully how to deliver the content in such a manner that the students can learn new information and skills using different ways of learning, not just reading text or PowerPoints and writing essays.

3.1. Structuring the pedagogical path for the student

3.1.1. Prepare a pedagogical manuscript

A pedagogical manuscript is an important tool that allows you to write out and at the same time clarify for yourself the pedagogical progression of the curricular unit you are planning. It helps you to phase the progression of the study from the student's perspective. By preparing a pedagogical script for a curricular unit, you build a guided learning path for the student, directing the curricular unit toward the learning objectives. The following Figure X depicts the stages of designing the pedagogical manuscript.
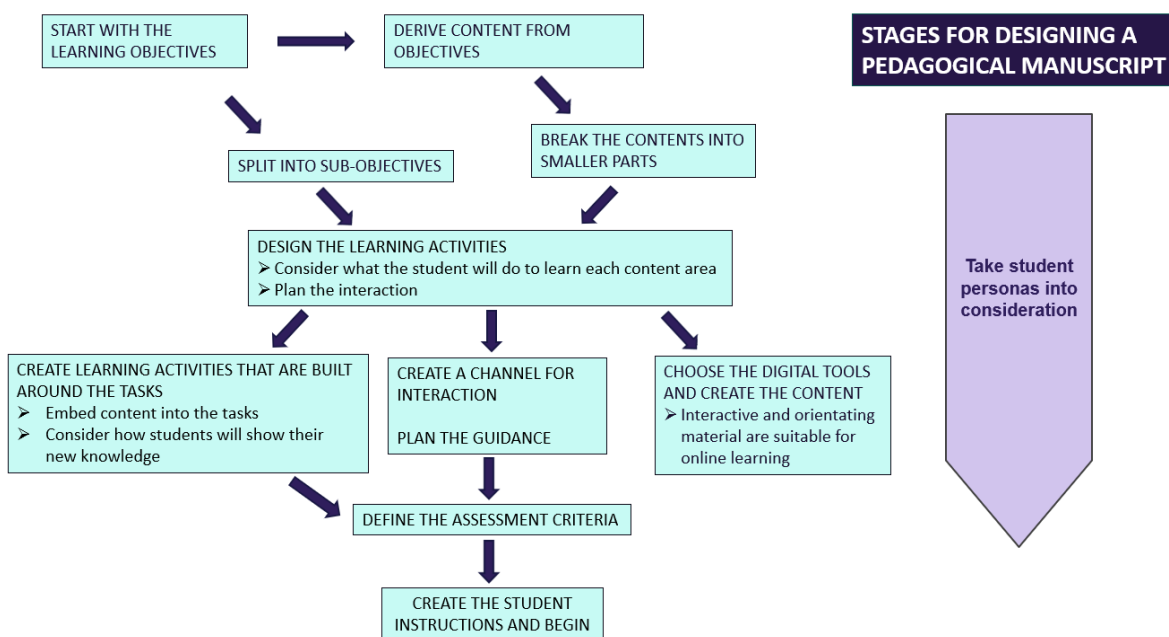
Figure 7. Stages for preparing a pedagogical manuscript (Tuija Marstio 2023)

3.1.2. Set objectives and define Learning Outcomes of the CUs

Learning objectives create the foundation for assessment and feedback. They indicate what results are expected from learning. However, the objectives of a curricular unit are often quite broad, and therefore it is advisable to break them down into sub-learning objectives at the level of modules/content themes (see the following Figure 8). For writing effective learning objectives you can get concrete ideas here: Writing effective learning objectives.
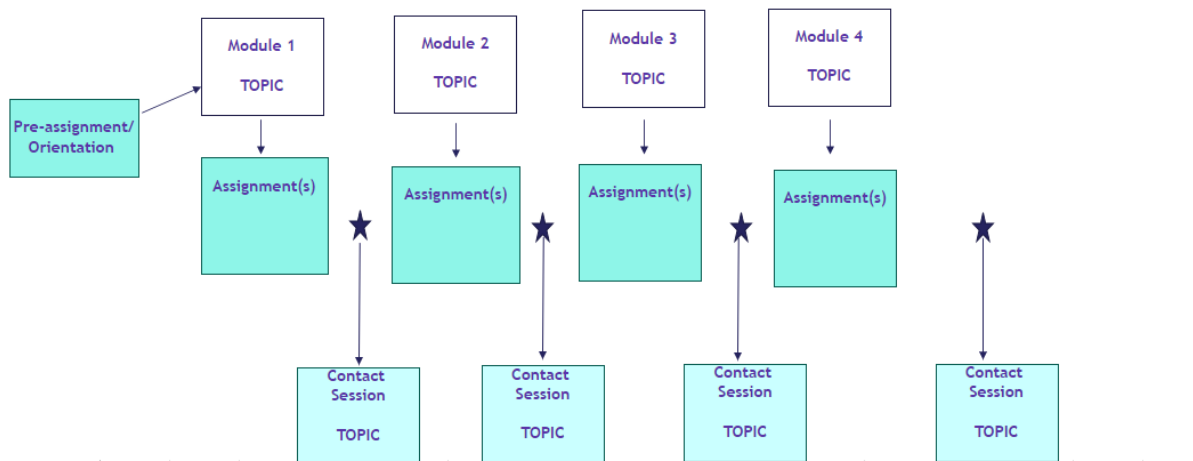
Figure 8.Setting the sub-learning objectives for each module of the CU (Tuija Marstio 2023)

Learning outcomes emphasize students' performance and what students learned after taking the curricular unit. They do not emphasize teacher performance, subject matter, or how knowledge will be acquired. The learning outcomes can be written under the title "After taking the curricular unit you will be able to…." (to ensure that the learning objectives are competency-based).

Guidelines for designing the learning outcomes:

1. Write the outcomes from the student's perspective, using clear language that is understandable by students.

2. Identify the type and topic of knowledge to be learned, and what level of performance or understanding is expected.

3. Describe the outcomes in such a way that they can be measured (i.e., they can be observed, and student achievement of them can be assessed).

When establishing the learning outcomes, it is recommendable to follow Bloom's Taxonomy. Ensure that the stated learning outcomes describe a progressive cognitive process that represents a continuum of increasing cognitive complexity.
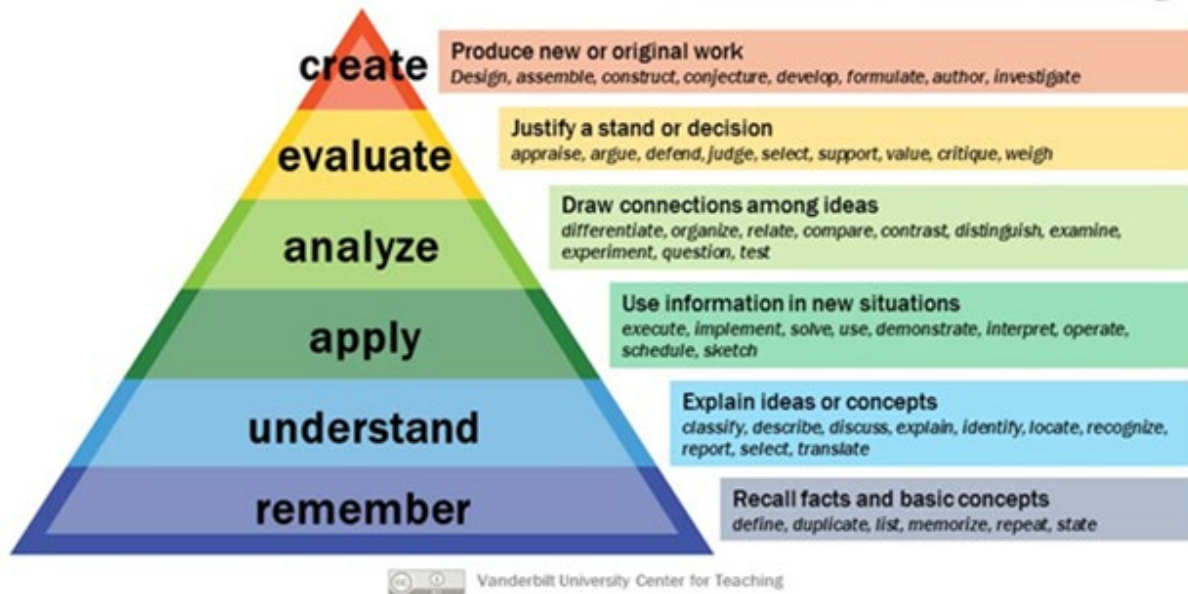
Figure 9.Bloom's Taxonomy (Benjamin Bloom, 1956, revised 2021)

The attached document "How to structure the pedagogical path of the study unit" gives you another perspective for an online curricular unit design: How to structure the Pedagogical Path.pdf

3.2. Embedding working-life-related projects in the Curricular Units

The trialogical metaphor of learning refers to learning as collaborative knowledge building. Trialogical learning is highly applicable in contexts where students from different fields participate in working-life-related joint projects, which is the primary focus in planning and building the ManagiDiTH programme's curricular units.

The process model below (Figure x) represents a preliminary way of becoming aware of the institutional logics and processes behind different actors in context of teaching and educational collaboration. In the process model, the various working-life organizations involved in teaching collaboration are referred to as Partner organizations. The model focuses on interactions between actors within the university and a focal partner organization.

ManagiDiTH Research/RDI–Teaching Collaboration Process Model
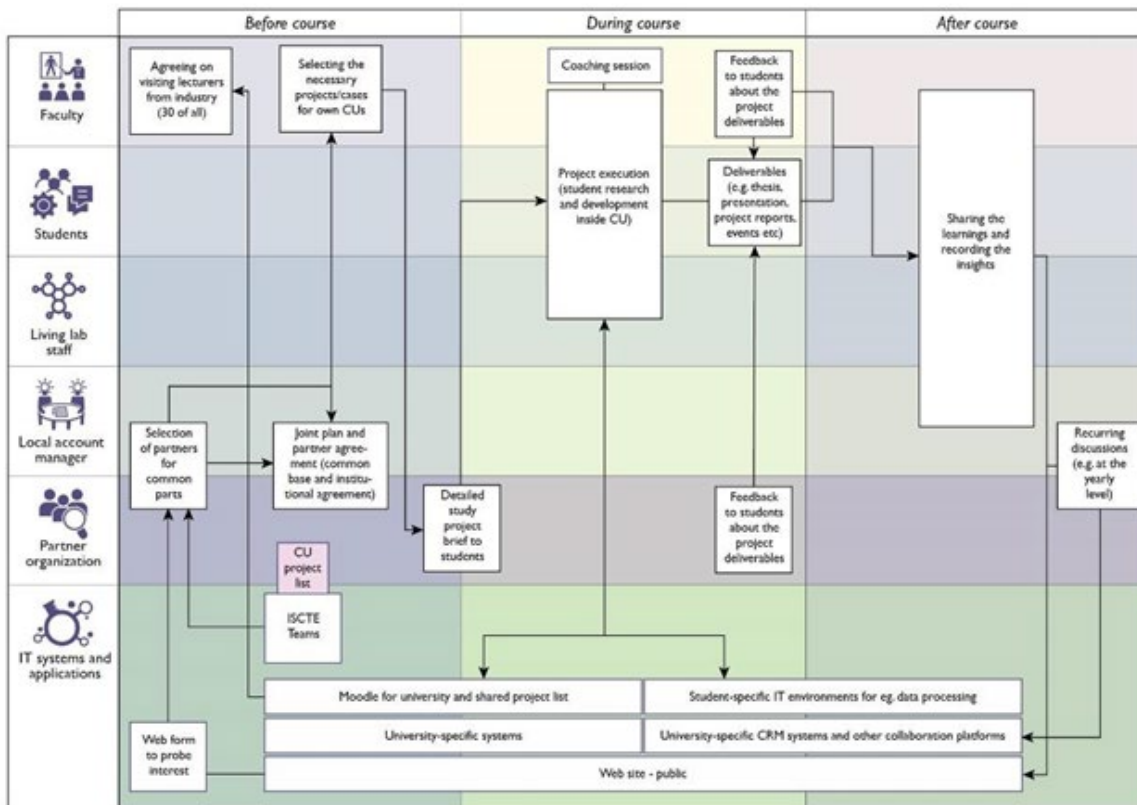
Figure 10.Research/RDI-Teaching Collaboration Process Model (Ecosystem Report, WP3, D3.1)

The key actors in the process model include teaching faculty, students, living lab staff, partner account managers of the university, and individual partner organizations, such as a company, third sector association, or public health organization. Finally, the model also considers the IT systems and applications involved in information sharing and facilitation, such as Moodle. The model is largely presented in the Ecosystem report.

Let us describe the process from the teachers' perspective. First, you need to define the role of the working life partner in your CU. What would be the topic for cooperation in your CU? And what kind of elements would the working-life collaboration contain? (e.g., action points, project work, lecturing, case studies, etc.) Describe the needed activities and the timeframe for them.

Every partner country has a local country manager, who coordinates the local industrial partners and discussions with the CU leaders, bringing the industry and academia together.

The country managers are:

- In Finland Juha Leskinen juha.a.leskinen@laurea.fi
- In Greece Vasiliki Pavlidou, vasiliki.pavlidou@gmail.com
- In Portugal Octavian Adrian Postolache, Octavian.Adrian.Postolache@iscte-iul.pt

Every CU leader is responsible for co-creation to organize trialogical learning with working life partners with the local country manager. If your CU has connections to other partners who are not yet the ManagiDiTH project partners, please, discuss with the local country manager and ask them to fill this questionnaire.

There is still in process the question of the choice of platforms and processes for storing and sharing data in conjunction with CUs is still in process, as well as the shaping of legal and contractual requirements and needs of collaboration with ecosystem partners. Also, the collaboration agreements in partner universities range from informal to formal. We will inform all teachers when the decisions have been made.

3.3. Visualizing the learning path for the student

When a student arrives in the online CU environment, he/she looks for the most important things from his/her point of view: assignments, assessment criteria, and deadlines.

The student also needs directions and a schedule: how to proceed and at what pace. It is recommended to visualize the learning path for the student e.g. with a timeline or a task table. Below you will find a picture of a template that you can use on the front page of your CU environment or under the section "Curricular unit Essentials". You can copy the ppt-template to your computer or to OneDrive. It is in the ISCTE Teams, under WP3 (-> Files -> Visuals for Moodle).

Once you have modified the template you can upload it to Moodle as a picture or by embedding it from OneDrive (more detailed instructions can be found in ISCTE Teams).
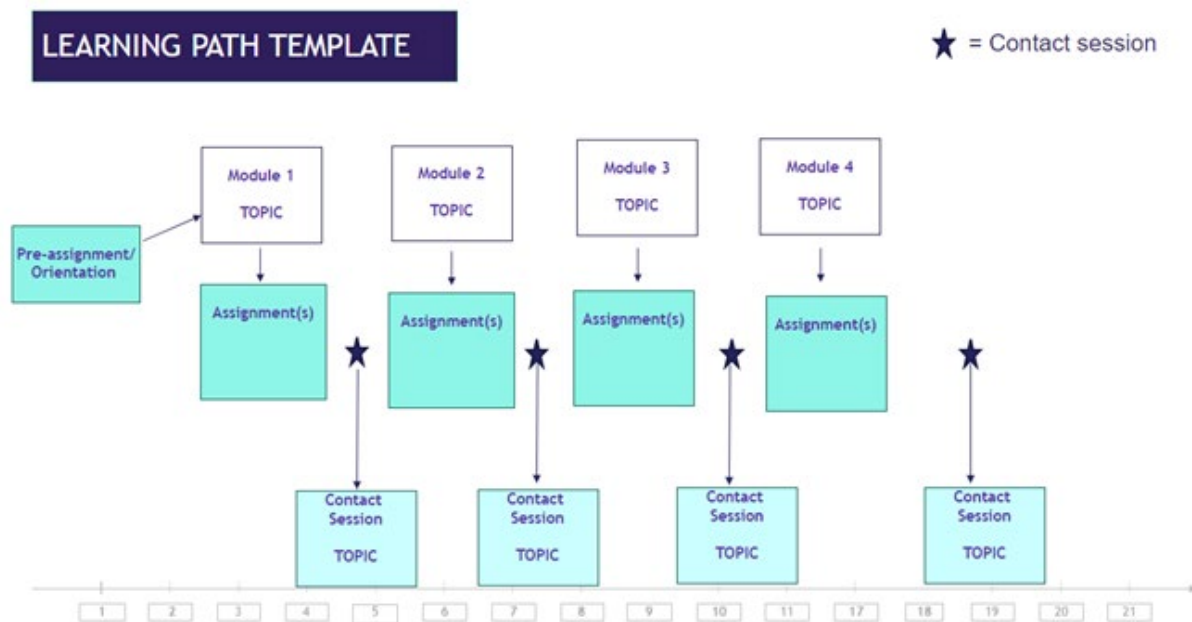
Figure 11. Learning path template

3.4. Self-directed elements inside the curricular unit

Self-directed learning has become a cornerstone of modern education, fostering student engagement and autonomy. This approach empowers learners to take control of their educational journey, instilling a sense of responsibility and ownership. A key strategy to incorporate self-directed elements within a curricular unit is through interactive digital tools, such as H5P.

H5P, a free and open-source content collaboration framework, enables educators to create, share, and reuse interactive HTML5 content. It integrates seamlessly with learning management systems like Moodle, offering a variety of content types that encourage self-directed learning. These include interactive videos, image hotspots, accordions, branching scenarios, curricular unit presentations, drag and drop activities, fill in the blanks exercises, and interactive books.

Interactive content not only boosts student engagement but also fosters active learning, a vital aspect of self-directed education. For example, interactive videos can be paused to pose questions related to the content, prompting students to reflect on the material and apply their understanding in real-time. Similarly, branching scenarios enable learners to make decisions that affect the scenario's curricular unit, thereby enhancing critical thinking and decision-making skills.

H5P adheres to accessibility standards, ensuring that all learners, regardless of their abilities or disabilities, can engage with the curricular unit material. This inclusivity further empowers students to take control of their learning process. H5P also offers pedagogical flexibility, allowing educators to customize content to cater to diverse learning styles and paces. This adaptability enables learners to interact with the curricular unit material in a way that best suits their learning preferences, further promoting self-directed learning.

Teachers play a crucial role in fostering self-directed learning. They can set clear expectations by communicating the learning objectives, expectations, and evaluation criteria at the curricular unit's onset. Providing a variety of learning resources, from textbooks and articles to videos and websites, allows students to choose the resources that best suit their learning style and pace.

Reflection is another key aspect of self-directed learning. Teachers can encourage students to reflect on their learning process through various means, such as journaling, discussion forums, or one-on-one meetings. This reflection process helps students identify their strengths and areas for improvement, fostering a deeper understanding of their learning journey.

Goal setting is another strategy that teachers can encourage. When students set their own learning goals, they gain a sense of ownership over their learning, stay motivated, and focused. Regular and constructive feedback from instructors can further support this process, helping students understand where they stand and what they need to do to improve.

Creating a supportive learning environment is key. In such an environment, students feel safe to take risks, make mistakes, and ask questions. This encourages them to take charge of their learning and explore new concepts and ideas.

In conclusion, integrating interactive digital tools like H5P into curricular unit design can significantly enhance the self-directed elements of a curricular unit. By promoting active learning, inclusivity, and pedagogical flexibility, these tools empower learners to take charge of their educational journey, fostering a more engaging and effective learning environment."

3.5. How to structure the Curricular Unit workspace

The CU workspace needs to take into account the student's learning process and his/her behavior once landing it: After arriving in the online curricular unit environment, the student looks for the most important things from his point of view: assignments, evaluation criteria, and deadlines. That is why it is important to find this information in a well-structured form right on the Start Here -page of the study unit. The student also needs directions on how to proceed and at

what pace. The progress of learning can be visualized using, for example, a timeline or a task table. In this way, the student can easily understand the whole. Even in the case of a self-paced curricular unit, a tentative schedule helps the student to understand the time distribution of the online study and to plan his own use of time.

It is up to the teacher team to decide whether the entire content of a study unit should be revealed at once or whether the content should be opened, for example, one week at a time. Presenting all assignments enables self-paced study but requires the student to be self-directed in terms of scheduling the CU.

Structure	Contents
Frontpage	Is this the small window in Moodle Curricular unit objectives and important links to contents
Start here -page	Contains all the **key information about the CU*.** It is a kind of map and compass for the student and tells how he will progress in that online study.
Orientation	**-** A motivational video about the subject of the study unit can be attached to the orientation section, or the teacher can introduce the central concepts in a video -Instructions for the introduction of the students, link to the corresponding discussion area - offers the opportunity to get to know other students of the same implementation (and later to form Teams for possible group tasks)- motivates the student within the scope of the topic and helps him get started- with which the student can identify his previous knowledge in relation to the subject area of the online study- can open the central concepts of online learning- where working partners can introduce themselves, for example, with the help of a video
Module 1/Week 1	Introduction to the Module Contents Assignments/Quizzes/Discussion/Project Module wrap-up
Module 2/Week 2	
Etc.	

Table 4. CU structure and contents

*Here are some suggestions for the Start here -page:
- Expected learning outcomes- Instruction on how to proceed in the study unit

- Introduction to instructors
- Schedule
- Evaluation criteria
- Practices for communication and interaction
- Feedback and grading policies
- General background information
- Useful links
- Guidance and feedback

3.5.1. Master Workspaces

Master workspace refers to jointly built workspaces that will serve as the basis for the workspaces of the implementations in the future. They have three goals: the long-term, cumulative development of the workspace, the coherence of studies from the student's perspective, and the avoidance of duplicate design work.

Each CU's implementation is the copy of original master workspace, and the students only operates in the implementation workspace during the CU. The responsible lecturer of the implementation updates the master workspace in collaboration with the multinational lecturer team before taking a new copy of the workspace for upcoming implementation. This ensures that the master workspace stays intact but is also continuously updated.

**Continuous Development of CUs
supported by the Master workspaces**
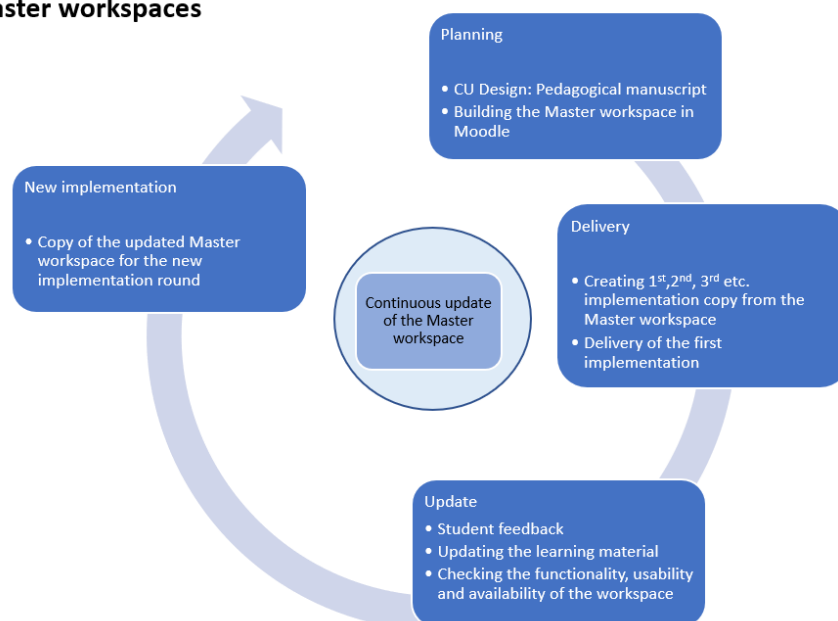
Figure 12. Description of the logic of the Master workspaces

3.5.2. Design of the assignments

A learning assignment is a significant method for a teacher to get the learner to learn new things in a pedagogically meaningful and thoughtful way. For online learning, the instructions for a learning assignment need to be more precise than for learning F2F. Don't be afraid of repetition in this matter but bring up what and when needs to be done and what you expect from the student as many times as possible. Formulate assignments unambiguously, you will avoid clarifications later. Make the first assignment of the online study unit motivating and easy ones in which the student can reflect on their previous knowledge and experiences. Use a unified base in task assignments: the student's work will be easier if the internal structure of the learning assignments is always kept the same.

Below you will the steps for preparing an online assignment. Prepare the task assignment as follows. Steps 2 to 4 are the most important part of the task assignment. In them, you describe what you expect the student to do.

1. Give your learning assignment an interesting title. The title should describe the content of the learning assignment. An interesting title gets the learner's attention.
2. Consider the purpose & objective of the assignment and how the student progresses while doing the task. Explain what you want the learners to learn (content, working methods, information-seeking, reflection, teamwork, regulating skills, summarizing, problem-solving, deduction, association, communication, understanding, perception interpretation, thinking or retrieval of existing knowledge). This way the students understand why the task is included in online studies. Also, highlighting the benefits of completing the task is a good way to motivate the student. Through the objective, you can also limit the task area. The more concrete the objective, the better. A precise definition of the objectives will help you formulate the assignment's assessment criteria.
3. Then break the assignment down into different phases. The assignment may have several parts: stage a, stage b, and so on. When the assignment may be divided into smaller parts it will give the learner a feeling of accomplishment and progress.
4. Write the instructions for each phase. A clear learning assignment can be written in an "imperative" mode. E.g.,
   a. START by ...
   b. 2. WATCH a 3-minute video ...

    c.   PAY ATTENTION to…

    d.   WRITE down the following…

    e.   SHARE the notes in your small group…

    f.   CHOOSE 3 central facts…

    g.   WRITE DOWN a list to share with others…

    h.   etc.

5. Choose and find materials. Explain how the materials should be used and what information sources should be used, and how you assess the reliability and usefulness of the source.

6. Estimate the time needed to complete the task as well as the digital tools and applications the student can/are expected to use when doing the assignment.

7. Establish assessment criteria for the assignment. This is important because the assessment strongly guides the student's actions. For example, the student should know whether you are evaluating the process of doing the assignment or just an outcome of it. By writing out the assessment criteria, you will also consider the relationship between the assignment and the objectives, and you may want to clarify the task assignment in some respects. Also, plan where and when will the students get feedback on their work. Does the assignment contain self-evaluation? Does the assignment contain peer evaluation?

When all the assignments of the online study are formulated in the same way, the student will find it easier to understand the tasks than in a situation where there are different kinds of task assignments (this can be a challenge, for example, when the online curricular unit is prepared by several teachers).

By using a unified format for task assignments, you can also make sure that each task assignment has the key information for doing the task.

Here is a proposal for a format to be used in assignments of the ManagiDiTH project:

- The purpose & objective of the assignment
- The content of the assignment (working instructions)
- Timing (if the assignment is scheduled) and tools for doing the assignment.
- Instructions on how to return the assignment (e.g., "Return all sections of the assignment in one document to the return box")
- Assessment (e.g., "The assignment is evaluated on a scale of pass/fail OR "The task is evaluated on a scale of x-x". "The task is accepted when…" OR "The task is completed commendably when…")
- Time resource (the time the student needs to complete the assignment): "XX hours".

3.5.3. Feedback and Support Mechanisms

Timely feedback and robust support mechanisms are essential for facilitating learner progression and addressing their needs effectively, particularly in a digital curricular unit, where interaction between teachers and students is more challenging.

Successful feedback in the learning process depends on the form and content of the conveyed message and the student's stage of development. It is most effective when based on previous attempts, with specific and challenging goals, and tasks of low complexity (Kirschner & Hendrick, 2020). Teachers can offer two types of feedback: personal and performance (Fig. 13).

Personal feedback relates to individual assessments, such as praising a student as an excellent performer (Hattie & Timperley, 2007). However, caution is necessary in providing this type of feedback as it has minimal impact on learning and can even discourage students from taking risks to protect their positive self-image. Personal feedback on factual errors should also be avoided as it may make students feel like failures (Hattie & Zierer, 2018).

Performance feedback varies in timing and focus, categorized as feedback on task, process, and self-regulation. It should always be context-specific rather than general (Kirschner & Hendrick, 2020).
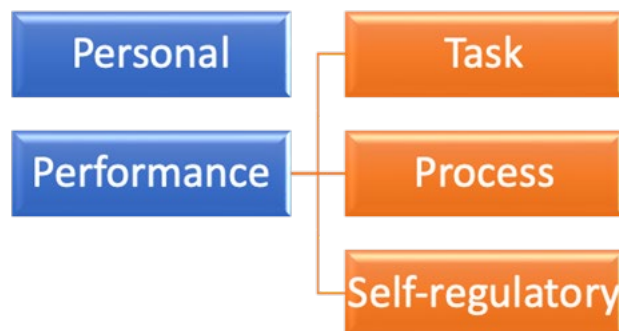
Figure 13. Types of feedback

Feedback on task compares the current state to the desired target state, providing information on task understanding and execution. It is more effective to highlight misconceptions rather than simply pointing out lacking information (Hattie & Timperley, 2007).

Feedback on process compares the present to a previous state, outlining the necessary aspects for task comprehension and execution. Examples include requesting connections between different parts of an activity and pointing out carelessness or neglect (Hattie & Zierer, 2018).

Self-regulatory feedback focuses on the future, guiding and regulating student actions. It encourages increased effort, self-reflection, judgment, and improvement (Hattie & Timperley, 2007). Unfortunately, students receive this type of feedback less frequently despite it being the one they desire the most (Hattie & Zierer, 2018).

Feedback should be a continuum between instruction and feedback, tailored to the student's level of learning, and may include elements from the next level to facilitate progression (Hattie & Zierer, 2018). For students with low domain knowledge or at a very early stage of the learning process, it is better to provide more instruction than feedback, as they may struggle to relate new information to prior knowledge (Kirschner & Hendrick, 2020).

Below, it is presented the feedback matrix of the three questions and levels of processing feedback of Hattie (2023) with examples of prompts:

Learner Stage	Feedback Level	Feeding Up (Where am I going?)	Feeding Back (How am I going?)	Feeding Forward (What do I have to do next?)
Novice	Task	Today we are learning… Success in this task will look like… (exemplar/model)… We are looking for…	You have/haven't met the learning intention by… Your answer isn't what we are looking for because…	To fully meet the learning intention you could… Adding/removing … would improve your work
Proficient	Process	The key ideas in this task are… These ideas are related by… Key questions you could ask about this task are… Strategies you will need in this task are…	Your understanding of the ideas within this task is… Your thinking about this task is… You used suitable strategies to a … level.	You could improve your understanding of concepts by… Thinking further about … could improve your work by…
Advanced	Self-Regulatory	How will you use the learning intention? How could you use the success criteria Which other ways could you monitor your work?	Are you on track with your work? How do you know? Are you on track to achieving your goal?	How could you deepen your understandings? How could you improve your work? What is the next step of your learning?

Table 5. Feedback prompts (Hattie, 2023, p. 322, 323)

You need to provide effective feedback considering personal and performance aspects, choosing appropriate moments to deliver it. Specific feedback, customized to the student's

context, and directed towards challenging goals, fosters self-regulation and enhances learning outcomes.

Here is a proposed format to provide feedback on student tasks for the Master's programme, based on Hattie's work (2023):

- Make comments and grades on an assignment; return the assignments to the students. Allow at least a day's gap before proceeding to the next step. This period ensures that the feedback is not solely based on short-term memory.
- Ask the students to take notes about the feedback you have provided. Provide them with Table T1 for this purpose with examples of suitable prompts. Encourage the students to respond to the feedback, aiming it at their current level of work for the next level (when appropriate).
- Use the following four feedback questions to review the current feedback practices for students, whether from teachers or peers: Where have I done well? Where do I need to improve? How can I improve? What can I do next time?
- Foster collaboration among students to increase their engagement, promote asking questions, and seek assistance from peers.
- Finally, invite students to write at least one question they still have at the bottom of their work before submitting it.

Moodle offers various feedback and support features to nurture a supportive learning environment. Timely feedback on assignments, quizzes, and discussions enables learners to identify areas for improvement and track their academic progress. Feedback ensures students' progress and makes them feel supported while ensuring their work is given value and appreciation. Virtual office hours and discussion forums provide avenues for real-time interaction between educators and students, fostering mentorship, academic guidance, and a sense of community, which is essential in a digital curricular unit. Synchronous lessons and hours can also be used as Q&A. If the students are previously given a determined theme to study and work on, the synchronous lesson might work as a time for presenting questions to the teacher, instead of serving only as an expositive class. This also ensures a higher amount of dynamism and support for the student. Moreover, peer mentoring initiatives empower students to support each other's learning journey, promoting a collaborative environment, and allowing students to receive feedback from more than just their teachers.
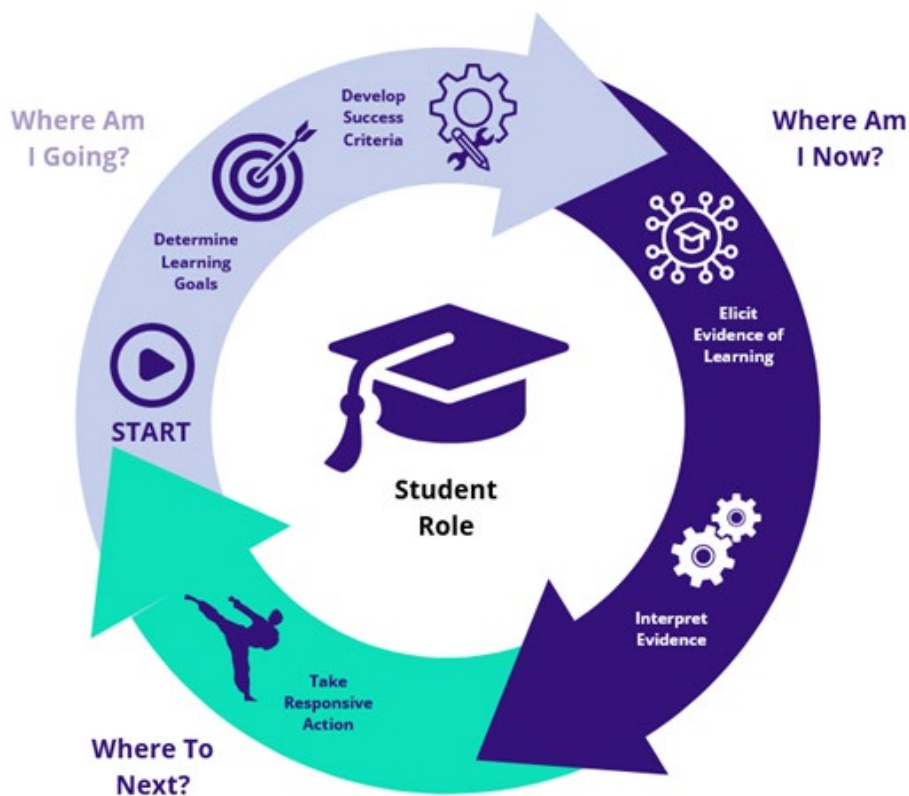
Figure 14. Feedback Loop Image adapted from Jones, Nelson & Gerzon (2021).

3.5.4. Assignments

Efficient assignment management is crucial for streamlining the assessment process and providing constructive feedback, for both teachers and students alike. Moodle's assignment tools simplify assignment creation, grading, and administration. Automatic grading features enable teachers to assess objective assessments swiftly, saving time and effort, allowing for more time to be spent in activities. It also ensures that students get instant feedback, without the need for the teacher to personally review each assignment. The reusability of assignments (and contents) allows teachers to recycle and adapt existing assignments across multiple curricular units, promoting efficiency and consistency. Furthermore, Moodle supports the customization of assignment difficulty levels, catering to diverse learner abilities and ensuring equitable assessment practices. It's also important to ensure that the difficulty levels of assignments escalate as the CU progresses, this way, there's a higher chance that students remain engaged in the CU and achieve their learning objectives. A student who is confronted with a very difficult task right at the start of the CU or assignment might feel discouraged from completing it altogether, instead of striving to achieve the learning objectives. To ensure effective assignment planning, the first tasks of the CU can be quizzes, for instance, which ensure immediate feedback, and can provide various difficulty levels, and then a more complex

assignment, or group activity, at the end of the CU, which will require more attention from the teacher, as well as more dedication from the student.

3.6. Student Assessment

The Master programme emphasizes a comprehensive assessment approach, incorporating formative evaluation, self-evaluation, and peer evaluation. These diverse assessment methods are tailored to specific subjects, with the teacher team determining the most suitable approach for each CU. Students are assessed jointly by the teacher team in charge of the Curricular Unit.

The main function of assessment is to recognize the student's competence. In the curriculum, the learning outcomes are described as the learner's actions, so that the development of competence can be assessed with reference to the set goals. In order to recognise competence, identifying the student's starting level is an essential part of the assessment. With competence assessment and feedback, learning can be directed toward the learning outcomes. The assessment of competence promotes the student's professional growth.

The following guidelines for assessment are proposed for the programme:
- The evaluation criteria must be discussed when the CU/project begins. They direct the student's actions, offer motivation, and tell the student what is important to succeed in the study unit/project.
- Students must understand how the final grade for the entire CU is determined right from the beginning. Are there different weights for assignments, or different weights for groups of assignments? How do these factors affect the final grade?
- The student's competence is evaluated individually, even if the studies were implemented as a group or project work. Different forms of self, peer, and group assessment or combinations of these are used for the assessment depending on the situation.
- Study Units are evaluated with points. Students need to get at least 50% of the maximum points to pass the Study Unit. Each university will change the points to the grades based on their own grading system.
- In assessing assignments and providing feedback, assessment matrices or rubrics are preferably utilized. Rubrics, among other things, promote transparency and fairness in assessment, and also help develop students' self-assessment skills.
- Assessment criteria for a project assignment: Working life representatives may also give feedback on the results of the project results provided by the students, and the teacher may take that into account.

3.6.1. The final grade and Moodle categories (assignment groups)

Below is an illustration with a calculated example of a situation where weighted assignment groups, referred to as categories in Moodle, are used in the curricular unit. In the image, the curricular unit has two assignment groups weighted at 30% and 70%. Within each assignment group (or category), the internal assignments hold equal value - each assignment is worth 100 points. By using categories, each assignment can have a different value in relation to the overall grade.

HOW THE FINAL GRADE IS DETERMINED

A CU consists of categories that add up to 100 % (example below)

Student's performance is between 0 - 100 % calculated based on the category grades. The passing level is 50 %

30 %   70 %

Category: Written assignments

Category: Discussion assignments

100 p.   100 p.

100 p.
100 p.
100 p.

100 %

Student performance mapped to the specific Grading schemes (Greek (x-y), Portuguese (10-20), Finnish (1-5))

50 %

Failed according to every Grading scheme Greek, Portuguese, Finnish

0 %

Example – Category Written assignments. Student receives 70/100 p., 90/100 p. and 75/100 p. -> in total 235/300 points.

Example – Category Discussion assignments. Student receives 80/100 p. and 95/100 p. -> in total 175/200 points.

Example – Final grade: 30% x (235/300) + 70% (175/200) ≈ 23.5 % + 61.25 % ≈ 85 %

Example – Final grade: 85 % is mapped to the Grading Schemes.

Co-funded by the European Union

Figure 15. Final grade

3.6.2. Rubrics for assignments

Generally, rubrics present the evaluation criteria and performance levels. Evaluation of an assignment is divided into several criteria and each criterion is described in relation to performance levels from the highest to the lowest. The "Excellent" level communicates the highest level of student performance. The lowest level describes the expectations in relation to passing the curricular unit with the lowest acceptable grade.

Rubrics play an important role in describing different levels of student performance. They serve as a tool for communicating performance expectations and enhancing the transparency of evaluations. From the students' perspective, rubrics provide a foundation for achieving excellence and enable self-assessment.

By referring to the rubric, students can understand the specific expectations and use them as a guide when reviewing their work, having received teachers' feedback and comments. The weighing and the descriptions of the evaluation criteria help students understand how to optimize their effort with respect to achieving desired grades and learning outcomes.

From the teachers' point of view, rubrics offer several benefits. They contribute to a balanced evaluation process and quicker assessment. Additionally, rubrics promote fairness and objectivity by providing clear criteria for grading. Since many curricular units have similar types of assignments, such as reports, essays, discussions, and group work, rubrics can facilitate teacher collaboration. By designing rubrics together, teachers can ensure consistency of evaluation across different curricular units, improving equality in the assessment process.

The rubric example below presents a case from a curricular unit in which students need to accumulate 60 percent of the maximum points that one can achieve in the curricular unit. That is why the passing grade is set at 50 % of the criterion's maximum points (excellent level). As an example, Knowledge base criterium – the lowest passing level for a student is 50% out of 40 points which equals 20. And this is repeated regarding each criterium.

In the example table below, the maximum number of points for the essay assignment is 100. The grading scale for the entire curricular unit ranges from 0 to 5, with 5 representing excellent, the highest grade, 1 representing the lowest passing grade, and 0 representing failure.

Evaluation rubric for essays	Performance levels			
Criteria	Excellent	Good	Satisfactory	Failed
Knowledge base - the knowledge base includes the use of sources and professional concepts, as well as the compilation of information.	**40 points** The student utilizes diverse, current, and reliable sources critically. Mastery of concepts and matters is thorough, and the student produces consistent and profound knowledge. The source citations are impeccable	**30 points** The student utilizes current and reliable sources. Concepts and matters are well-managed. The student produces consistent information. The source citations are mainly in order and are	**20 points** The student utilizes current sources. Concepts and matters are mostly well-managed. The student produces information and creates perspectives. The source	**0 points** Sources are not utilized. There are clear deficiencies in the mastery of concepts and matters. The creation of knowledge is shaky, inconsistent, and incomplete.

	and based on verifiable information.	based on verifiable information.	citations are mainly in order.	
Reflection and personal thinking - reflection and personal thinking include dialogue between the knowledge base and personal thinking, argumentation, analytical approach, and expression of one's viewpoint.	**40 points** The student presents a convincing and well-reasoned view of the subject matter. The student demonstrates critical and independent thinking, addressing the topic by relying on his/her thoughts and examples. The student argues persuasively with factual reasoning, and the claims are carefully considered, generating new knowledge and perspectives. The dialogue between the knowledge base and personal thinking is reflective and analytical.	**30 points** The student presents a reasoned view on the topic at hand. The student demonstrates independent thinking and addresses the topic with examples. The student argues based on facts, and the claims are well-considered. The dialogue between the knowledge base and personal thinking is reflective.	**20 points** The student presents a view on the topic at hand, relying on examples. The student's claims are partly justified. There is a dialogue between the knowledge base and personal thinking.	**0 points** A justified view on the topic is lacking or absent. The student does not credibly support the claims. There is no dialogue between personal thinking and the knowledge base.
Written work - written work includes structure, adherence to the task, style of writing, and mastery of language.	**20 points** The structure is clear, coherent, and meets the requirements of the assignment. The student takes into account the audience and maintains a neutral, concrete, and objective writing style. The	**15 points** The structure is consistent and meets the requirements of the assignment. The student takes into account the audience and maintains a neutral and objective writing	**10 points** The structure is clear and mostly meets the requirements of the assignment. The student maintains an objective writing style. The text shows	**0 points** The structure is inconsistent and partly contrary to the assignment. There are deficiencies in considering the audience and in objectivity. There are shortcomings in the subject matter and the

	text shows clear logical relationships between the entities. The text is clear, careful, and concise, and demonstrates a strong command of language. The format is appropriate.	style. The text shows logical relationships between the entities. The text is mainly careful and demonstrates language proficiency. The format is appropriate.	relationships between the entities. The text is clear. The format is mainly appropriate.	relationships between them. The text is unclear, and the format does not follow the guidelines.

Table 6. Example of an evaluation rubric for essay

In Moodle, rubrics effectively facilitate the assessment of students' work. Using rubrics, instructors can provide not only criterion-based performance levels but also criterion-specific free-form feedback. Additionally, it is possible to provide feedback outside the rubric. This greatly supports formative assessment, enabling students' continuous development throughout the curricular unit. See the picture below- not the best example of teacher's feedback but just an illustration of the options for teachers to utilize rubrics.

Figure 16. Discussion assignment example with rubric

3.6.3. Assigning weights to assignment groups (categories)

The aim is for each assignment to have a maximum score of one hundred points. The relative importance of assignments in relation to the final grade of the curricular unit can be determined using assignment groups (categories in Moodle).

Below is an image example illustrating two options for weighting assignments using Moodle categories. In the left option, two assignment groups are used, with weights of 70 and 30 percent relative to the final grade, respectively. All assignments within each assignment group are worth one hundred points.

In the second option, on the right, assignment groups have the same weights relative to the final grade as in the first option, but the relative weight of assignments within the assignment groups, i.e., within the category, is expressed using different maximum points. In this model, a possible drawback is that it requires more effort to utilize common assessment rubrics. However, this could be a suitable option depending on the context/CU.
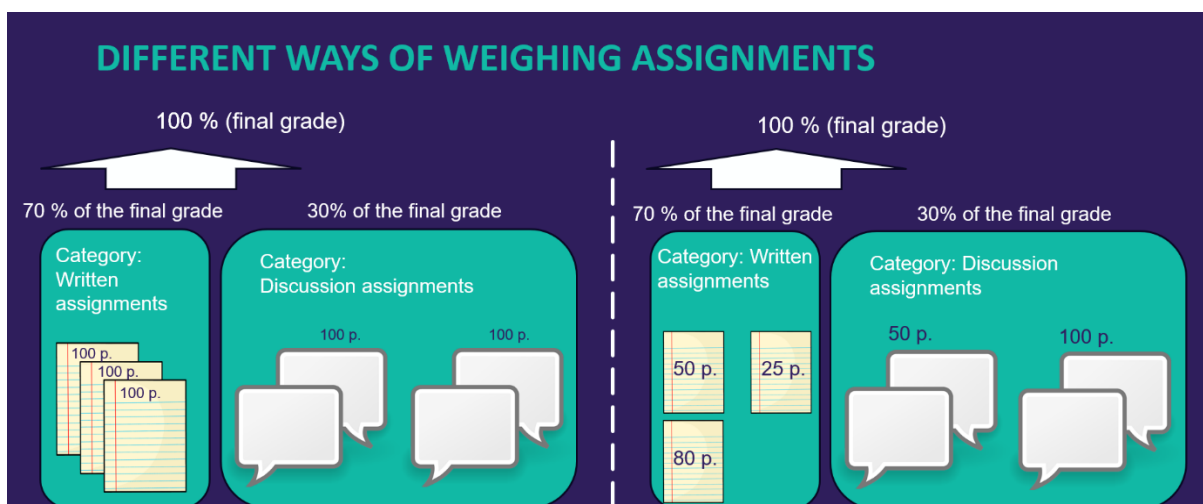
Figure 17. Assignment weighing

3.6.4. Grade aggregation in Moodle

In Moodle, grade aggregation refers to the method used to calculate and combine grades from different activities within a curricular unit to produce an overall grade for a student. Moodle offers several aggregation methods, each with its own way of calculating the final grade. Some common grade aggregation methods in Moodle include:
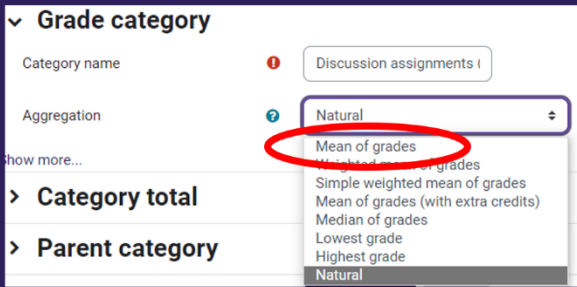
- Mean of grades: the mean (average) of all grades across different activities. It gives equal weight to each activity.
- Weighted mean of grades: you can assign different weights to different activities based on their importance. The final grade is calculated as the weighted average of grades.
- Simple weighted mean of grades: similar to the weighted mean method, but it calculates the weighted average without considering extra credit points.
- Median of grades: calculates the median grade across different activities. It can be useful to mitigate the impact of outliers.
- Sum of grades: adds up all the grades from different activities to calculate the final grade.
- Natural: the highest grade is taken from all activities. This can be useful when only the highest score is considered.
- Lowest: takes the lowest grade from all activities. It's useful when the lowest score is considered for grading.

These aggregation methods provide instructors with flexibility in how they want to calculate the final grade for a curricular unit based on the activities and assessments they have set up. Below two examples are presented to give an additional explanation on the two types that might fit the project's needs best – i) *Mean of grades* and ii) *Simple weighted mean of grades.*

i) In this first example, the student's performance in tasks within one category is presented. He/she has received scores as follows: for task A, 70 out of 100 points; for task B, 20 out of 80 points; and for the last task, task C, the student has received full marks, 10 out of 10. The example below illustrates how the "Mean of Grades" aggregation type determines the category grade for a student.

Assignments (Group 1):
- A max 100 points
- B max 80 points
- C max 10 points

Student's points:
- A 70 points
- B 20 points
- C 10 points
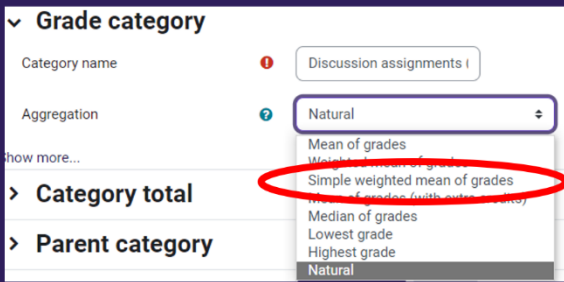
Category's (Group 1) maximum grade : 70

Mean of grades - the sum of all grades divided by the total number of grades:

$$Group1 = \frac{\frac{70}{100}+\frac{20}{80}+\frac{10}{10}}{3}$$

- = (0.7+0.25+1)/3 = 1.95/3 = 0.65
- If Category Group 1 maximum grade equals to 70, then Student's grade for this category is 0.65x70 = 45.5

Figure 18. Example1 of grade aggregation in Moodle

ii) In the example below, again, the student's performance in tasks within one category is presented. He/she has received scores similarly as compared to the first example: for task A, 70 out of 100 points; for task B, 20 out of 80 points; and for the last task, task C, the student has received full marks, 10 out of 10. The example below illustrates how the "Simple Weighted Mean of Grades" aggregation type determines the category grade for a student. You might notice that regardless of which example's aggregation type is used, i or ii, if we use the same maximum score of 100 for the assignments, the final grade for the category is the same for the student.

Assignments (Group 1):
- A max 100 points
- B max 80 points
- C max 10 points

Student's points:
- A 70 points
- B 20 points
- C 10 points

Category's (Group 1) maximum grade : 70

Simple weighted mean of grades - the weight of each item is its Maximum grade:

$$Group1 = \frac{0.7x100+0.25x80+1.0x10}{100+80+10}$$

- = (70+20+10)/190 = 100/190 ≈ 0.53
- If Category Group 1 maximum grade equals to 70, then Student's grade for this category is 0.53x70 = 37.1

Figure 19. Example 2 of grade aggregation

Additional help: Grade aggregation in Moodle.

3.7. Accessibility and copyright issues

3.7.1. Accessibility

ManagiDiTH strives to ensuring an accessible and pleasant experience for all users, regardless of disability.

Here you can read about Moodle's features for promoting accessibility: How does Moodle provide accessible learning? Below you will find guidelines for accessibility design.

1. **Layout and design**
   The layout of a page should be simple, clean, and uncluttered. Navigation should be clear and consistent from page to page.
   When adding content, keep content organized and chunked together in short paragraphs so users can scan your content easily.

2. **Headings**
   Headings should always include descriptive section headings. Section headings allow for a quick scan of the content for sighted and non-sighted users.

3. Images
   Alternative (alt) text is required to provide a textual alternative to non-text content in web pages. This text will be read aloud to a person using a screen reader.

4. **Links**
   When adding a link, instead of pasting in the URL directly, attach the link to words that describe to words that describe the link destination. This behavior will help everyone (whether they are screen reader users or not) understand where the link will take them.

5. **Content formatting**
   Users can view text contrast well when formatting with bold or italics, which help distinguish between important content items. There should be enough color contrast between the background and the text, which will make the content easier to read.

6. **Tables**
   Tables should be used for data display, not layout. Headings should always be included for columns and rows

7. **Videos**
   Videos should always have the option to view captions.
   For external videos, check with the video provider for caption availability. Learn how to Caption YouTube Videos owned by you.

8. **Content file formats**
   Below you will find tips to ensure accessibility of some of the most popular file formats.

- **Microsoft Word**

  General accessibility guidelines apply to designing a Word document. Tips for creating accessible word documents

- **PowerPoint**

  General accessibility guidelines apply to designing a PowerPoint document. Use the built-in accessibility checker: File › info › check for issues › check for accessibility.

- **Portable Document Format (PDF)**

  Portable Document Format (PDFs) should be created as accessible documents. Most commonly, PDFs are created from Word documents. If you do not have the original source file for a PDF document, you can tag the PDF to help with accessibility.

Additional guidelines and links:

- Use the ManagiDiTH slide layout template whenever possible.
- When you can't use a template, use one with the slide title only.
- Write presenter's notes in the provided area.
- Apply ALT text to images.
- Add captions to the slide or presenter's notes for complicated images (e.g. diagrams or maps).
- If embedding video, caption the video and ensure the player controls are accessible.
- If embedding audio, include a transcript.

WebAIM PDF Accessibility tutorial
Checking PDFs for Accessibility

3.7.2. Copyright issues

As stated in the Grant Agreement of the project, the publications created in this project as well as in the Master's programme need to be Open Access, including the learning materials. Therefore, the learning materials produced in this program will be licensed under the Creative Commons CC BY-SA 4.0. Creative Commons (CC) -license is a commonly used open license that allows the open sharing and use of copyrighted works.

Using the CC license CC-BY-SA permits all citizens to use the materials to learn and gain knowledge about healthcare digitalisation. With a CC- BY-SA license the public is free to share and adapt the materials, but appropriate credit must be given, and all altered materials need to be distributed under the same CC BY-SA 4.0 license (Creative Commons 2024).

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3.8. Check the quality of your curricular unit

Once your curricular unit is built and ready in Moodle, a quality check will be done by the members of the WP3 team. The quality criteria are listed below:

Operational Criteria
A1. Technical functionality (platform and applications) * The workspace works technically well (It has been tested with the student view) * Help for using external applications is easy to find (e.g. Padlet, MIRO). **A2. ManagiDiTH brand visible** * The workspace follows the ManagiDiTH project's shared identity and structure. **A3. CC-license, and copyrights** * The workspace is CC licensed and copyrights are defined * The copyrights of learning materials have been taken into account. **A4. Accessibility** * Accessibility requirements have been taken into account * Text structuring and page structure support content readability and adoption. * The external learning material for the curricular unit can be found electronically and with ease, and there's no requirement for additional registration.
Pedagogical Criteria
B1. Welcome section * The curricular unit includes an introductory section on the entire curricular unit which introduces and motivates the student to the topic. * The key information about the curricular unit can easily be found in the welcome section: visual template of the learning path, video introduction to the curricular unit, teacher's contact info, schedule, and assessment. * The rationale of the competency assessment and the formation of the final grade have been clearly expressed to the student for the entire curricular unit **B2. Assignments design and workload management**

* The objective, scope, method of implementation, and assessment criteria for each task can be found in the description of the assignment.
* The workload of the curricular unit has been assessed at the module/section and task level.

B3. Division of curricular unit content & self-guided elements
* The content of the curricular unit is logically divided into modules/sections, each containing an introduction to the topic and a summary at the end of the module
* If the curricular unit includes a self-guided element for students, students have clear instructions for its completion

B4. Learning methods and collaborative learning
* Different ways of learning are used in a versatile manner during the curricular unit (information acquisition, investigation, discussion, collaboration, practice, production)
* The curricular unit includes both synchronous and asynchronous interaction between students.

B5. Visual elements
* Visual elements (images, graphics, animations, videos) have been used to support and enliven content.

B6. Use of AI
*The use of Artificial Intelligence (AI tools, applications) has been taken into account. Instructions on using AI are provided.
* In case the use of AI is not desired, the assignments are designed accordingly - the assignment should not encourage the use of AI.

Content Criteria

C1. Competence development and alignment with EQF7
* The activities support the student's ability to develop and demonstrate their competence
* The content of the curricular unit and its activities are in line with the achievement of the learning outcomes (EQF7) .

C2. Working life-connected learning
 The implementation method, structure, and learning environment of the curricular unit support working life-connected learning.

C3. Up-to-date content
* The content and supporting materials are up-to-date and compiled from reliable sources

4. During the curricular unit

4.1. 5E Model of Instruction

The effectiveness of the 5E model of instruction has been supported by research in education in recent years (Rodriguez et al., 2019; Sung & Chiu, 2021; Chan et al., 2022; Yu et al., 2022). The 5E model consists of five stages: engage, explore, explain, elaborate, and evaluate. Effective

completion of the phases provides coherent instruction to the learner for a better understanding of knowledge, attitude, and skills within an excellent progression of cognition (Garcia et al., 2021). The 'engage' phase includes activities to arouse curiosity about the new subject students will learn based on prior knowledge (Wilson et al., 2010). During exploration and explanation activities, students are expected to discover knowledge, and they are expected to do so by using scientific process skills (Suwito et al., 2020). These phases are very important for cognition at the understanding, application, and analysis levels of Bloom's taxonomy, although sharp boundaries do not separate them. In the elaboration and evaluation stages of 5E, students are expected to use higher-order thinking skills because these stages are very precious for Bloom's cognitive levels of evaluating and creating (Ong et al., 2021).

4.1.1. Engage

Keep students engaged. To have engagement, students should be involved and have clear orientations on furthering their learning outside classes. Every student is different, so using various formats adapted to learners is basic. Motivation and keeping students interested is essential when teaching about innovation and the digital health panorama. Promoting extracurricular initiatives can add value to their participation in class, as does providing networking opportunities. Another way to attract motivated learners is to have them prepare for sessions beforehand by providing relevant materials, scheduling presentations, and handing out information about guest speakers.

4.1.2. Explore

Explore how stakeholder mapping and prioritisation help programme leaders customise their outreach and assess what will work best for their culture, context, and situation.
Watch videos, Read Articles and related papers, Listen to podcasts, and Interview.

4.1.3. Explain

Encourage students to explain their observations and findings about stakeholder analysis methods in their own words. Define criteria for identifying and prioritising stakeholders and select engagement mechanisms. Allow students to teach each other concepts by recording videos.

4.1.4. Elaborate

Apply the learning to new or novel situations; therefore, stakeholder mapping involves identifying the interested parties, their interests, possible impacts and influences, and how they interact or within the process.

4.1.5. Evaluate

Asking for feedback during classes makes students feel empowered and helps them assess the positive and negative aspects of what has been delivered and adapt accordingly. Regularly check students' evolution and give constructive critiques to guide their learning process. One procedure that helps the teacher give and receive insightful feedback is creating small groups and mentoring them.

The participants engage in dialogue with competing experts and decision-makers based on questions they develop in small group discussions with trained moderators. Show evidence of accomplishment in stakeholder mapping.

5. Guidance of the Master's thesis

A thesis is a process of the student's professional development. It enables the student to obtain more in-depth competence in their own field, gain experience in the development of workplaces and demonstrate their ability to apply a research-orientated approach, work independently, and innovate. The thesis is linked to the completed studies as well as prior theoretical knowledge in the subject area in question and information obtained from working life. Each student will be assigned a thesis supervisor. This person must hold a PhD degree.

Thesis process
- Students will choose a topic and research question to explore. This will be guided during MT18 curricula unit
- Thesis document template will be provided in MT18.
- The Master thesis can be done as individual, pair or group work. The aim is that students have chosen their topic in second semester.
- Students will have supervisors for their thesis with whom they will have regular meetings.
- The reference style is APA.
- The length of the thesis is about 80 pages.
- The thesis is written in the language of education (English).
- Prior to thesis submission Turnitin will be used to review plagiarism.
- Examination committee: three/two members.
- Students with 2+ years' work experience need to submit their final thesis through Laurea electronic system. Their thesis will be a public document.
- Students have an opportunity to continue their studies in AUTH and ISCTE at a PhD level.

Curricula Unit 18 will guide students in their master thesis process as illustrated below:
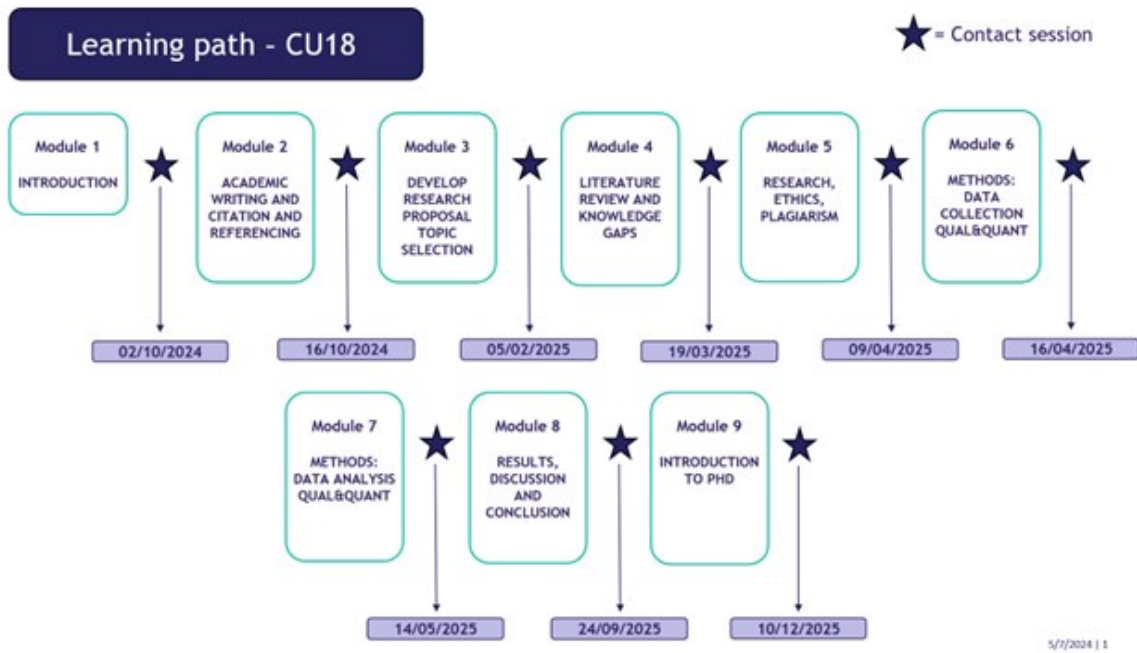
Figure 20. Master thesis process

6. Building and delivering the CU in the Moodle

In today's dynamic educational landscape, the effective delivery of curricular unit content plays a pivotal role in engaging learners and fostering meaningful interactions. Moodle offers a versatile platform for educators to create enriching learning experiences. In the ManagiDiTH master's degree, it's possible to see how Moodle can be leveraged to deliver a curricular unit unit, incorporating interactive learning activities, multimedia integration, feedback mechanisms, and data-driven analysis.

The following section explains the use of curricular unit template, as well as how content can be created in the Moodle platform. Besides building the content, it is also important to have guidelines about delivering the curricular units.

6.1. ManagiDiTH curricular unit template

A curricular unit template has been created to unify the overall look of the ManagiDiTH curricular units. The curricular unit template includes modules, pages and instructions on how to build the module, so it is easier for the teachers to start building the content. Unified CU workspaces also help students, as it is easier for them to find information on assigned places in the curricular unit,

for example all important information regarding studying in the curricular unit is added to the welcome module. Following a logical structure in curricular unit design allows students to study more efficiently.

The curricular unit template was copied to all ManagiDiTH curricular units as a base, which the teachers used to build their curricular units, by adding materials, assignments, and quizzes. These curricular unit workspaces are then used as Master workspaces and the teachers will copy the curricular unit content from the master workspace to upcoming implementations.

6.2. Content creation

Moodle provides the versatility to design a comprehensive educational experience. Understanding how to utilise all features effectively can significantly enhance the learning journey for students.

Some general good practices may include ensuring that all content is aligned with learning objectives and is accessible to all students. Furthermore, it is useful to utilise Moodle's settings to enhance the learning experience, such as enabling activity completion tracking, which allows students to monitor their progress.

6.2.1. Building Quizzes and Assignments

Creating quizzes in Moodle is straightforward and allows for a variety of question types, including multiple-choice, true/false, short answer, and matching. To begin, navigate to the curricular unit where you want to add a quiz, click on "Add an activity or resource," and select "Quiz." After giving your quiz a name and description, set the timing, grade, and layout preferences. When adding questions, consider including a mix of question types to cater to different learning styles and to assess various levels of understanding. Use feedback options to provide immediate responses to correct and incorrect answers, which can help reinforce learning. In terms of settings, consider randomising questions to check the level of flexibility of students. Check Moodle instructions on how to build a quiz for more information on how to build a quiz.

Assignments in Moodle can be created similarly. Choose "Assignment" from the activity chooser, then provide the assignment details, including the title, description, and due dates. Moodle supports various submission types, such as online text and file submissions, and allows for individual and group assignments. Ensure that grading criteria are clear and provide rubrics if applicable, to help students understand the assessment standards. Utilising plagiarism detection tools available in Moodle (see Turnitin) can also maintain academic integrity. As a

good practice for assignments, set up automated reminders for due dates and provide timely feedback.

Check instructions on how to set up assignments for more information on settings and instructions on how to use an assignment.

6.2.2. Workshops and Peer Assessment

Workshops in Moodle facilitate peer assessment and collaborative learning. This tool enables students to submit their work and then assess the submissions of their peers using a structured rubric provided by the instructor. To set up a workshop, select "Workshop" from the activity chooser and follow the setup instructions, including defining the assessment criteria and the grading strategy. Workshops typically involve several phases: setup, submission, assessment, grading evaluation, and closing. Each phase should be carefully managed to ensure smooth progression and meaningful feedback.

Best practices for using workshops include clear instructions and training on how to provide constructive feedback. This not only aids in the learning process but also helps develop critical thinking and evaluative skills among students. Regularly monitor the workshop activity to address any issues promptly and provide additional support where needed. Remember to define clear criteria for the students to understand the process. If needed, you can use anonymous peer reviews to ensure unbiased assessments.

Check instructions on how to set up a workshop for more information on settings and instructions on how to use workshops.

6.2.3. Video Lectures and Presentations

Video lectures and presentations can greatly enhance the learning experience by providing visual and auditory content. To add video content in Moodle, you can use the "Page" or "Label" resources or embed videos directly within the curricular unit sections. Ensure that videos are of high quality, with clear audio and visuals, and consider adding captions for accessibility.
When creating video content, keep the lectures concise and focused to maintain student engagement. Break down lengthy topics into shorter segments and complement videos with interactive elements such as quizzes or discussion forums to encourage active learning. You can use H5P activity to complement all interactive content.

6.3. Curricular unit checklist

The curricular unit checklist consists of functional, pedagogical and content criteria. All these will be checked by the teachers of the curricular unit before the curricular unit is published, and verified by the Work Package 3 experts. The checklist can be found on every curricular unit page and is made with the Checklist plugin tool. With this list the teachers can check the criteria they have fulfilled, so they can keep up with what they have already done and what still needs to be done.

The criteria are as follows:

Functional criteria
- CU workspace uses the visuals and structure defined by ManagiDiTH project
- The teacher has tested the functionality of the CU workspace in student view
- Accessibility requirements have been taken into account throughout the CU
- Page structure and headings support the readability and understanding of content
- Licensing and copyrights have been taken into account on CU workspace
- Access rights to the materials have been checked and secured
- References and copyright information are appropriately marked
- Instructions for third-party applications are mentioned and easy to find in the CU workspace (for example, Padlet, MIRO)
- The materials and structure of the CU workspace also work on mobile devices
- The possible use of artificial intelligence has been taken into account in the CU workspace

Pedagogical criteria
- Crucial information can be easily found in the same place (e.g. welcome section or orientation section)
- The learning outcomes of the curricular unit are divided into sub-objectives at the level of modules and assignments
- The CU workspace includes an introduction to the entire study, which introduces and orientates the student to the topic
- The content in the CU workspace is logically divided into modules, including an introduction to the topic and a summary at the end of the module
- The assessment criteria for competence assessment are clear and in relation to the learning outcomes of the studies
- The student can find curricular unit and assignment assessment criteria easily
- The assignments make use of assessment rubrics

- The objective, scope, method of completion and evaluation criteria for each task can be found in the assignment
- The curricular unit workload has been assessed at module and assignment level
- The curricular unit utilises a variety of different ways of learning
- The curricular unit includes interaction between students (synchronous or asynchronous)
- Visual elements (images, graphics, animations, videos) have been used to support and invigorate the content
- Self-directed learning phases are pedagogically well structured and clearly instructed for a student.
- The use of artificial intelligence in assignments has been taken into account and the student has been instructed in how they can use artificial intelligence

Content criteria
- The tasks and activities of the curricular unit are clearly linked to the learning outcomes and correspond in scope to the entity being studied
- The curricular unit activities support the student's opportunity to develop and show their skills
- The content and supporting materials used in the CU workspace are up-to-date and have been compiled from reliable sources
- Utilising research-based knowledge in learning assignments: during the curricular unit, students utilise scientific and researched information to support their own argumentation

6.4. Pedagogical media

There will be a variety of different pedagogical media used in the ManagiDiTH Master's degree curricular units, including videos and podcasts. The consumption of video materials and podcasts has been on the rise in the last decades, now with mobile devices it is easier than ever to watch and listen to media content everywhere.

Videos are also considered to be an important part of education, especially in online curricular units. Educators, who want to use educational videos, should consider three elements when making and using this type of content in their curricular units: the cognitive load for the students, student engagement and active learning. Cognitive load can be minimized by, for example, highlighting important words, making short videos, or adding interactive questions. Student engagement is better when the videos are shorter, style is conversational, and students feel

that the material presented is made for them. Interactive features, questions and adding videos as part of assignments can enhance active learning for the students (Brame 2016).

Videos are powerful tools in education. They offer a multisensory experience, can be watched as many times as needed and one can watch them at any time of day. Through videos it is possible to create emotions, which in turn help us remember the topics discussed in the video. Carefully constructed use of special effects, examples, video material and music can capture learner's attention.

Besides videos, podcasts are also on the rise in the education field. Podcasts can be any length, from one episode to a series of episodes. Listeners can listen to podcasts anywhere, at any time, which can aid concentration.

When creating pedagogical media, it is important to consider your target audience, who are the people you are making the media for. The content might also work better on some specific media, for example it might be easier to explain complicated structures with infographics through a video, instead of trying to explain it on a podcast. As a content creator you can bring in your own voice, your personality. It is possible to evoke emotions through media, which is important in making engaging, memorable content. Content is the most important aspect in engaging pedagogical media, one does not need expensive equipment and special effects in their content, more important is how it is pedagogically well delivered in the chosen media. Accessibility in media must also be considered while creating media. Videos need to have subtitles and audio clips require a transcript.

The following media types can be used in online curricular units:
- presentations
- lectures
- interactive videos (H5P)
- interviews
- discussions
- podcasts
- radio dramas / reports
- videocasts

6.4.1. Instructions on how to record lectures in Teams

6.4.1.1 Recording a lecture video independently

There are many ways to record lecture videos on your own. The key is to make the workflow as smooth as possible for your needs.

Here are some tools with which you can easily record lecture videos:
1. Clipchamp
2. Teams and Zoom
3. PowerPoint
4. Camera/mobile phone

1. Clipchamp
Microsoft ́s Clipchamp video editor is handy for many kinds of media creation needs. When opening the app just select Record yourself and then you can select to record your screen (slides) and yourself. After recording the lecture, the clips (screen (slides) and yourself presenting) will be on the Clipchamp timeline ready for editing. When you are satisfied with the result, you can export the finished video.

2. Teams and Zoom
You can record a lecture video simplyby making an online meeting by yourself and keeping a lecture. Just share your screen, present your slides and click record. When you are done you can edit the video with, for example, Clipchamp.

Instruction link for recording in Teams
Instruction link for recording in Zoom

3. PowerPoint
You can also record yourself with PowerPoint.
Instructions:
1. Open the slide you want to start recording from.
2. Near the upper right corner of the PowerPoint window, select **Record**.
3. Choose from two options
4. When you're ready, select the round, red **Record** button, wait for the countdown, then start speaking.

To record from a specific slide, go to it, and then select **Record**.

4. Camera/mobile phone
You can film yourself keeping a lecture and add the slides to the recording later in the edit phase.

Things to keep in mind
1) Lighting

a. Make sure your eyes are lit
b. Make sure you are brighter than the background.
c. You can use a studio space, extra lamp or just position yourself close to a window, so that the light comes in front of you or from the side.

2) Sound
a. Make sure your audio is good
b. Use an external microphone or headset if possible
c. Make sure the space you are recording is suitable for audio (not too noisy)

6.5. Delivering the CU

6.5.1. Interactive learning activities

Adaptive learning, self-assessment tools, and peer collaboration are integral components of fostering active engagement among learners. Moodle's diverse range of interactive features allows teachers to tailor learning experiences to individual needs. Through adaptive learning algorithms, the platform can dynamically adjust curricular unit content based on learners' progress and performance, ensuring personalized learning pathways. Using tools such as H5P, it is possible to develop a dynamic learning environment, where static content can be alternated with dynamic content. This works by presenting theory, for example, reading a paper (static content), and then giving the students a task to practice what they've just learned (dynamic content). Self-assessment tools such as quizzes, polls, and surveys empower learners to gauge their understanding and progress, promoting reflective learning practices. These can be created using tools from Moodle or through external websites and interactive software. This way, a student can monitor their own evolution and knowledge, and gain extra motivation. Additionally, Moodle facilitates seamless peer collaboration through discussion forums, chats, wikis, and group projects, fostering a collaborative learning environment where students can exchange ideas and construct knowledge collectively.

6.5.2. Multimedia Integration

Incorporating multimedia elements such as video lectures, infographics, and visual aids enhances the accessibility and efficacy of curricular unit content. Moodle's multimedia integration capabilities enable teachers to deliver engaging and interactive learning materials. Video lectures provide dynamic explanations of complex concepts, catering to diverse learning preferences. Infographics and visual aids visually represent information, facilitating comprehension and retention. However, there are rules that should be considered when producing video lectures and other multimedia content. These videos should be short, with a maximum of 5-7 minutes, to ensure focus and engagement. There also shouldn't be an

excessive amount of this type of content, as it can be overbearing, it's always ideal to intercalate it with other types of content or tasks. Audio resources, such as podcasts, or audio books, can dynamize the learning experience, allowing students to explore new media formats, and gather knowledge in a more dynamic and exciting way. With Moodle, teachers can effortlessly embed multimedia content directly into curricular unit modules, ensuring seamless access for learners across various devices. This allows for a more dynamic CU and workflow, avoiding overly static curricular units, and promoting high motivation and participation from students.

6.5.3. Data-Drive Analysis

Utilizing the information provided by analytics facilitates informed decision-making and continuous improvement in CU (and curricular unit) delivery. Moodle's robust analytics capabilities enable teachers to gain insights into learner engagement, performance trends, and learning behaviours. By analysing data on CU completion rates, assessment scores, and participation levels, teachers and staff can identify areas of strength and areas for improvement, tailoring instructional strategies accordingly. Various types of analysis, including descriptive, diagnostic, predictive, and prescriptive analytics, allow to optimize curricular unit design, enhance learning outcomes, and foster student success effectively. Descriptive analytics involves summarizing and visualizing data to gain an understanding of past and current trends in learner engagement and performance. Moodle's reporting tools generate descriptive analytics reports on metrics such as curricular unit completion rates, time spent on curricular unit materials, and activity participation levels. Diagnostic analytics focuses on identifying the root causes of learning challenges and performance gaps among students. Moodle's diagnostic analytics features pinpoint specific areas where students may be struggling, such as low quiz scores or incomplete assignments. Predictive analytics tools use machine learning algorithms to analyse patterns in student behaviour and performance data, to predict which students may be at risk of academic underachievement or disengagement. Prescriptive analytics goes beyond predicting outcomes to provide actionable recommendations for improving teaching and learning practices. These features analyse data on learner performance, engagement, and learning preferences to generate personalized recommendations for teachers. These recommendations may include suggested modifications to curricular unit content, instructional strategies, or support interventions tailored to individual students' needs, ultimately enhancing the effectiveness of teaching, and learning experiences.

These learning analytics will allow professors and technicians to gain valuable insights regarding the outcomes of the master's degree, to improve it for further editions.

7. Guidelines for the use of AI for Teaching and Learning

The purpose of these guidelines is to ensure that artificial intelligence (AI) is used to support teaching and learning in a useful and reliable way. As a rule, AI and language models may be used to support teaching and studying. The use of AI should always be implemented in a responsible and open manner.

7.1. General guidelines

- As a rule, the use of AI is permitted on the ManagiDiTH programme, and its utilisation must always be disclosed.
- AI may be used to supplement and support teaching and learning activities, but it cannot be used to replace the teaching, guidance or other learning materials provided by teachers.
- Students should be informed of the principles and disadvantages of using AI. AI can be discussed, for example, in the early stages of studies, study-related guidance sessions, and thesis seminars, as well as in connection with methodological surfaces.
- Remember to always pay adequate attention to privacy issues, data protection concerns, and the terms of use of AI services. The use of AI may sometimes require the disclosure of personal information, such as your name or email address. Students and teachers should ensure that they only provide information they are prepared to share. Never process any confidential data, such as those related to the business operations of a working life partner, in an AI service.
- Sources must always be referenced, even if the text was produced with the help of an AI tool. For more information on how to reference your sources, see the ManagiDiTH referencing guidelines. AI cannot be used directly as an expert source, and the correctness of the sources used by the AI to produce the texts must be verified.
- Remember to always use AI ethically. Do not use AI in a derogatory manner, or in any way that violates any applicable laws, rules or regulations.
- Individual curricular units may deviate from these recommendations for a justified reason. In such cases, students must be clearly informed of the exceptions and their justifications.

7.2. Educational planning – AI-related considerations

1. When planning learning exercises and evaluations, teachers must ensure that the related studies cannot be completed with the help of an AI or language model alone. For example, learning exercises can be tightly integrated to the learning material at hand or to some other less-known case, applied example, or working life assignment. We recommend testing your learning exercises by entering them into a language model and checking whether it can produce an acceptable answer.

2. Your assignments should emphasise your students' ability to develop their personal understanding and competence: make, build, select, analyse, reflect.

3. You can ask your students to interpret images or create graphical presentations.

4. You can instruct your students to add personal examples to their analyses.

5. You can encourage your students to document their work and reflect on what they have learned throughout the learning process.

6. Teaching critical thinking is essential. It is important to emphasise that AI is not always right, nor is it able to take every factor affecting it into account in complex situations and circumstances.

7. Focus on increasing the visibility of individual competence. Teachers can utilise "explain in your own words" video exams, group exams, and on-campus sessions to allow students to demonstrate their competence.

8. Consider emphasising future-oriented perspectives in your assignments.

9. Remember to mandate the correct source referencing practices, in accordance with the referencing guidelines.

10. Teachers must remain aware of the rapid pace of development of AI technologies.

7.3. Referencing the use of AI

The use of AI must be clearly indicated in a text whenever it is utilised in the production or editing of any texts or images. Remember to also explain how it has been utilised, for example in reading information sources and analysing material.

When AI is used to edit the grammar and content of a text, this fact must be disclosed in the introduction to the text, for example in the following manner: "ChatGPT has been used to edit the grammar and content of this report."

You must also specify this at the end of your list of sources. Example:
"ChatGPT (or some other AI programme) has been used to modify the grammar of this text."

For more detailed instructions on how to reference the use of AI, see ManagiDiTH referencing guidelines.

7.4. AI-related fraud

The Master's programme follows the EU Ethical guidelines on the use of artificial intelligence (AI) and data in teaching and learning for educators. The misuse of AI is treated similarly to other forms of fraud. Any cases of fraud will be handled by the ManagiDiTH Programme Committee. If a student becomes guilty of AI-related fraud, their performance will be rejected. The teacher who noticed the fraud will notify the teacher responsible for the study unit and the director of the university unit. Fraud always results in the rejection of the performance and loss of the attempt. Reproducing AI-produced materials as one's own work is prohibited and will result in the rejection of the study performance. A performance can be deemed fraudulent if it is sufficiently likely that it was made by an AI, or the use of AI has not been disclosed or referenced correctly. A student who is deemed guilty of fraud can also be subjected to disciplinary action in the form of a written warning or a temporary suspension for up to one year.

8. Data protection

In the landscape of European digital education, ensuring the protection of personal data is paramount. With the rise of online learning platforms and the increasing reliance on digital technologies, maintaining robust data protection measures is essential to safeguard the privacy and security of learners' personal information. Since ManagiDiTH is a collaborative European Master's degree digital curricular unit, it is imperative to adhere to stringent data protection regulations and best practices to uphold the trust and confidence of students, teachers, and staff alike.

8.1. Compliance with GDPR

The General Data Protection Regulation (GDPR) sets forth comprehensive guidelines for the collection, processing, and storage of personal data within the European Union (EU). Educational institutions offering digital curricular units must ensure full compliance with GDPR requirements to protect the rights and privacy of students. This includes obtaining explicit consent for data processing, implementing appropriate security measures to prevent unauthorized access or disclosure, and adhering to principles of data minimization and purpose limitation.

8.2. Transparent Data Handling Practices

Transparency is key to building trust and accountability in data handling processes. Educational institutions must provide clear and accessible information to students regarding the collection, use, and sharing of their data. This entails transparent privacy policies, consent forms, and data processing notices that outline the purposes for which data is collected, the legal basis for processing, and the rights of individuals regarding their data.

8.3. Secure Data Storage and Transfer

Securing data storage and transmission channels is essential to prevent data breaches and unauthorized access. The ManagiDiTH master's degree will leverage secure, encrypted storage solutions and robust authentication mechanisms to protect sensitive student information. Additionally, data transfer protocols should adhere to best practices for encryption and data integrity to safeguard information exchanged between learners and the educational platform. The measures to protect data against unauthorized access, loss, or destruction may include:

- Using encryption and secure access controls.
- Conducting regular audits and practicing data minimization.
- Promptly reporting any data breaches to the relevant authorities and, when necessary, to users.

While providing educational services, transferring personal data might be needed with third parties, such as:

- accreditation bodies
- Software providers and other service partners

The third parties must be GDPR-compliant. All recipients need to be listed.

8.4. Anonymization and Pseudonymization

Wherever possible, personal data should be anonymized or pseudonymized to mitigate privacy risks and ensure compliance with data protection regulations. By removing or obfuscating identifying information from datasets, educational institutions can minimize the risk of re-identification and unauthorized access to sensitive data while still retaining valuable insights for educational research and analysis.

8.5. Continuous Monitoring and Compliance Audits

Maintaining a culture of continuous monitoring and compliance is essential to adapt to evolving data protection requirements and mitigate emerging risks. The ManagiDiTH partners will

conduct regular audits of their data protection practices, assess compliance with relevant regulations, and implement remedial measures as needed to address any identified gaps or vulnerabilities.

Further information might need to be collected from the data protection officer.

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