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MODULE B

Digital Infrastructures, Learning Management Systems, Instructional Design Models and Moodle E-support general requirements

TalTech, 2025

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Expected Outcomes

After completing the module, participants are expected to:

1. Undertand what are Digital Infrastructures and Learning Management Systems.
2. Gain knowledge of the various types of Instructional Design Models
3. Understand how Moodle courses are set up, arranged and put into practice in the e-learning environment
4. Gain knowledge of the various basic e course resources and e course activities.
5. Understand how Moodle settings work for the specific purposes of teachers and students.
6. Use general recommendations that are expressed in the form of specific components or settings in Moodle, based on experiences, case studies and best practices gathered from higher education institutions in Europe.

1. Introduction to Digital Infrastructure

1.1. Definition and Importance of Digital Infrastructure

Digital infrastructure consists of the physical and virtual technologies enabling the internet, telecommunications, and data management (networks, data centers, software).

It is critical for the digital economy, supporting everything from online transactions to education platforms.

Importance: Drives economic growth, facilitates education, and helps modernize industries.

Sources: KPMG, “The Importance of Digital Infrastructure in a Post-COVID World,” 2022 World Economic Forum, “Digital Infrastructure: The Backbone of a Digital Economy,” 2020

1.2. Overview of ICT Infrastructure Design

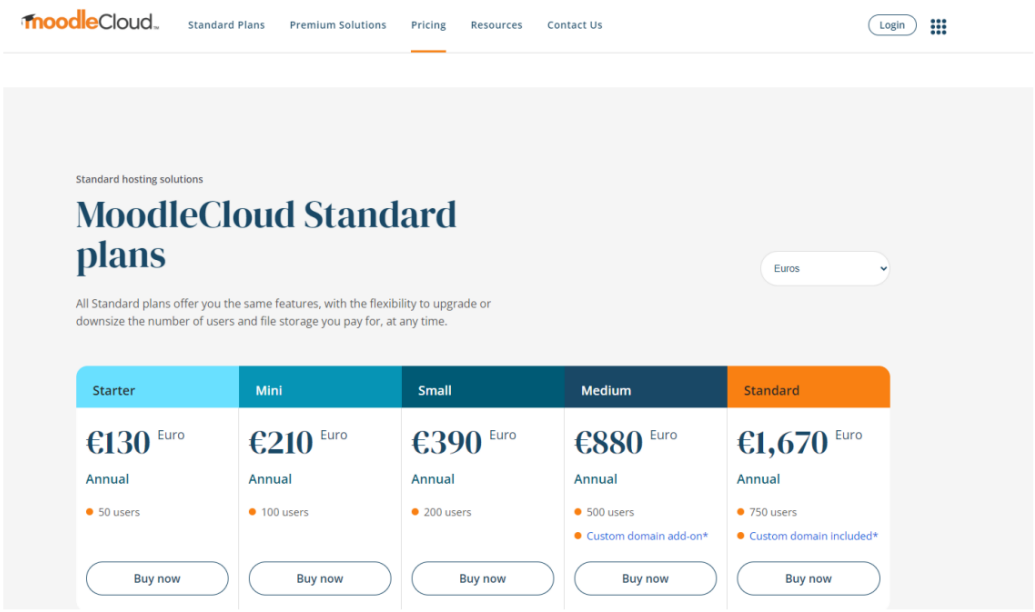
ICT infrastructure includes hardware (servers, routers) and software (network protocols, cloud services).

Layers of ICT: Networking, storage, security systems, and end-user devices.

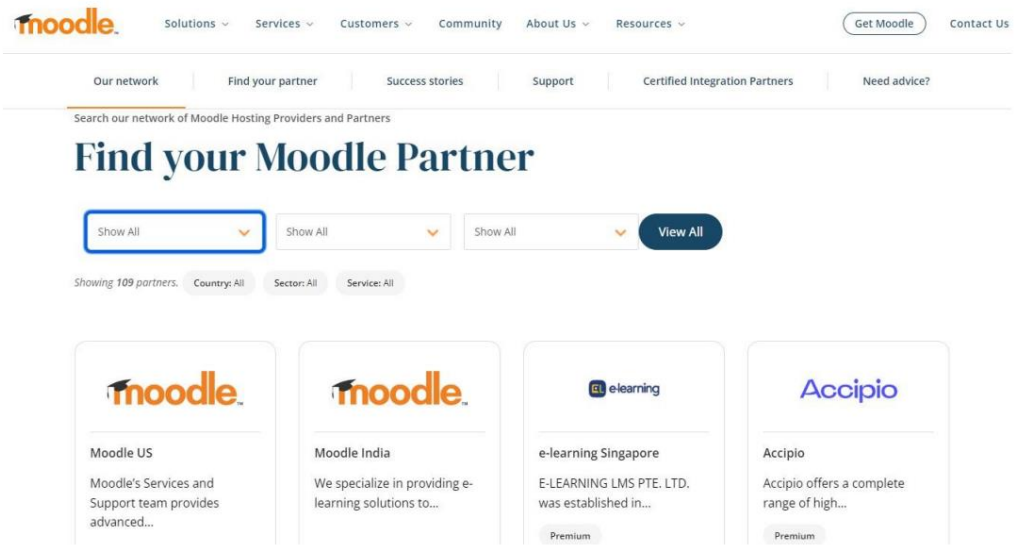
Its design is crucial for efficient digital operations and scalability, particularly in educational institutions.

Sources: Cisco Systems, “Guide to Building Scalable ICT Infrastructure,” 2021 IBM, “Designing Modern ICT Infrastructure,” 2022

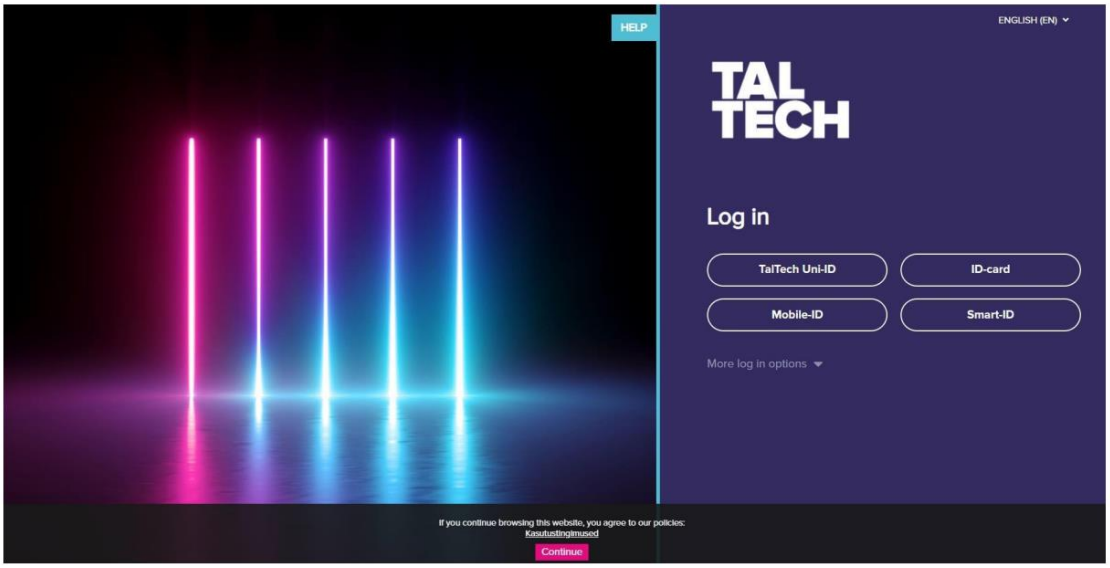
PUBLIC CLOUD SERVICE



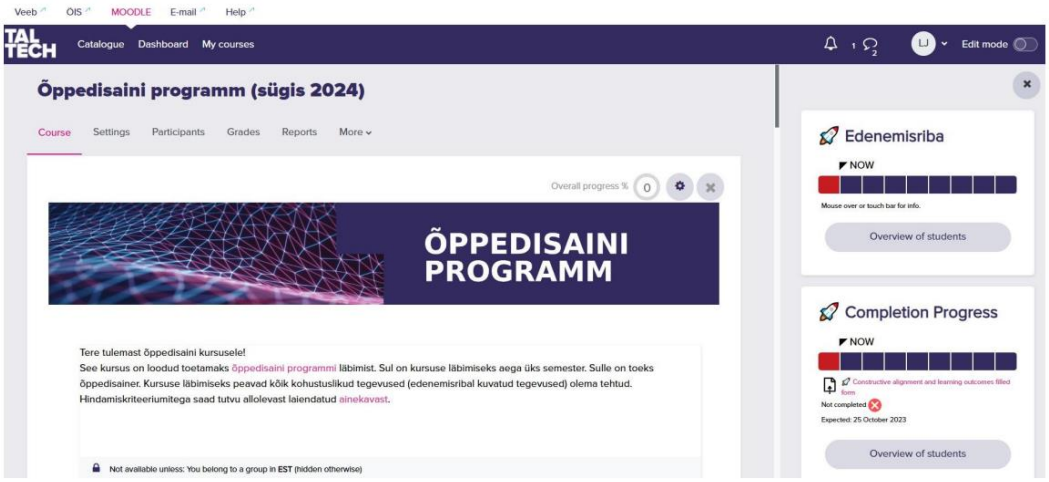
PARTNER HOSTED SOLUTION



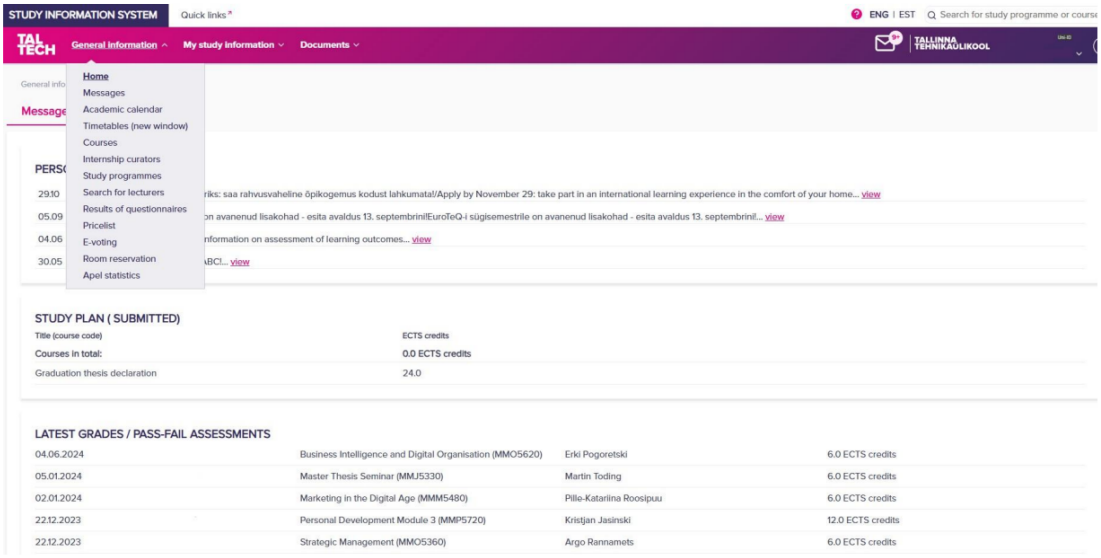
LEARNING MANAGEMENT SYSTEM(LMS) – PARTNER HOSTED



LEARNING MANAGEMENT SYSTEM(LMS) – PARTNER HOSTED



STUDY INFORMATION SYSTEM (SIS) – SELF HOSTED/ON PREMISES SOLUTION



1.3. Role of Digital Infrastructure in Education

Digital infrastructure enables online learning, resource sharing, and collaborative projects.

Expands access to education, particularly in remote areas or underserved populations.

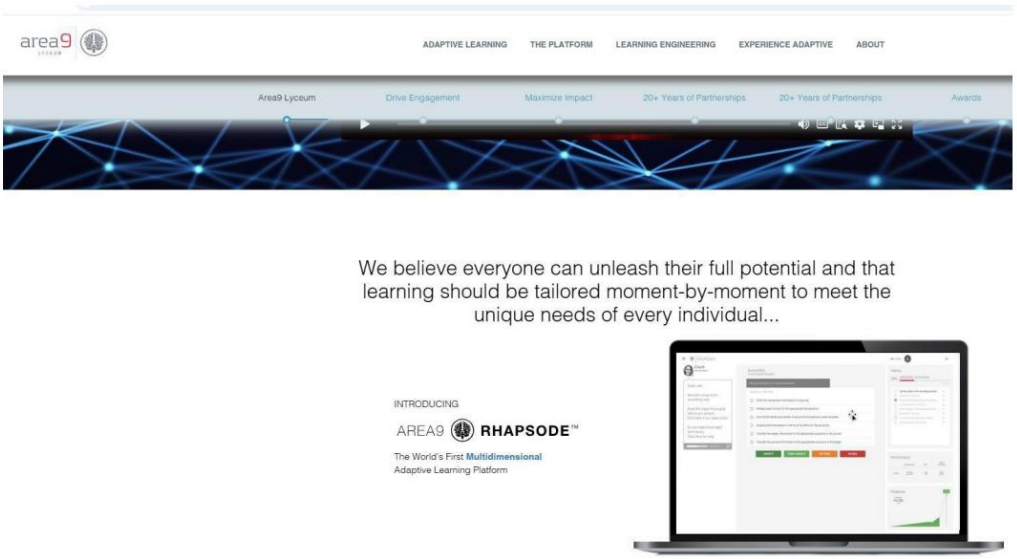
Supports personalized learning and real-time feedback.

Sources: UNESCO, “The Role of Digital Infrastructure in Modern Education,” 2021 BrookingsInstitution, “How Digital Infrastructure Transforms Learning,” 2020

2. Future Trends in Digital Infrastructure and LMS

2.1. Emerging technologies in Digital Infrastructure

PERSONALISED LEARNING EXAMPLE
ADAPTIVE LEARNING PLATFORM AREA 9



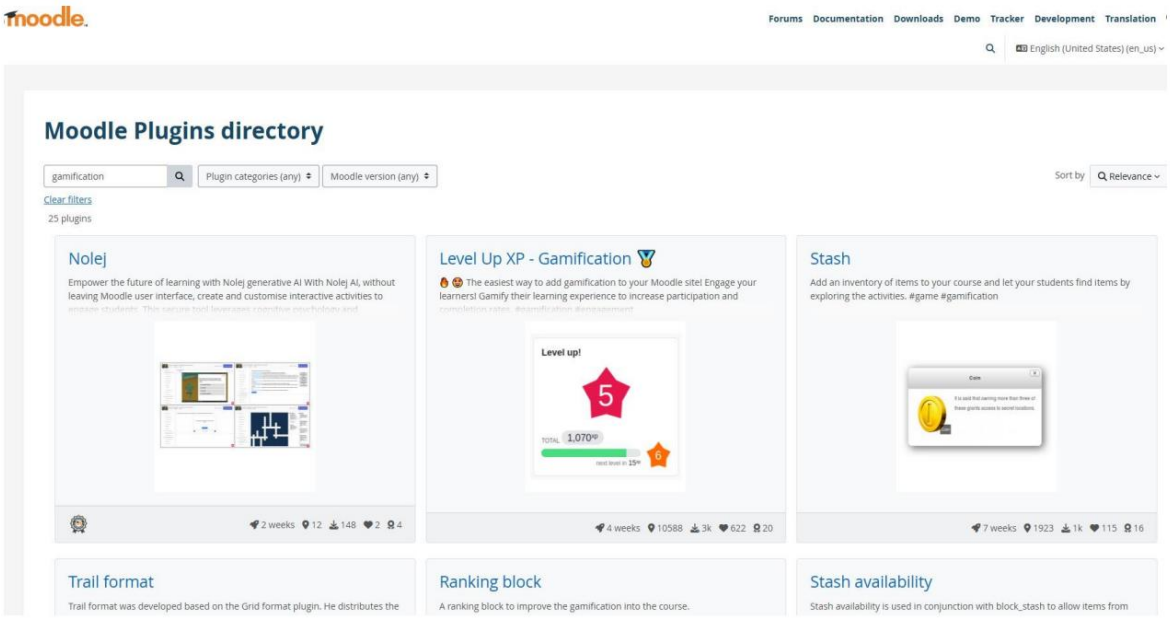
2.2. Advancements in LMS Features and Functionality

Modern LMS platforms offer more personalized learning experiences using AI, gamification, and mobile-first strategies.

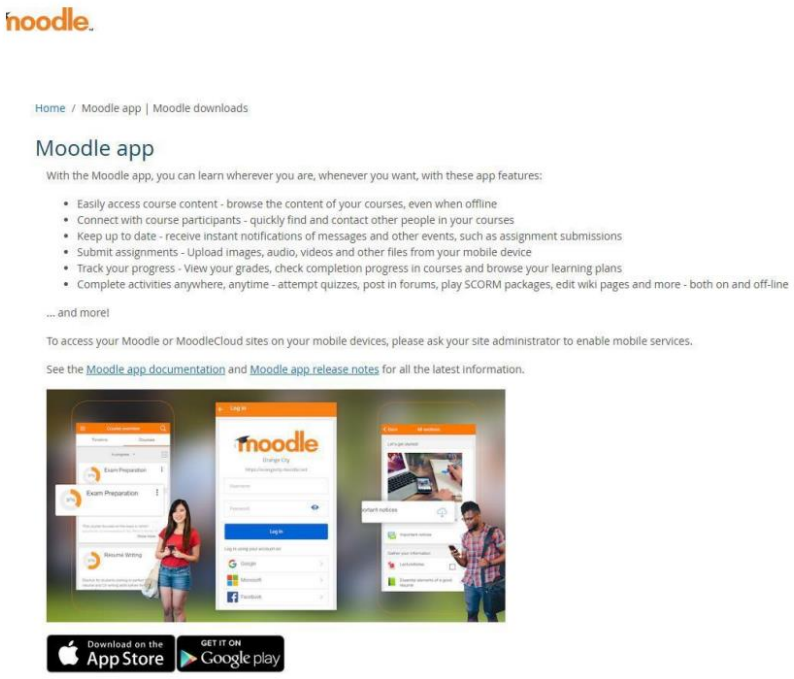
Features such as adaptive testing, peer collaboration, and performance analytics make LMS more interactive and efficient.

Sources: EDUCAUSE, “New Advancements in LMS Platforms,” 2022 Gartner, “The Evolution of LMS Features and What’s Next,” 2021

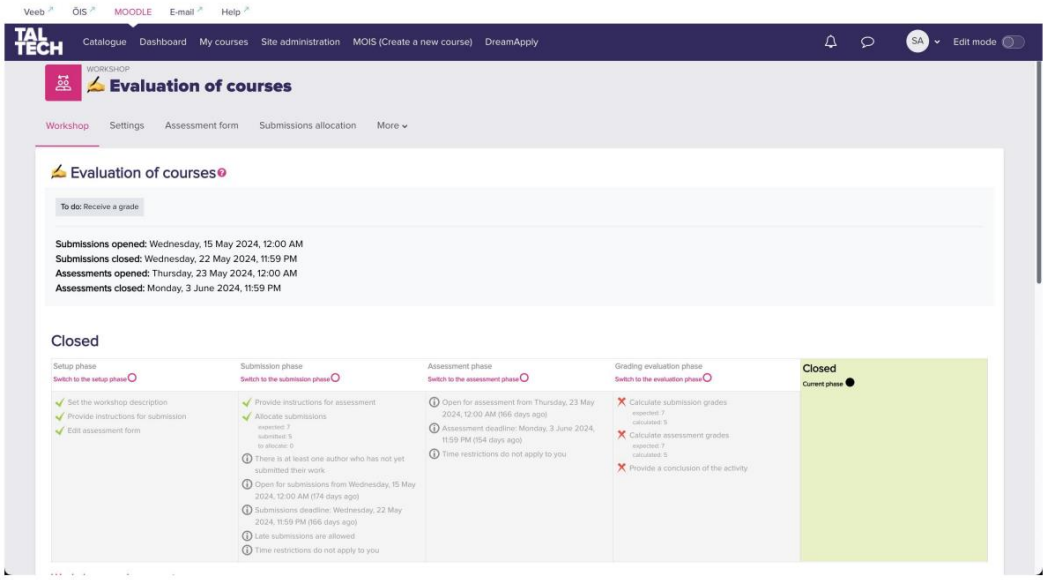
GAMIFICATION PLUGINS



MOODLE: RESPONSIVE AND AVAILABLE OFFLINE



PEER COLLABORATION
WORKSHOP PLUGIN IN MOODLE



2.3. Predictions for the Future of Educational Technology

Future trends in educational technology include the use of AI for personalized tutoring, VR for immersive learning, and blockchain for secure credentialing.

Hybrid learning models (online + in-person) will continue to expand, driven by technology.

Sources: MIT Technology Review, “The Future of Educational Technologies: A 2025 Outlook,” 2023 World Economic Forum, “The Role of Emerging Technologies in Education’s Future,” 2022

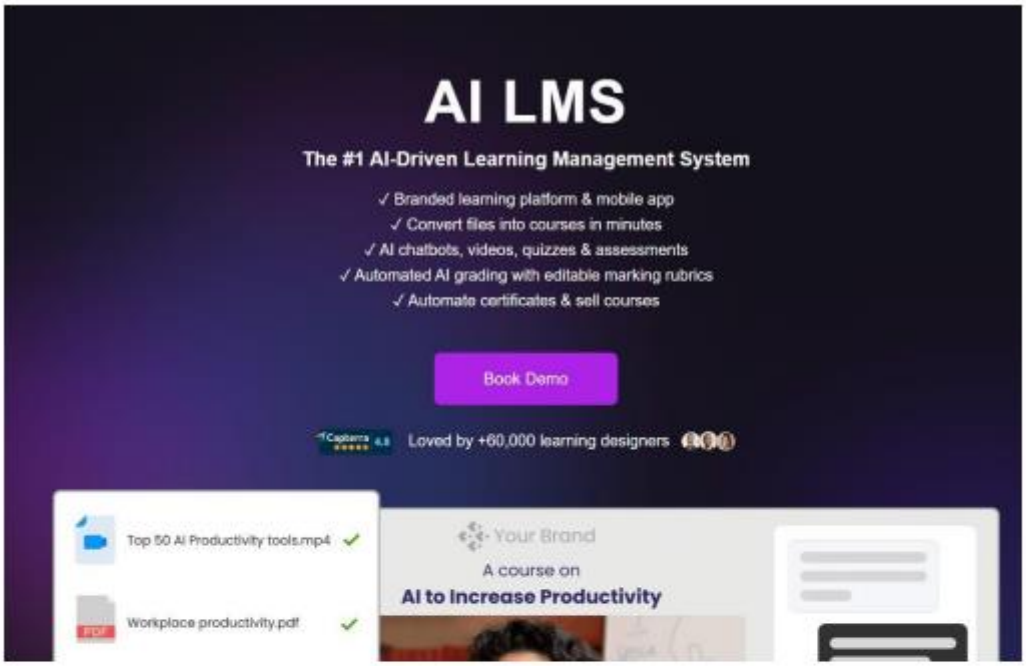
EDUCATIONAL TECHNOLOGY TRENDS

AI elements are being integrated into existing LMS and video broadcast platforms like Moodle, Canvas, Blackboard, Echo360, but only in parts.

No fully AI-powered LMS designed specifically for higher education. (Some platforms claim to cater to general education or corporate training.)

In addition to AI, key topics include learning analytics, hybrid learning, adaptive learning paths, and personalized learning.

Outdated concepts: Repositories, MOOCs, badges, forums?



Martin Dougiamas (founder of Moodle) keynote „What will education feel like in 2034?“ At Moodle Moot Global 2024 in Mexico

3. Understanding Learning Management System (LMS)

3.1. Introduction to LMS

A Learning Management System (LMS) is software that manages, delivers, and tracks educational content.

It supports blended learning environments and distance education, particularly in higher education and corporate training settings.

Sources: TechRepublic, “Introduction to LMS and its Importance in Modern Education,” 2022
UNESCO, “LMS Systems and Online Learning,” 2021

Evolution of LMS

The journey of LMSs reflects the rapid changes in technology and educational paradigms. From simple repositories of course content, they have developed into complex environments tailored to meet pedagogical needs and learner preferences, driven by constant technological innovation.

History: The inception of LMS can be traced back to the late 1990s, evolving from basic course management systems to multifaceted learning environments.

Technological Advances: Advancements such as mobile learning, cloud technology, and artificial intelligence have transformed LMS into more dynamic and personalized learning platforms.

Current LMS Landscape: Today’s LMS offer functionalities that include mobile accessibility, social learning features, and robust analytics for tracking learner progress.

Role of LMS in Modern Education

LMS have become indispensable in modern education by facilitating effective online learning environments. They empower educators to track student progress meticulously, implement timely feedback, and engage students through interactive elements, creating a vibrant digital learning community.

Facilitating Online Learning: LMS provide a platform for the delivery and management of online courses, enhancing accessibility to educational resources.

Tracking Progress: They enable educators to monitor student performance and participation metrics in real-time, facilitating timely interventions.

Engaging Students: Modern LMS incorporate gamification and social collaboration features that foster student engagement and community building.

3.2. Types of LMS and Their Features

Cloud-based LMS vs. Hosted LMS: Cloud-based systems offer more flexibility and scalability, while hosted solutions allow for more customization and control.

Key LMS features include course management, assessment tools, communication features, and analytics dashboards.

Sources: eLearning Industry, “Cloud-Based vs. Self-Hosted LMS: Which is Right for You?” 2022 Moodle, “Comparing LMS Types and Features,” 2021

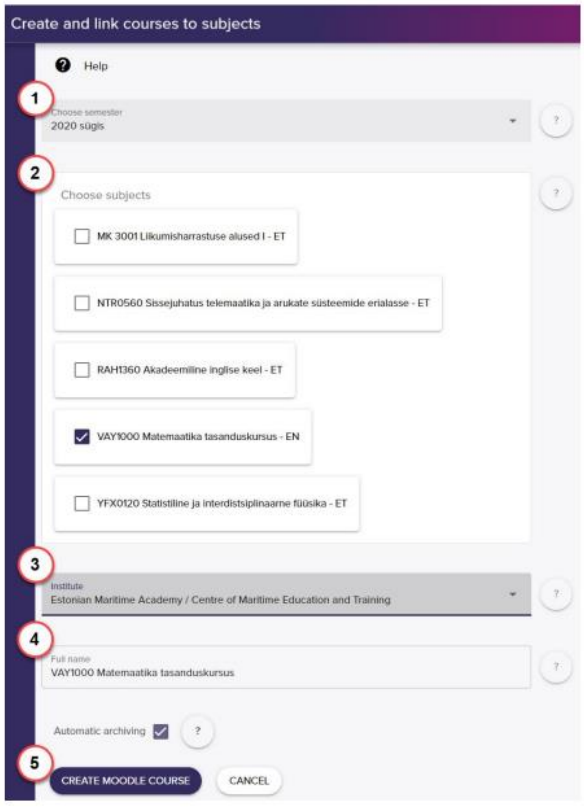
3.3. Architecture of LMS

The architecture of an LMS includes a front-end user interface for students and teachers, a back-end for administrators, and data storage systems.

Scalability: The architecture should handle growing numbers of users, courses, and assessments efficiently.

Sources: Microsoft Azure, “LMS Architecture: Building Scalable and Efficient Systems,” 2022 TechTarget, “Understanding the Technical Architecture of LMS Systems,” 2021

SIS AND LMS INTEGRATION PLUGIN (MOIS)



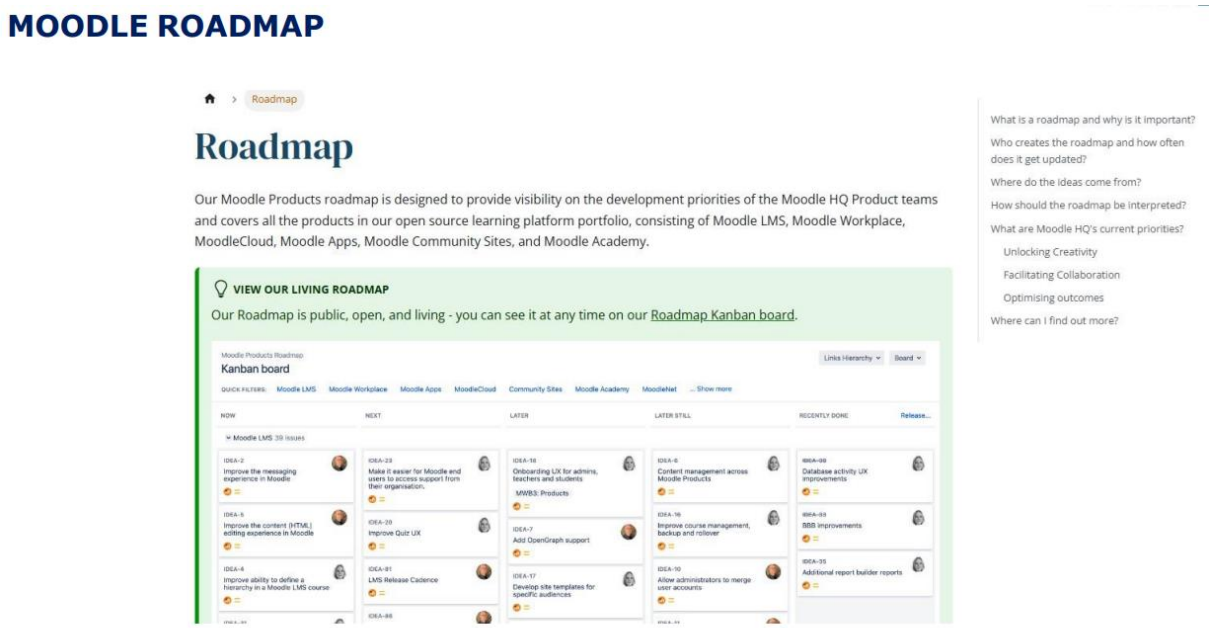
3.4. Management of LMS

Best practices in LMS management include regular content updates, user role assignments, and integrating the LMS with other software (such as SIS or CRM systems).

Monitoring user activity and performance data helps improve the learning experience.

Sources: Blackboard, “Managing an LMS: Best Practices for Admins,” 2022 Learning Solutions, “How to Effectively Manage Your LMS,” 2021

MOODLE ROADMAP



4. Challenges and Considerations in Digital Infrastructure and LMS Implementation

4.1. Addressing Technical Challenges in LMS and Digital Infrastructure

Common challenges include limited bandwidth, poor internet connectivity, and difficulty integrating various software solutions.

Solutions: Upgrading infrastructure, cloud-based storage, and regular updates to ensure stability.

Sources: TechTarget, "Overcoming Technical Challenges in LMS Implementation," 2022 eLearning Industry, "Challenges and Solutions in Building a Digital Learning Infrastructure," 2021

4.2. Ensuring User Adoption and Engagement

Strategies: Training programs for teachers and students, gamified learning experiences, and incentives for active participation.

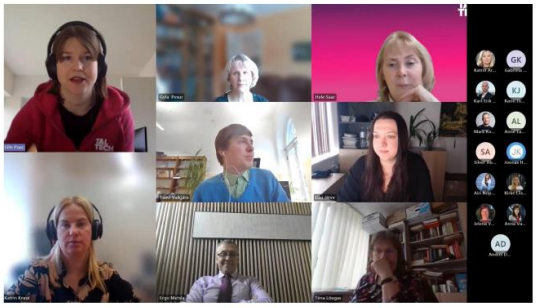
Engagement Tools: Quizzes, discussion forums, live webinars, and peer learning options.

Sources: Harvard Business Review, "Ensuring Successful User Adoption of LMS Systems," 2022 EDUCAUSE, "Engaging Students in Digital Learning Environments," 2021

LEARNING DESIGN PROGRAMME 2020 - PRESENT

- **Purpose:** The purpose of the programme is to improve the quality of teaching and learning and ensure greater flexibility of studies by improving the quality of e-support for courses.

- **Metrics:** 200 e-courses by 2026 to the advanced level following the e-learning standard (essentially a national standard for a high-quality e-course)



4.3. Security and Data Privacy Concerns

Security is a major concern in both digital infrastructure and LMS systems, particularly for protecting sensitive student data.

Best practices include data encryption, multi-factor authentication, and compliance with privacy laws (such as GDPR).

Sources: Educause, "Security and Privacy in Education Technologies," 2022 TechRepublic, "Data Privacy Concerns in LMS Systems," 2021

NOTE: It is important to appoint a coordinator for protection of personal data and state secrets, defence and security coordinator.

5. Instructional Design Models

5.1. Introduction

We will begin by defining instructional design before highlighting its crucial role in education. We'll also examine the evolution and significance of LMS, before addressing the practical integration of design principles into these systems.

Overview of Topics: Participants will delve into foundational concepts, applications, and challenges of instructional design and LMS.

Learning Objectives: By the end of the presentation, participants should be able to define key terms and identify best practices within instructional design and LMS

What is Instructional Design?

Instructional design is fundamentally about tailoring educational materials and experiences to optimize learner success. It involves understanding the needs of learners and structuring content in a way that fosters meaningful engagement and knowledge retention.

Definition

Instructional design is a systematic process of creating educational experiences that foster effective learning.

Principles

Key principles include learner-centered design, alignment with learning objectives, and adaptive instructional strategies.

Utilization in Education

Applied in diverse educational contexts, instructional design supports the development of engaging and effective learning experiences.

Key Components

Crucial components encompass analysis, design, development, implementation, and evaluation (often referred to as the ADDIE model).

Importance of Instructional Design in Education

The significance of instructional design in education cannot be overstated. By systematically analyzing learner needs and aligning content delivery accordingly, educators can significantly improve learning outcomes and cater to a diverse student population.

Enhancing Learning Outcomes

Effective instructional design strategies lead to measurable improvements in learner performance, motivation, and comprehension.

Addressing Diverse Learner Needs

Instructional design recognizes and accommodates varied learning styles, paces, and backgrounds to ensure inclusive educational experiences.

Instructional Materials Development

Systematic design ensures the development of high-quality materials that align with learning objectives and enhance delivery methods.

Integration of Instructional Design in LMS

The intersection of instructional design and LMS is pivotal for creating effective educational experiences. By leveraging design frameworks and placing emphasis on user experiences, educational institutions can offer engaging and adaptive learning environments that meet diverse learner needs.

Design Frameworks

Incorporating established instructional design frameworks ensures that course content is pedagogically sound and accessible.

Curriculum Development

Instructional design methodologies facilitate structured curriculum development aligned with learner needs and institutional learning objectives.

User Experience Enhancement

Emphasizing learner experience in design makes courses more engaging, intuitive, and accessible for all users.

Benefits of Effective Instructional Design in LMS

The advantages of sound instructional design in LMS are manifold. Not only does it enhance retention rates and allow for personalized learning experiences, but it also fosters a culture of continuous improvement through effective feedback mechanisms tailored to learner progress.

Improved Retention Rates

Courses designed with good instructional practices help increase knowledge retention and skill mastery among learners.

Adaptive Learning Paths

Utilizing analytics, effective instructional design enables personalized learning experiences tailored to individual progress and preferences.

Feedback Mechanisms

Incorporating structured feedback helps learners identify areas of improvement and enhances the overall learning experience.

Challenges in Instructional Design for LMS

While integrating instructional design within LMS presents numerous opportunities, several challenges must be addressed. Navigating technology limitations, overcoming resistance to change, and maintaining high standards of quality assurance are critical for successful implementation.

Technology Limitations: Inadequate technological infrastructure can hinder the implementation and effectiveness of advanced instructional design strategies.

Resistance to Change: Stakeholders, including educators and institutions, may face challenges in adopting new instructional methodologies and technologies.

Quality Assurance: Ensuring high-quality instructional materials and experiences requires rigorous evaluation and adherence to design standards.

5.2. Overview of Key Instructional Design Models

Key instructional design models such as ADDIE, SAM, and Dick and Carey offer structured approaches to course development. Each model has unique benefits that cater to specific design needs, enabling educators to select the best fit for their learning objectives.

ADDIE (Analyze, Design, Develop, Implement, and Evaluate) model is a widely adopted framework comprising five phases: Analysis, Design, Development, Implementation, and Evaluation.

SAM (Successive Approximation Model) model emphasizes iterative design, encouraging continuous feedback and revisions throughout the instructional design process.

Dick and Carey model focuses on systematic development in instructional design, particularly on goal analysis and instructional strategy alignment.

How Instructional Design Models Improve LMS Effectiveness

Employing instructional design models within LMS enhances their overall effectiveness. They provide structured learning pathways to ensure coherent progression, robust assessment strategies that engage learners, and an ongoing cycle of improvement through learner feedback.

Structured Learning Pathways: Instructional design models create clear and coherent learning pathways that guide learners through educational content.

Assessment Strategies: They facilitate the development of authentic assessments that measure learning outcomes effectively, promoting engagement and retention.

Continuous Improvement: Utilizing feedback from assessments allows for iterative improvements in course design and delivery, enhancing overall quality.

Setting the Stage for Practical Application

As we transition from theory to practice, exploring tangible case studies and real-world applications of instructional design within LMS will provide deeper insights. Interactive discussions will encourage you to share and reflect on your experiences, enriching our collective understanding.

Case Studies: Analyzing successful implementations of instructional design within LMS can provide valuable insights for future projects.

Real-World Applications: Understanding how organizations have effectively used LMS within instructional design practices can guide best practices.

Interactive Discussion: Engaging participants in dialogue about their experiences with instructional design in LMS fosters a collaborative learning environment.

5.3. ADDIE model

Overview of ADDIE Model

The ADDIE model is a systematic instructional design framework that encompasses five key phases: Analysis, Design, Development, Implementation, and Evaluation. This model is not only integral to creating effective educational programs but also ensures that all aspects of instruction are cohesive and aligned with learner needs. Its applicability across various educational formats solidifies its importance in contemporary instructional design.

Definition: ADDIE is an acronym that stands for Analysis, Design, Development, Implementation, and Evaluation, representing a systematic process for instructional design.

Phases: Each phase is critically interlinked, ensuring a cohesive development that addresses learners' needs throughout the instructional design process.

Importance: The ADDIE model provides a structured approach that enhances the quality and effectiveness of educational programs, ensuring learner satisfaction and achievement.

Context in Instructional Design: It serves as a universal framework adaptable across various educational formats, including e-learning environments and traditional classroom settings.

Analysis Phase Explained

The Analysis phase is fundamental in determining what the learners need to achieve. This includes identifying gaps in knowledge and understanding the characteristics of the target audience. By conducting thorough needs assessments and aligning your instructional goals, you build a solid foundation that facilitates a learner-centered approach throughout the remaining phases.

Purpose

The Analysis phase aims to define precise instructional goals and pinpoint the specific needs of learners in relation to the intended outcomes of the course.

Key Considerations

Understanding the organizational context and constraints, as well as the resources available, is critical for setting realistic learning objectives.

Identifying Learner Needs

Adopting various assessment tools such as surveys and focus groups to gather data on learner backgrounds, preferences, and prior knowledge.

Aligning Learning Goals

Ensuring that learning outcomes directly correspond to the identified needs, maintaining a clear focus on the desired competencies or behaviors post-learning.

Key Activities in Analysis

In the Analysis phase, several critical activities take place to gather relevant information about the learners and the learning environment. Conducting a comprehensive needs assessment and audience analysis will inform how you define your learning objectives and ultimately shape the course structure. This knowledge will prove invaluable as you move towards the design and development of instruction.

Needs Assessment

A crucial first step to gather data that informs the instructional design process, identifying what is required versus what is currently in practice.

Audience Analysis

Involves understanding the demographics, prior knowledge, and learning styles of the target learners to tailor content accordingly

Learning Context

Examine the environment and conditions under which learning will occur to optimize instructional strategies and technology choices.

Defining Objectives

Formulating measurable and achievable learning objectives that guide the development of instructional materials and assessments.

Design Phase Overview

Moving into the Design phase, we take the insights gained from the analysis to draft a comprehensive blueprint for the instructional experience. This stage focuses on creating engaging and relevant learner experiences while also incorporating feedback mechanisms to ensure improvements align with objectives. This systematic approach is vital for a successful deployment.

Purpose: The Design phase converts analysis data into a strategic outline that guides the development of content and instructional materials.

Overview of Design Steps: Includes outlining the course structure, determining the instructional methods, and evaluating technology tools to best support the learning objectives.

Focus on Learner Experiences: Designing experiences that are engaging and relevant to the learner's context fosters motivation and retention of information.

Incorporating Feedback: Continuous feedback loops from stakeholders and learners during this phase encourage iterative improvements to the instructional strategy.

Designing Effective Learning Objectives

When designing effective learning objectives, it is essential to adhere to SMART criteria, ensuring clarity and focus in what is to be achieved. Additionally, aligning objectives with assessments serves to reinforce the connection between teaching activities and expected outcomes. Utilizing Bloom's Taxonomy can help us create objectives that cater to various cognitive levels, enhancing the learning experience.

SMART Criteria

Objectives should be Specific, Measurable, Achievable, Relevant, and Time-bound to provide clarity and direction for both learners and educators.

Aligning Objectives with Assessments

Linking learning objectives clearly with corresponding assessments guarantees that evaluations measure what truly matters.

Cognitive Domain Considerations

Using Bloom's Taxonomy to articulate objectives at various levels of cognitive complexity, enabling differentiated learning experiences.

Example Objectives

By creating detailed examples of learning objectives, you can ensure coherence between what learners should know and what outcomes you expect.

Development Phase Details

During the Development phase, designs are brought to life through the creation of actual instructional materials. This process involves the transformation of conceptual plans into engaging content formats such as videos, interactive games, and written materials. Collaboration with subject matter experts is integral during this phase to bolster the quality and authority of the learning resources being produced.

Purpose: The Development phase focuses on transforming design documents into actual content, including multimedia elements that support diverse learning needs.

Transforming Designs into Materials: Moving from conceptual designs to actualized content involves producing varied formats, including text, video, and interactive modules.

Developing Multimedia: Incorporating audio, video, and graphics enhances the learning experience, catering to different learner preferences and engagement styles.

Collaborating with SMEs: Enlisting the expertise of subject matter experts ensures content accuracy and relevancy, vital for maintaining instructional integrity.

Creating Content and Materials

Creating content and materials in instructional design requires a careful consideration of the types of resources to produce. By utilizing technology and developing interactive materials, the instructional designer can enhance learner engagement significantly. Additionally, ensuring that all produced materials are accessible allows for a broader reach, fulfilling the educational needs of all learners.

Types of Content: Diverse content types include text, videos, simulations, and podcasts tailored to various learning preferences and contexts.

Utilizing Technology: Leveraging technology enhances the learning experience, integrating tools like Learning Management Systems (LMS), collaboration platforms, and interactive elements.

Interactive Materials: Creating interactive components, such as quizzes and gamified elements, boosts engagement and promotes active learning among participants.

Accessibility Considerations: Ensuring that all content adheres to accessibility guidelines helps create inclusive learning environments for all learners, including those with disabilities.

Implementation Phase Insights

The Implementation phase marks the transition from theory into practice. Logistical planning, trainer readiness, and optimizing the learning environment are pivotal in this phase. Additionally, ensuring that both facilitators and the learning context are appropriately set up is key to fostering effective engagement and learning outcomes.

Purpose: The Implementation phase is where instructional programs are put into practice, delivering the designed learning experiences to the target audience.

Pre-implementation Planning: Includes logistical considerations such as equipment, scheduling, learner registration, and ensuring the execution of the planned instruction.

Trainer Preparation: Providing adequate training for facilitators ensures they are equipped to deliver content effectively, fostering a supportive learning environment.

Learning Environment Setup: Setting up classrooms or virtual environments promotes conducive learning, encapsulating the necessary resources and support for learners.

Strategies for Successful Implementation

To ensure a successful implementation of instructional programs, several strategies can be adopted. Staff training and well-structured communication plans are fundamental; they promote clarity among all stakeholders. Additionally, leveraging LMS capabilities for tracking and engagement can yield valuable insights into learner interactions.

Staff Training

Providing comprehensive training sessions for all staff involved ensures a unified understanding and effective delivery of the program's objectives.

Communication Plans

Establishing clear communication channels helps in disseminating information timely and managing expectations for both trainers and learners.

Use of LMS Features

Utilizing features such as forums, tracking, and assessments within the LMS enhances the learning experience and fosters community support.

Monitoring Learner Engagement

Implementing strategies to track learner participation and feedback allows for mid-course corrections and adjustments for improvement.

Evaluation Phase Importance

The Evaluation phase holds significant importance as it helps determine the success of the instructional design process. By evaluating both formative and summative aspects, we gain insight into how well the learning objectives were met, what feedback was received, and what adjustments can be made for future implementations. Continuous improvement is the cornerstone of effective instructional design.

Formative vs. Summative Evaluation: Understanding the differences between formative evaluation, which occurs during the design process, and summative evaluation, which assesses the final outcomes of learning.

Tools for Gathering Feedback: Utilization of surveys, interviews, and observative assessments can provide actionable insights to improve instructional effectiveness.

Assessing Learning Outcomes: Evaluating the effectiveness of programs in meeting defined learning objectives is crucial for determining overall success and areas for development.

Continuous Improvement: The evaluation phase leads to a cycle of continuous improvement, enabling instructional designers to refine and enhance future offerings.

Tools for Evaluation in LMS

Utilizing tools embedded within Learning Management Systems enhances both the evaluation process and learner feedback mechanisms. By employing LMS analytics, surveys, and varied

assessment methods, instructional designers can gather pertinent data to inform future iterations of their courses. This data-driven approach is essential for making continuous improvements in instructional design.

LMS Analytics

Leveraging built-in analytics allows for tracking learner progress and engagement, providing critical data that informs instructional adjustments.

Surveys and Feedback Tools

Employing survey tools within LMS platforms to solicit direct feedback from learners on their experiences and content relevancy.

Assessment Methods

Utilizing diverse assessment strategies such as quizzes, assignments, and peer evaluations to gauge learner understanding and progress effectively.

Data-driven Decisions

Using data gathered from evaluations to make informed decisions that enhance the instructional design process and improve learning outcomes.

5.4. SAM model

Introduction to SAM Model

The SAM Model—or the Successive Approximation Model—is pivotal in evolving the instructional design landscape. Unlike rigid methodologies, SAM emphasizes an iterative process that embraces continuous feedback and collaboration among stakeholders. Its origins highlight a necessity for adapting to quickly changing educational demands, making it essential for modern learning environments.

Definition of SAM

The Successive Approximation Model (SAM) is a dynamic and iterative instructional design framework that promotes ongoing refinement and user feedback throughout the design process, enhancing educational experiences.

Origins and Development

SAM emerged as a response to the limitations of traditional instructional design models, emphasizing collaboration and incremental improvement, making it highly relevant in fast-paced educational environments.

Importance in Instructional Design

By prioritizing learner needs and adaptive methodologies, SAM fosters more personalized learning experiences and is suited for varied delivery contexts, including online and blended learning environments.

SAM vs. ADDIE: Key Differences

In this comparative analysis, we can see that the SAM model espouses adaptability and iterative flexibility, making it particularly beneficial in environments where learner needs evolve over time. In contrast, the ADDIE model is more suited for projects that have a fixed and well-defined trajectory. Understanding these key differences enables instructional designers to choose the most appropriate model for their specific context.

Comparative Analysis

While both models aim to enhance learning outcomes, SAM's flexibility allows for ongoing modifications based on learner feedback versus ADDIE's more linear, sequential structure.

SAM Flexibility

The SAM model embodies adaptability, allowing designers to cycle through phases multiple times, focusing on adjusting strategies to better meet learner needs and emerging insights

ADDIE Linear Process

In contrast, ADDIE follows a strict linear sequence which can hinder responsiveness to learner needs and situational changes, making it less agile in nature.

Situational Context of Use

The application of SAM is best suited for projects characterized by evolving requirements, whereas ADDIE may excel in projects with clearly defined objectives from the outset.

Development Phase

In the development phase, the actual curriculum is brought to life through content creation and technology integration. This stage is pivotal as it invites the design concepts into tangible interactions and learning materials. Prototyping and transition to feedback cycles reinforce the importance of adaptability, paving the way for effective revisions that align the educational experience with real learner needs.

Content Development: During this phase, content is crafted based on the design blueprint, ensuring it is pedagogically sound and suitable for the target audience's learning needs.

Technology Integration: Selecting and integrating appropriate technologies is vital for enhancing learner engagement and providing necessary tools to facilitate interaction and collaboration.

Prototyping Solutions: Creating prototypes of key educational materials allows for initial testing of concepts, enabling adjustments prior to full-scale implementation.

Transition to Feedback Cycles: Moving into feedback cycles ensures that the development is agile, allowing for ongoing refinements based on pilot testing and initial learner responses.

The Iterative Design Process

The iterative design process is at the heart of the SAM model, championing continuous improvement and active learner engagement. This approach underscores the importance of incorporating regular feedback, enabling instructional designers to make real-time changes that reflect learner insights and experiences. By embracing iteration, we initiate cycles of growth that ultimately lead to more effective learning outcomes.

Overview of Iteration: Iteration involves repeatedly refining products—designers revisit stages based on feedback and lessons learned to enhance learning effectiveness and user engagement.

Continuous Feedback: Feedback mechanisms are integral to the SAM model; these allow stakeholders and learners to contribute to ongoing adjustments in learning activities, ensuring relevance and effectiveness.

Application of Flexibility: Designers are encouraged to be flexible and responsive to learning context, thus empowering them to pivot directions quickly based on real-time data or feedback from users.

Improvement Cycles: By implementing systematic, iterative cycles, instructional materials evolve progressively, fostering a culture of continuous learning and development within educational organizations.

Benefits of SAM in LMS

The integration of the SAM model within Learning Management Systems (LMS) unlocks numerous benefits. From heightened learner engagement through tailored feedback to the capability for rapid development, SAM empowers educators and instructional designers to navigate the complexities of modern education effectively. Importantly, its adaptability and scalability ensure that educational programs remain relevant, aligned with both learner needs and technological advancements.

Enhanced Engagement

SAM fosters greater engagement through iterative design that prioritizes learner feedback, thus creating tailored content and activities that resonate with students.

Rapid Development

By utilizing an iterative approach, SAM allows for quick adjustments and rapid prototyping, enabling learning materials to be developed and delivered efficiently.

Adaptiveness

The model naturally adapts to changes in learner needs and technological advancements, ensuring that learning experiences remain relevant and impactful over time.

Scalability and Flexibility in Learning Environments

SAM offers scalable solutions that can be implemented across various contexts, allowing educators to customize learning experiences to suit diverse groups efficiently

Challenges and Considerations

Despite its numerous advantages, the SAM model encounters challenges that must be navigated carefully. Resistance to change from established practices can hinder adoption, highlighting the necessity of strong change management and training initiatives. Furthermore, effective resource allocation is critical to guarantee that all components of the design process are adequately supported, ensuring successful implementations.

Common Challenges

Implementing SAM may face obstacles such as traditional mindsets within educational institutions that prefer established methods over innovative, flexible models.

Resistance to Change

Stakeholders may resist adopting SAM due to fears of the unknown or a lack of understanding about its value, necessitating effective change management strategies.

Training Needs

As SAM introduces new methodologies, comprehensive training programs become essential to equip instructional designers and educators with the necessary skills.

Resource Management

Effective implementation of SAM requires diligent resource management to ensure all aspects of instructional design are adequately supported and maintained.

Preparation Phase

The preparation phase acts as a foundational element in the SAM model, emphasizing the necessity of thorough groundwork. By meticulously setting objectives and analyzing the audience, instructional designers position themselves for success. Additionally, assessing resources and delineating team roles enhances communication and project clarity, which is essential for navigating the subsequent design and development phases effectively.

Objectives Setting: Clearly defined objectives guide the instructional design process, ensuring alignment between learning goals and desired outcomes for both learners and stakeholders.

Audience Analysis: A comprehensive understanding of the target audience, including their prior knowledge and learning preferences, informs the design process and helps tailor content effectively.

Resource Assessment: Evaluating available resources, including technology, materials, and time constraints, is crucial for establishing feasible and realistic project scopes.

Team Roles and Responsibilities: Clarifying roles within the instructional design team strengthens collaboration and accountability, allowing for efficient workflow and project management throughout the SAM process.

Design Phase

The design phase is where the conceptualization of the learning experience really takes shape. By crafting a detailed blueprint and aligning all components, instructional designers lay the groundwork for effective education. Careful attention to learning activities and assessment methods ensures that every piece contributes towards fulfilling the objectives, creating a cohesive and engaging learning journey for participants.

Blueprint Creation: The design phase revolves around creating a comprehensive blueprint that outlines the structure of the learning experience, stratified by objectives and outcomes.

Learning Activities Design: It's essential to design engaging and meaningful activities that not only meet objectives but also consider diversity among learners to foster inclusivity.

Content Alignment: Ensuring that all content aligns with established objectives strengthens coherence and ensures learners can achieve desired outcomes efficiently.

Assessment Strategies: Developing effective assessment strategies allows for the measurement of knowledge acquisition and provides critical feedback on the learning process.

Tips for Practitioners

To maximize the effectiveness of the SAM model, practitioners should adhere to several best practices. By fostering communication and feedback, teams can create a more collaborative environment that benefits both designers and learners. Avoiding common pitfalls is essential; thus, practitioners must remain vigilant about alignment and engagement. Lastly, staying informed about future trends in instructional design ensures that SAM continues to evolve in tandem with educational advancements.

Best Practices: Emphasizing the importance of clear communication, regular check-ins, and maintaining a learner-centric focus throughout the design process enhances SAM's effectiveness.

Recommendations for Success: Encouraging a culture of feedback among team members and learners ensures ongoing refinement and encourages a growth mindset within the design team.

Common Pitfalls: Being cognizant of potential pitfalls such as inadequate stakeholder involvement or misalignment of objectives is vital for successful implementation.

Future Trends in Instructional Design: Keeping abreast of emerging technologies and pedagogical trends will assist practitioners in aligning SAM implementation strategies with the evolving educational landscape.

Implementing SAM with Moodle

Moodle stands as a leading LMS that is well-suited for integrating the SAM model. The platform's customizability allows instructional designers to harmonize course structures with the SAM phases, effectively embedding the iterative approach within the online learning environment. By exploring real-world case examples of SAM in Moodle, we can identify the effective strategies that enhance learner engagement and outcomes.

Moodle Overview

Moodle is a versatile LMS that provides a myriad of features and tools ideal for implementing SAM, including course management, assessment tools, and collaborative opportunities.

Practical Steps for Integration

Integrating SAM within Moodle involves aligning course structures with SAM phases, facilitating feedback loops and iterative processes seamlessly within the platform.

Customization Opportunities

Moodle's flexibility allows instructional designers to tailor learning paths and resources effectively, enhancing learner engagement and satisfaction.

Case Examples

Numerous successful implementations of SAM within Moodle demonstrate its capacity to boost learner engagement, performance, and satisfaction in diverse learning contexts.

5.5. Dick and Carey model

The Dick and Carey Systems Approach Model

The Dick and Carey Systems Approach Model represents a thorough framework for designing effective instructional programs by mapping a logical sequence of nine interconnected steps. By beginning with an emphasis on identifying clear instructional goals, designers can ensure they systematically cater to learner characteristics and contexts. This model's strength lies in its structured process, which allows for continuous feedback and improvement. Let's delve into each of the nine critical steps that comprise this model.

Overview of the Model: The Dick and Carey model is a systematic instructional design framework that emphasizes the interconnections between various components of the instructional process, ensuring that each element aligns with the intended learning outcomes.

Systematic Approach: Emphasizing careful analysis and structured planning, this model promotes rigorous evaluation at each step, tailoring instruction precisely to learner needs and context.

Nine Key Steps

1. Identify instructional goals

2. Conduct instructional analysis

3. Analyze learners and contexts

4. Develop performance objectives

5. Develop assessment instruments

6. Develop instructional strategy

7. Develop and select instructional materials

8. Design and conduct formative evaluation

9. Revise instruction based on evaluation results

Comparing ADDIE, SAM, and Dick and Carey Models

In examining the differences between the ADDIE, Successive Approximation Model (SAM), and the Dick and Carey System, we can delineate their distinct characteristics. The ADDIE model is advantageous for projects requiring a stepwise approach, while SAM excels in agile environments where frequent adjustments are necessary. The key focus on systematic analysis within the Dick and Carey model is particularly beneficial in complex instructional scenarios. By understanding these variations, instructional designers can make informed choices that align their design processes with project needs.

Approach: ADDIE follows a linear, phases-based approach, SAM utilizes an iterative, flexible design process, while Dick and Carey adopts a systematic and analytical method that integrates evaluation throughout.

Phases/Steps: Key phases in ADDIE encompass Analysis, Design, Development, Implementation, and Evaluation; SAM emphasizes iterative cycles of design, review, and redesign; Dick and Carey outlines nine distinct steps integrated into a cohesive system.

Flexibility: ADDIE maintains a structured framework allowing for sequential execution; SAM provides high adaptability allowing for quick revisions; Dick and Carey focuses on a prescribed sequence which may become less flexible in dynamic environments.

Best Suited For: ADDIE is suitable for projects with defined requirements; SAM is ideal for projects necessitating rapid changes; Dick and Carey works best in complex instructional settings where systematic analysis is critical.

Key Focus: ADDIE focuses on the overall instructional process; SAM emphasizes ongoing feedback and adjustments; Dick and Carey prioritizes detailed instructional analysis and formative evaluation.

5.6. Merrill’s Principles of Instruction

Introduction to David Merrill

David Merrill's contributions to the field of instructional design have been influential in shaping effective educational practices. His background combines cognitive theory with practical applications, stressing the importance of task-centered learning and learner engagement. Today, we will uncover his five key principles and their impact on education.

Biography

David Merrill has been a pivotal figure in the field of instructional design for decades, earning recognition for his innovative approaches and theories.

Contributions to Instructional Design

Merrill’s work emphasizes practical methodologies that bridge theory and practice, fostering effective learning experiences across diverse contexts.

Theoretical Foundation

Merrill’s principles are grounded in cognitive theory and constructivist learning, advocating for a learner-centered approach that prioritizes active engagement and experiential learning.

Overview of the Five Principles

The five principles of Merrill serve as a foundation for effective instructional design. They underscore the importance of active learner engagement and are applicable across various educational settings. In our next slides, we will explore each principle in detail.

Outline of Principles

Merrill’s five principles serve as a guiding framework for designing effective learning experiences that foster deep understanding and skill retention.

Significance in Education

These principles are crucial as they adapt to various learning environments, ensuring consistent and impactful educational outcomes.

Brief Description of Each Principle

Each principle emphasizes a specific aspect of learning, combining to create a holistic learning experience that integrates knowledge, skills, and application.

Principle 1: Task-Centered Learning

Task-centered learning is the first principle outlined by Merrill, focusing on authentic tasks that resonate with learners' experiences. This approach helps students see the relevance of their education while actively participating in their learning journey.

Definition

Task-centered learning emphasizes the use of authentic tasks that learners encounter in the real-world, promoting relevance and practical skill development.

Importance in Learning

By contextualizing learning within realistic scenarios, students are more engaged and able to transfer knowledge to new situations.

Examples of Task-Centered Approaches

Examples include project-based learning, simulations, and case studies, which encourage active participation and critical thinking.

Principle 2: Activation of Prior Knowledge

The activation of prior knowledge is critical for effective learning. By connecting new information to existing knowledge, learners are better positioned to understand and retain new concepts. In our discussion, we will explore strategies for facilitating this activation.

Concept Explanation

Activating prior knowledge means engaging learners in reflecting on what they already know, facilitating a deeper connection to new material.

Cognitive Theory Basis

This approach is rooted in cognitive science, which posits that understanding is enhanced when linked to information already stored in memory.

Techniques to Activate Prior Knowledge

Common techniques include brainstorming, discussion prompts, and mind-mapping, all aimed at linking new concepts to familiar ones.

Principle 3: Demonstration of Skills

Demonstration of skills is essential in ensuring learners understand how to apply what they've learned. By observing experts, learners can internalize best practices and develop their own competencies in a supportive environment.

Role of Demonstration: Demonstration acts as a critical component, providing learners with concrete examples of how to perform tasks and apply knowledge effectively.

Effective Methods: Methods include live demonstrations, video tutorials, and expert panels, all of which allow learners to observe competence before engaging in practice themselves.

Real-World Examples: In fields such as healthcare or engineering, demonstrations may involve skilled practitioners performing procedures, allowing students to learn through observation.

Principle 4: Application of Skills

The application of skills is vital for achieving proficiency in any area of study. This principle emphasizes the need for learners to practice what they've learned in a structured manner, supported by various assessment techniques that provide feedback for ongoing improvement.

Practice Applications

Application of skills involves providing learners with opportunities to practice in both simulated and real contexts, reinforcing skill acquisition.

Importance of Practice

Regular practice solidifies understanding and aids in mastery over time, fostering confidence and competence in learners.

Assessment Strategies

Assessment during practice can include formative evaluation, peer reviews, and self-assessment tools, facilitating insights on performance and improvements.

Principle 5: Integration into Real-World Activities

Integration of skills into real-world activities not only enhances learning but also prepares students for relevant experiences they will face post-education. This principle is centered on making education applicable and meaningful.

Contextual Learning: Integrating learning into real-world activities helps learners see the relevance of their education and motivates them to apply skills beyond the classroom.

Relevance to Learners: When learning connects to real-life scenarios or challenges, students are more likely to engage and retain that knowledge over time.

Case Studies of Integration: Practical examples include internships, community projects, and service-learning experiences that provide invaluable hands-on experience while contributing to society.

Applying Merrill's Principles in LMS

Learning Management Systems are versatile platforms that can effectively integrate Merrill's principles into their architecture, offering engaging and supportive environments for learners. We will discuss specific strategies for leveraging these platforms.

Learning Management Systems: LMS platforms provide the ideal environment to embed Merrill's principles, enabling structured, interactive learning experiences.

Integration Strategies: Utilizing features like discussion boards, quizzes, and multimedia resources helps in applying principles effectively within the LMS framework.

Enhancing User Engagement: Interactive elements and real-time feedback within LMS can significantly boost student motivation and performance.

Benefits and Outcomes

The application of Merrill's principles yields substantial benefits, enhancing not only educational performance but also overall student satisfaction. These findings underscore the powerful impact of effective instructional design.

Educational Impact

Employing Merrill's principles leads to improved comprehension and retention, as learners can connect knowledge to practical applications.

Student Engagement

Engaged students are more motivated and inclined to participate, resulting in a richer learning experience and better outcomes.

Longitudinal Benefits

Schools utilizing these principles report sustained academic performance, alongside increases in student satisfaction and motivation over time.

Potential Challenges

Despite the powerful advantages of Merrill's principles, there are challenges in applying them effectively. We will explore these hurdles and offer insights into strategies that institutions can adopt to facilitate successful implementation.

Implementation Barriers

Challenges such as limited resources, training gaps, and institutional inertia can hinder the adoption of these principles in educational settings.

Resistance to Change

Faculty and administrative resistance may arise due to comfort with traditional teaching methods, which can be minimized through comprehensive training.

Solutions and Strategies

Targeted professional development, continuous support, and demonstrable case studies can help overcome resistance and barriers.

5.7. Gagne's Nine Events of Instruction

Introduction to Robert Gagne

Robert Gagne, a prominent figure in the field of educational psychology, significantly shaped instructional design principles. His theory emphasizes the importance of understanding how individuals learn and how instructional strategies can cater to those processes. The Nine Events of Instruction represent Gagne's endeavor to create a structured process that enhances learning engagement and effectiveness.

Background

Robert Gagne was an educational psychologist with a focus on effective instructional design and cognitive processes.

Key Contributions

He developed the Conditions of Learning theory and the Nine Events of Instruction which serve as a guideline for creating effective learning experiences.

Educational Philosophy

Gagne advocated for structured, systematic, and learner-centered approaches to education that facilitate cognitive development and skill acquisition.

Overview of the Nine Events

Gagne's Nine Events of Instruction provide a comprehensive framework to enhance instructional design. These events outline step-by-step processes educators can use to prepare, engage, and support learners. The purpose of this model is to create effective and meaningful learning experiences that promote retention and application.

Definition: The nine events serve as a systematic approach to instructional design that guides educators in facilitating effective learning environments.

Purpose: Designed to ensure learners are adequately prepared, engaged, and supported throughout the learning process.

Significance in Instructional Design: These events provide a structured roadmap for creating curricula that enhance learning retention and transfer of knowledge.

Event 1: Gain Attention

The first event, 'Gain Attention,' is fundamental as it sets the tone for learning. By employing a mixture of captivating strategies, such as engaging multimedia or interesting anecdotes, educators can create an environment ripe for curiosity and participation. Establishing this engagement early ensures that learners remain focused on the objective.

Engagement Techniques

Utilizing varying multimedia, thought-provoking questions, and unexpected scenarios to draw learners in.

Importance

Captivating attention is vital as it establishes a foundation for successful learning by stimulating interest.

Real-world Examples

Incorporating elements such as quizzes, videos, and case studies during the introduction phase to pique student interest.

Event 2: Inform Learners of Objectives

In the second event, 'Inform Learners of Objectives,' educators articulate clear learning goals that outline what students should grasp by the end of the lesson. Clarity in objectives is essential as it gives learners a target to aim for, increasing motivation and focus. Communicating these goals effectively, through various formats, can significantly enhance learner commitment.

Clarity of Learning Goals: Articulating clear, measurable objectives helps learners understand what they are expected to achieve.

Expected Outcomes: Setting precise expectations enables learners to align their efforts and focus on essential content.

Communication Methods: Utilizing various techniques, such as verbal communication, written outlines, or visual aids to present objectives to learners.

Event 3: Stimulate Recall of Prior Learning

The third event, 'Stimulate Recall of Prior Learning,' emphasizes the importance of connecting new knowledge to previously learned content. Encouraging learners to draw upon their existing frameworks not only aids in comprehension but also creates a richer and more integrated understanding of the subject matter. Techniques like discussions or recall exercises can effectively facilitate this event.

Connecting New Content: Facilitating connections between what learners already know and new information helps to create a cohesive understanding.

Techniques for Recall: Using probing questions, concept maps, or brainstorming sessions to activate prior knowledge before introducing new content.

Relevance to Current Learning: Highlighting real-life applications of past knowledge fosters a richer learning experience and deeper understanding.

Event 4: Present the Content

In the fourth event, 'Present the Content,' the focus shifts to how educators materialize the learning experience through effective delivery methods. By diversifying delivery techniques and aligning information logically, educators can cater to a wide array of learning preferences. Integrating visual aids is crucial, as it not only makes content more engaging but also strengthens understanding and retention.

Content Delivery Methods: Utilizing diverse methods such as lectures, demonstrations, and interactive tutorials to cater to different learning styles.

Structuring Information: Organizing content logically to build knowledge progressively and prevent cognitive overload.

Visual Aids and Examples: Enhancing presentations with diagrams, videos, and real-world scenarios to reinforce learning and engagement.

Event 5: Provide Learning Guidance

The fifth event, 'Provide Learning Guidance,' is crucial in equipping learners with the necessary tools and resources to navigate their educational path effectively. By offering a range of supportive materials and initiating collaborative activities, educators promote exploration and deeper engagement with the content. Instructional methods that adapt to the learners' needs can further facilitate confidence and competence.

Supportive Resources: Offering learners access to supplementary materials and references enhances the learning experience and retention.

Instructional Methods: Employing scaffolding techniques to provide varying levels of support as learners gain confidence and skills.

Strategies for Learner Engagement: Incorporating collaborative activities or problem-solving scenarios that allow learners to engage with content dynamically.

Event 6: Elicit Performance

The sixth event, 'Elicit Performance,' is the phase where learners apply their newly acquired knowledge. Creating numerous opportunities for practice through active learning techniques not only reinforces what they've learned but also fosters collaboration and shared knowledge. Applying such knowledge to real-world scenarios helps to solidify understanding and facilitates long-term retention.

Practice Opportunities

Providing ample opportunities for learners to practice their skills in various contexts and scenarios encourages mastery.

Active Learning Techniques

Utilizing discussion groups, peer teaching, and role-playing exercises fosters deeper understanding through collaboration.

Application of Knowledge

Encouraging learners to apply what they've learned in real-life situations solidifies their understanding and prepares them for future challenges.

Event 7: Provide Feedback

In the seventh event, 'Provide Feedback,' learners receive constructive insights to assess their performance. It's essential to establish a culture that values diversity in feedback types and encourages students to embrace critique for growth. Effective feedback not only helps learners identify their strengths and weaknesses but also motivates them to improve their skills.

Importance of Feedback

Effective feedback is vital in guiding improvement and helping learners to identify areas for growth.

Types of Feedback

Diverse forms of feedback may include formative, summative, peer review, and self-assessment, each serving distinct purposes.

Implementing Constructive Criticism

Encouraging a culture of openness to critique helps learners develop resilience and adaptability in their learning journeys.

Event 8: Assess Performance

The eighth event, 'Assess Performance,' emphasizes the importance of robust evaluation methods. By employing various assessment strategies, educators can gain holistic insights into learner performance. Tools like rubrics or digital platforms simplify this process, making it more transparent and manageable, while clear criteria ensure students understand the measures of their success.

Assessment Methods: Utilizing various evaluation strategies, including tests, practical applications, and projects to obtain a holistic view of learner performance.

Tools for Evaluation: Incorporating rubrics, rating scales, and digital assessment platforms to streamline the evaluation process.

Criteria for Success: Establishing clear and attainable assessment criteria ensures learners understand how their work will be evaluated.

Event 9: Enhance Retention and Transfer

In the ninth event, 'Enhance Retention and Transfer,' the focus is on ensuring learners not only retain the content but can also apply it in various contexts. Techniques like spaced repetition and active context application can greatly facilitate this process. Ultimately, the goal is to promote a culture of continuous engagement with the material to encourage effective long-term learning.

Techniques for Retention

Utilizing strategies such as spaced repetition, summarization, and mnemonic devices to promote long-term memory retention.

Encouraging Application

Creating scenarios where learners practice new skills in diverse contexts to solidify their knowledge transferability.

Strategies for Long-term Learning

Promoting ongoing review and integration of knowledge to ensure skills remain relevant and applicable over time.

Implementing Gagne’s Events in an LMS

This paragraph discusses 'Implementing Gagne’s Events in an LMS.' The integration of Gagne’s principles within a Learning Management System allows educators to leverage technology to enhance instructional effectiveness. By utilizing LMS features and embedding Gagne’s events into digital courses, institutions can create robust and coherent e-learning experiences.

LMS Features: Identifying different LMS capabilities, such as progress tracking, assessments, and dynamic content delivery, which support Gagne's events.

Integration of Gagne’s Principles: Using the nine events as a framework for structuring courses within an LMS to enhance user experience and educational quality.

Practical Examples: Highlighting case studies of institutions that have successfully incorporated Gagne's events into their e-learning environments.

5.8. Bloom’s Taxonomy

Introduction to Bloom’s Taxonomy

Bloom's Taxonomy was created in the 1950s by Benjamin Bloom, aiming to classify educational goals. Its significance lies in providing a structured framework for teachers to design instruction that fosters higher-order thinking skills. In this session, we will explore its evolution, relevance, and application in curriculum design.

Historical Context

Developed by Benjamin Bloom and his colleagues in the 1950s, this taxonomy categorizes educational objectives into levels of complexity and specificity.

Importance in Education

Bloom’s Taxonomy serves as a foundational framework in educational settings, guiding educators in creating measurable learning objectives and assessments.

Framework for Learning

It supports educators in structuring curriculum and learning activities that facilitate deeper understanding and skill acquisition.

The Cognitive Domain Levels

At the heart of Bloom's Taxonomy is the cognitive domain, structured as a pyramid to represent the ascending levels of cognitive skills. Each level requires increasingly sophisticated thinking, starting from basic recall of facts to the creation of new ideas and concepts. Understanding this structure is crucial for effective instructional design.

The Cognitive Domain: The taxonomy comprises six levels, organized from lower-order thinking skills to higher-order thinking skills, providing a progressive path for learners.

The Six Levels: The levels include: Remembering, Understanding, Applying, Analyzing, Evaluating, and Creating, each building upon the previous one.

Pyramid Structure: This structure reflects the increasing complexity and depth of cognitive processes as one ascends the pyramid.

Level 1: Remembering

The first level, Remembering, focuses on the ability to recall previously learned information. It's essential for laying the groundwork for deeper cognitive skills. Key verbs associated with

this level help in formulating specific learning activities, such as quizzes and flashcards, aimed at improving memory retention.

Definition: Remembering involves the recall of facts and basic concepts, serving as the foundation for higher-level thinking.

Key Verbs: Key action verbs include list, define, identify, and memorize which encourage retrieval of information from memory.

Instructional Strategies: Effective strategies include using mnemonic devices, flashcards, and quizzes to enhance memory retention.

Example Activities: Examples include multiple-choice quizzes, definitions, and rote memorization exercises that reinforce recall of knowledge.

Level 2: Understanding

The second level, Understanding, involves the ability to go beyond mere memorization and comprehend material. Educators can employ various strategies such as group discussions and concept mapping to help learners articulate their understanding, using key verbs to assess their comprehension.

Definition

Understanding is the ability to explain ideas or concepts, demonstrating comprehension beyond rote memory.

Key Verbs

Key action verbs include explain, summarize, paraphrase, and classify which aid in assessing comprehension.

Instructional Strategies

Strategies include group discussions, teaching others, and concept mapping which facilitate deeper comprehension.

Example Activities

Examples of activities include summarizing a text, creating concept maps, or discussing topics in pairs or groups.

Level 3: Applying

At the Applying level, learners demonstrate their capability to use knowledge in practical contexts. This level bridges theory and practice, laying a foundation for real-world application. Instructional strategies such as simulations or project-based learning can effectively engage students, encouraging them to apply what they've learned in meaningful ways.

Definition: Applying refers to the ability to use learned information in new situations, showcasing practical execution of knowledge.

Key Verbs: Key action verbs include implement, demonstrate, and operate, crucial for tasks that require practical application of concepts.

Instructional Strategies: Instructional methods can include simulations, role-playing, and real-world problem-solving exercises to enhance application skills.

Example Activities: Examples include completing projects, conducting experiments, or practicing skills in real-life situations that need application of knowledge.

Level 4: Analyzing

The fourth level, Analyzing, encourages students to dissect information, identify relationships, and engage in critical thinking. By using strategies like debates or case studies, educators can provide learners with opportunities to practice these skills, employing key verbs that prompt deeper examination of concepts.

Definition: Analyzing involves breaking down information into parts to understand its structure and relationships—engaging critical thinking skills.

Key Verbs: Key action verbs include analyze, compare, contrast, and categorize, which assess the ability to dissect and understand information.

Instructional Strategies: Effective strategies include case studies, debates, and data analysis that facilitate critical examination of ideas and concepts.

Example Activities: Examples include comparing theories, analyzing case studies, or identifying trends in data, enhancing critical thinking abilities.

Level 5: Evaluating

Evaluating requires learners to exercise judgment and form opinions based on established criteria. This level promotes reasoning and justification, especially through peer reviews and reflective practices. Instructors can create activities that challenge students to validate their findings or assess peer contributions.

Definition: Evaluating is about making judgments based on criteria and standards, synthesizing knowledge to form reasoned opinions.

Key Verbs: Key action verbs include evaluate, justify, defend, and critique, focusing on critical judgment and reasoning abilities.

Instructional Strategies: Formative assessments, peer reviews, and reflective journals are effective in nurturing critical evaluation skills among students.

Example Activities: Examples include critiques, peer assessments, and justification of choices or arguments, encouraging students to articulate their judgments.

Level 6: Creating

The apex of Bloom's Taxonomy, creating, encourages originality and innovation. At this final level, students collaborate and propose new concepts or solutions. Instructional strategies such as project-based learning or design thinking can vastly enhance creativity in educational contexts.

Definition: Creating entails generating new ideas, products, or perspectives, representing the pinnacle of cognitive processes in the taxonomy.

Key Verbs: Key action verbs include create, construct, design, and develop, essential for fostering original thinking and innovation.

Instructional Strategies: Project-based learning, design thinking methodologies, and collaborative group projects are critical in facilitating creativity and innovation.

Example Activities: Examples include designing a prototype, developing a project plan, or composing a piece of art, allowing students to showcase originality.

Designing LMS Activities Using Bloom's Taxonomy

Designing activities in Learning Management Systems (LMS) aligned with Bloom's Taxonomy helps educators ensure that all levels of cognitive learning are addressed. By integrating technology, we can advance our instructional design and amplify engagement, facilitating a more dynamic learning experience.

Importance of Alignment: Aligning LMS activities with Bloom's Taxonomy ensures that educational objectives are met, and cognitive levels are addressed effectively.

Examples of Activities: Examples range from quizzes for remembering to collaborative projects for creating, ensuring varied engagement across cognitive levels.

Technology Integration: Leveraging technology within LMS platforms can enhance interactive learning, assess student progress, and provide instant feedback.

Assessment Strategies

Implementing robust assessment strategies is essential for monitoring student progress and enhancing learning outcomes. Understanding the balance between formative and summative assessments allows educators to tailor feedback effectively, ensuring learners remain engaged with the material throughout their educational journey.

Formative vs. Summative Assessment: Understanding the distinction enables educators to incorporate both assessment types to monitor and enhance student learning throughout the course.

Designing Assessments: Effective assessments should reflect the taxonomy levels, using appropriate methods to measure students' cognitive skills accurately.

Feedback Mechanisms: Providing timely, constructive feedback is critical for learner growth, enabling students to reflect and refine their understanding and performance.

Aligning Objectives with Bloom’s Levels

Aligning learning objectives with the levels of Bloom's Taxonomy ensures that educational goals are not only well-defined but also measurable. Practical tips will guide you in formulating objectives that resonate with educational standards while fostering higher-order thinking among students.

Creating Learning Objectives

Craft objectives based on the six levels of Bloom’s Taxonomy to ensure clarity and measurable outcomes, guiding both instruction and assessment.

Examples

For each cognitive level, use targeted examples to refine objectives, such as 'Analyze the data' or 'Create a proposal.'

Practical Tips

Utilize action verbs from Bloom's framework to construct clear and specific objectives that enhance clarity and expectations for learners.

5.9. Kirkpatrick’s Model

Introduction to Donald Kirkpatrick

Donald Kirkpatrick is a prominent figure in the field of training evaluation, known primarily for developing a comprehensive framework that assesses the effectiveness of training programs. In the 1950s, Kirkpatrick's insights became foundational for educators and organizations striving to maximize the impact of vocational training. His model is structured around four distinct yet interconnected levels: Reaction, Learning, Behavior, and Results. Understanding this model allows organizations to navigate the complexities of evaluating training initiatives effectively.

Background

Donald Kirkpatrick was an educator and training expert who developed a framework known as the Kirkpatrick Model, designed to evaluate training effectiveness.

Contribution to Training Evaluation

His work in the 1950s laid the groundwork for a systematic approach to examine vocational training programs, particularly in corporate environments.

Overview of the Model

Kirkpatrick introduced a four-level model to evaluate training, focusing first on participant reactions, followed by learning outcomes, behavioral changes, and overall results.

Overview of the Four Levels

Kirkpatrick's Model comprises four levels that collectively provide a nuanced evaluation of training effectiveness. Starting from immediate participant feedback, to measurable knowledge gain, observable behavior changes, and ultimately, the holistic impact on organizational outcomes, each level adds critical depth to the evaluation process. This structured approach not only enhances measurement accuracy but also aligns training objectives with broader organizational goals, making it indispensable across various training contexts.

Introduction to Levels: The model consists of four levels, each addressing a unique aspect of training evaluation, forming a comprehensive assessment framework.

Significance: Each level serves a distinct purpose, helping organizations to not only measure reaction but also align learning outcomes with organizational goals.

Application in Evaluation: The model facilitates a systematic evaluation process from participant feedback to quantifiable organizational impact, making it versatile for various training contexts.

Level 1: Reaction

At the heart of Kirkpatrick's model lies Level 1: Reaction, which captures participants' immediate perceptions post-training. Gathering this feedback is crucial, as it often sets the tone for participants' subsequent engagement with training content. Common methods to measure reactions include structured surveys and informal discussions, which can unveil insights into the training's appeal and effectiveness. By understanding attendees' experiences, organizations can adapt future training efforts to enhance satisfaction and engagement.

Definition

This level measures participants' immediate responses to training, focusing on their feelings and perceptions about the content and delivery.

Importance of Reaction

Understanding reaction is crucial as it often shapes participants' motivation and engagement in future training activities.

Methods to Measure

Common methods include surveys, feedback forms, and informal discussions that capture subjective experiences and perceptions.

Examples of Feedback

Feedback might include assessments of trainer effectiveness, content relevance, and overall satisfaction with the learning experience.

Level 2: Learning

Level 2: Learning assesses the actual knowledge and skills participants acquire as a result of training. This level is crucial because it determines whether the training has fulfilled its educational objectives. Organizations often utilize pre-and post-training assessments to measure knowledge gain effectively. Techniques for measurement can range from quizzes and case studies to simulations, with an emphasis on aligning these assessments to clearly defined learning objectives. By doing so, it becomes possible to ascertain if the training successfully imparted the intended knowledge and skills.

Definition

This level evaluates what participants have learned as a result of the training, focusing on knowledge and skill acquisition.

Assessment of Knowledge Gain

Evaluating learning can be conducted through pre-and post-training assessments, skills demonstrations, and knowledge checks.

Techniques for Measurement

Techniques include quizzes, case studies, simulations, and other methods that enable demonstrable evidence of learning.

Application in Learning Objectives

Aligning measurement techniques with predefined learning objectives ensures clarity in evaluating whether training met its goals.

Level 3: Behavior

Level 3: Behavior assesses whether participants are translating their learning into tangible changes in their work environment. This transition is critical as it speaks to the effectiveness of the training program. Observing actual behavior change can be measured through performance appraisals and 360-degree feedback from peers and supervisors. For instance, imagine a training program designed to boost sales techniques; if follow-up evaluations show an increase in sales performance, it signifies a successful transfer of learning to behavior. Measuring these changes elucidates the real-world impact of training initiatives.

Definition: This level evaluates whether participants apply their learned skills and knowledge in practical environments, indicating a transfer of learning to the workplace.

Connection to Workplace Changes: Measuring behavior involves observing actual changes on the job that stem from training, highlighting the value of the learning experience.

Measuring Transfer of Learning: Methods include performance appraisals, 360-degree feedback, and direct observations in workplace settings to assess behavioral changes.

Real-life Scenarios and Examples: For example, a training program might enhance sales techniques, with subsequent evaluations showing increased sales performance as a behavioral indicator.

Level 4: Results

The final level, Level 4: Results, delves into the ultimate outcomes of training initiatives and their relevance to organizational success. It's here that we assess the broader impact training has on metrics such as productivity, employee retention, customer satisfaction, and overall profitability. Organizations often lean on key performance indicators (KPIs) to establish a link between training efforts and desired business outcomes. Case studies serve as powerful illustrations of how effectively implemented training programs can yield significant organizational improvements and growth metrics.

Definition: This pinnacle level evaluates the ultimate impact of training on organizational goals and performance metrics.

Impact on Organization: Results may include improved productivity, reduced turnover, increased customer satisfaction, and enhanced profitability.

Metrics for Evaluation: Organizations often use key performance indicators (KPIs) to assess the correlation between training and business outcomes.

Case Study Examples: Real-world examples can illustrate how effective training programs directly correlated with organizational success and growth metrics.

Applying the Model in LMS

Integrating Kirkpatrick's Model within Learning Management Systems (LMS) presents a transformative opportunity to streamline evaluation processes as part of training delivery. By embedding assessment features such as quizzes and surveys directly into the learning platform, organizations can gather immediate feedback and measure learning outcomes in real-time. Moreover, robust reporting capabilities allow for the generation of comprehensive reports that synthesize evaluation data across all four levels. This powerful combination of tools not only enhances training effectiveness but also provides organizations with valuable insights into learners' progress.

Integration into Learning Management Systems: Adapting Kirkpatrick's Model within LMS enables seamless evaluation processes directly alongside content delivery.

Assessment Features: LMS platforms can incorporate quizzes, surveys, and feedback mechanisms as part of the training delivery, allowing real-time evaluation.

Reporting Capabilities: These systems can generate automated reports that aggregate data across all four levels, making it easier to analyze and reflect on training effectiveness

Tools for Tracking Progress: Tracking progress through the LMS helps organizations monitor learners' advancement across all evaluation levels efficiently.

Tools for Evaluation in Moodle

In the context of Moodle, a widely used Learning Management System, there are numerous tools available for comprehensive training evaluation. Moodle's functionality includes customizable quizzes and surveys that allow for precise measurement of participant reactions

and retention of knowledge. Additionally, performance tracking features enable educators to monitor learner progress over time against established objectives. The analytics within Moodle also provide invaluable insights, facilitating informed decisions to improve both learner experience and training effectiveness.

Evaluation Tools

Moodle offers a variety of tools for effective evaluation, including customizable quizzes, surveys, and observational checklists.

Quizzes and Surveys

These features enable precise measurement of participant reactions and knowledge retention through tailored questions and feedback options.

Performance Tracking

Built-in analytics allow educators to track learner performance over time and assess progress against the established objectives and benchmarks.

Analytics in Moodle

Moodle's rich analytics capabilities provide actionable data insights to enhance the learning experience and inform future training decisions.

Benefits of Using Kirkpatrick's Model

Implementing Kirkpatrick's Model provides multifaceted benefits that significantly enhance training evaluation frameworks. One of the standout advantages is the holistic approach to assessment, ensuring that organizations address various elements of training effectiveness concurrently. This thorough evaluation leads to improved training effectiveness, as insights gained can refine programs for greater engagement and retention. Furthermore, stakeholders are deeply involved in the evaluation process, which fosters transparency and supports collaborative efforts toward constant transformation and improvement of training initiatives.

Holistic Evaluation

The model ensures a comprehensive evaluation approach by addressing multiple facets of training effectiveness concurrently.

Improved Training Effectiveness

Using Kirkpatrick's Model helps refine training programs, leading to enhanced engagement, satisfaction, and retention of knowledge.

Enhanced Learning Outcomes

The focus on measurable results empowers organizations to achieve better learning outcomes aligned with strategic objectives.

Stakeholder Engagement

Involving stakeholders in the evaluation process increases transparency and allows for collaborative improvements in training initiatives.

Challenges and Solutions

While Kirkpatrick's Model offers a robust framework for evaluating training, organizations often encounter challenges in its implementation. Common hurdles include difficulties in measuring intangible results and ensuring active participant engagement throughout the evaluation process. However, these obstacles can be addressed through clear communication and the inclusion of all stakeholders in the evaluation efforts. Leveraging technology and data analytics can simplify tracking of training outcomes effectively. Additionally, securing stakeholder buy-in is crucial for fostering a culture of collaboration and commitment to the evaluation process.

Common Challenges

Organizations often encounter difficulties in measuring intangible results and ensuring participant engagement in the evaluation process.

Overcoming Barriers

Implementing practical strategies, such as clear communication and involvement of all stakeholders, can mitigate these challenges effectively.

Practical Solutions

Leveraging technology and data analytics can facilitate easier measurement and tracking of training outcomes across all levels.

Importance of Stakeholder Buy-in

Building consensus and securing involvement from key stakeholders ensures commitment and support for evaluation initiatives.

Best Practices

To optimize the outcomes of Kirkpatrick's Model, several best practices should be considered. First, clear objectives at each evaluation level act as a compass, guiding measurement efforts towards successful organizational alignment. Creating a culture that encourages continuous feedback from various stakeholders is crucial for refining future training programs. Additionally, being adaptive to evaluation findings allows organizations to modify training content and delivery methods to maintain relevance and efficacy. Finally, enhancing user engagement through interactive elements will create a more enriching training experience and improve learning outcomes.

Effective Implementation: Establish clear objectives for each level of evaluation to guide measurement efforts and ensure alignment with broader organizational goals.

Continuous Feedback Loop: Encourage ongoing feedback from participants, facilitators, and other stakeholders to refine future training programs continuously.

Training Adaptations: Be prepared to adapt training content and delivery based on evaluation findings to ensure relevancy and effectiveness.

Enhancing User Engagement: Utilize interactive elements and engaging formats that resonate with learners, promoting a more enriching training experience.

5.10. Universal Design for Learning in LMS

Understanding Universal Design for Learning (UDL)

Universal Design for Learning (UDL) is a proactive educational framework designed to support the diverse needs of all learners. Historically rooted in universal design principles, UDL prioritizes inclusivity and ensures that learners can engage meaningfully with content, irrespective of their individual differences.

Definition

UDL is an educational framework that aims to optimize teaching and learning for all individuals by providing multiple means of representation, expression, and engagement.

Historical Context

The UDL framework emerges from the principles of universal design across various fields, advocating for an educational approach that accommodates learners with differing abilities and learning preferences.

Relevance in Education

UDL is increasingly relevant in modern educational contexts, particularly as classrooms become more diverse and technology-facilitated learning environments are adopted.

Key Concepts

Key concepts of UDL emphasize flexibility, inclusivity, and the removal of barriers within educational environments, ensuring that all learners can succeed.

Principles of Universal Design for Learning (UDL)

The principles of UDL center around flexibility and individualization, focusing on ways to enable all learners to engage effectively with content. By recognizing the variability among learners, UDL provides an essential framework for promoting equitable opportunities in education.

Overview of Principles

The three core principles of UDL include Multiple Means of Representation, Multiple Means of Action and Expression, and Multiple Means of Engagement, which collectively promote inclusivity.

Flexibility

UDL emphasizes the need for flexible approaches to teaching and assessment, accommodating for diverse learning needs and preferences.

Individualization

Individualization of the learning experience is essential within UDL, allowing educators to tailor instruction based on the distinct strengths and challenges of each learner.

Importance in Learning

The principles of UDL enhance educational effectiveness by fostering environments where all learners can thrive, promoting equity in learning outcomes.

Principle 1: Multiple Means of Representation

The first principle of UDL focuses on Multiple Means of Representation, advocating for diverse formats in content delivery. By providing various ways to present information—ranging from visual aids to interactive elements—educators can cater to varied learning preferences, ultimately enhancing comprehension and accessibility.

Definition

This principle emphasizes the importance of presenting information in multiple formats to ensure that all learners can access and comprehend the content.

Different Formats

Utilizing varied formats such as text, visuals, audio, and interactive media enhances comprehension, offering learners different pathways to understanding concepts.

Visual Aids

Visual aids can enhance understanding, catering to learners who benefit from graphic supports—such as diagrams or infographics.

Application in LMS

In Learning Management Systems, providing varied content formats enables personalized learning paths, fostering engagement and understanding.

Principle 2: Multiple Means of Action and Expression

The second principle of UDL emphasizes Multiple Means of Action and Expression, focusing on providing learners with various ways to demonstrate their understanding. By allowing students to make choices in how they convey their knowledge and encouraging interactive and creative expressions, we empower learners to engage more deeply with their education.

Definition

This principle underlines the importance of allowing learners to demonstrate knowledge in various ways, catering to their strengths and preferences.

Student Choice

Offering students choices in how they express their learning fosters autonomy and motivation, encouraging them to take ownership of their educational journey.

Interactive Tools

Utilizing interactive tools for submissions (such as blogs, podcasts, or video presentations) enhances creativity and keeps learners engaged in the learning process.

Creativity in Learning

Encouraging creative expression fosters deeper understanding and helps to maintain learner interest in the subject matter.

Principle 3: Multiple Means of Engagement

The third principle of UDL centers on Multiple Means of Engagement, emphasizing the necessity of motivating learners through varied means. By integrating strategies that resonate with students' interests and fostering interaction, educators can create an inclusive environment where all learners feel valued and engaged.

Definition: This principle highlights the importance of engaging learners through different strategies that cater to their varying interests and motivations.

Motivating Learners: Engagement strategies should prioritize learner motivation, addressing individual interests, preferences, and goals to keep students invested in their learning.

Strategies for Engagement: Employing cooperative learning, choice-based tasks, and gamification are effective methods for fostering engagement and leveraging learner interests.

Application in LMS: Learning Management Systems can utilize these engagement strategies through discussions, interactive quizzes, and collaborative projects to create a dynamic learning experience.

The Importance of Accessibility

Accessibility serves as the cornerstone of inclusive education. It goes beyond legal requirements to embrace ethical considerations, focusing on fostering environments that empower all learners. When educational institutions prioritize accessibility, they positively influence learning outcomes and retention rates for all individuals.

Definition of Accessibility: Accessibility pertains to the design of educational content and platforms to ensure that they are usable by individuals with diverse abilities and disabilities.

Legal Requirements. Educational institutions are often bound by legal mandates, such as the Americans with Disabilities Act (ADA), to provide accessible educational resources and environments.

Ethical Considerations: Ensuring accessibility is an ethical obligation that promotes fairness and equity, enabling all learners to participate fully in the educational process.

Impact on Learning Outcomes: Accessibility has a profound impact on student retention and success, showing that inclusive practices can lead to better learning outcomes for all individuals.

Implementing UDL in Learning Management Systems

When implementing UDL in Learning Management Systems, adopting practical strategies can significantly enhance inclusivity in educational environments. These strategies include thorough redesign of courses, faculty training, and actively seeking student feedback to ensure UDL principles are effectively embedded in teaching practices.

Strategies for Implementation: Incorporating UDL principles necessitates comprehensive strategies that involve curriculum redesign, learner feedback, and continuous professional development for educators.

Integration in Course Design: Seamlessly integrating UDL into course design helps educators create inclusive classrooms that accommodate diverse learners from the outset.

Faculty Training: Providing faculty with adequate training on UDL principles, technologies, and pedagogical strategies ensures effective implementation within LMS.

Student Feedback: Collecting and utilizing student feedback is paramount to understanding the effectiveness of UDL strategies and refining approaches accordingly.

Tools and Features in Moodle Supporting UDL

Moodle serves as a practical platform for implementing UDL principles. It offers a variety of UDL-compatible features—ranging from multimedia content to accessibility tools—that enhance both learning and engagement for diverse student populations. By effectively utilizing these features, educators can significantly improve inclusivity in various learning settings.

Moodle Overview: Moodle is a widely used Learning Management System that facilitates the implementation of UDL principles through its diverse set of tools and features.

UDL-Compatible Features: Features such as multimedia content, varied assessment tools, and collaborative spaces support UDL principles and cater to diverse learner needs.

Accessibility Tools: Moodle offers several accessibility tools, including text-to-speech, closed captioning, and customizable interfaces to enhance accessibility for all users.

Examples of Usage: Using Moodle's features effectively—such as quizzes, forums for discussion, and resources in various formats—demonstrates successful UDL implementation.

Benefits of UDL for Diverse Learners

One of the most significant advantages of applying UDL principles is the enhanced educational equity experienced by diverse learners. Research supports that by addressing individual needs through tailored learning pathways and inclusive practices, educators can enrich learning outcomes and foster long-lasting engagement.

Inclusivity: UDL fosters inclusiveness by ensuring that educational content and activities are accessible to all, breaking down barriers to learning.

Learning Outcomes: Research indicates that applying UDL principles positively impacts learning outcomes, as diverse strategies cater to individual student strengths.

Tailored Learning Experiences: UDL allows educators to provide customized learning experiences that meet the unique needs and preferences of each learner, promoting engagement.

Addressing Diverse Needs: By recognizing the varied challenges faced by students, UDL approaches enable the development of strategies to support diversity in the classroom.

Overcoming Barriers to UDL Implementation

Despite its benefits, implementation of UDL principles often encounters barriers attributed to institutional culture, resources, or policy limitations. Addressing these challenges requires developing effective strategies, building a supportive educational culture, and leveraging policy changes that advocate for inclusivity in education.

Common Barriers

Barriers to UDL implementation often include institutional resistance to change, lack of resources, and insufficient training for educators.

Strategies to Overcome

Engaging stakeholders, providing ongoing support, and utilizing resources effectively are key strategies to overcome barriers and promote UDL.

Policy Considerations

Establishing supportive policies that prioritize inclusivity in education can address systemic barriers to successful UDL implementation.

6. Best Practices for Implementing Instructional Design in LMS

6.1. Aligning Learning Objectives with LMS Features

The alignment between instructional goals and LMS functionalities is critical. Learning objectives provide a roadmap for instruction, while the technical features of an LMS enhance the delivery of content and assessments. By ensuring coherence, we promote an environment conducive to learning.

Learning Objectives: Setting clear, measurable learning objectives establishes the foundation for course design and assessment.

LMS Functionalities: Understanding the technical capabilities of the LMS helps in selecting the right tools to meet instructional goals.

Ensuring Alignment: Consistency between course objectives and LMS features fosters a coherent learning environment that supports student success.

6.2. Content Creation Strategies

Content creation is at the heart of instructional design. Utilizing diverse content types, such as multimedia and interactive components, maintains learner engagement. Quality assurance measures must be established to validate the authenticity and relevance of materials, while a structured approach allows learners to traverse the content seamlessly.

Content Types: Employing various content formats, such as videos, quizzes, simulations, and text, enriches learner experiences and caters to different learning styles.

Quality Assurance: Implementing rigorous review processes ensures that educational materials are accurate, relevant, and engaging, maintaining high standards.

Structuring Materials: Organizing content logically and intuitively enhances navigation and sustains learner engagement throughout the course.

6.3. Enhancing Learner Engagement

To create dynamic learning experiences, engagement is paramount. Techniques such as storytelling, gamification, and active participation through interactive elements instill motivation. By tailoring these strategies to learners' intrinsic and extrinsic motivators, we can enhance their drive to succeed.

Engagement Techniques: Incorporating storytelling, real-world applications, and gamification increases motivation and participation in learning activities.

Interactive Elements: Utilizing quizzes, discussions, and peer-feedback fosters active learning and collaborative knowledge-building.

Motivation Strategies: Understanding intrinsic and extrinsic motivators helps in crafting experiences that resonate with learners, enhancing their desire to participate.

6.4. Use of Multimedia and Interactive Elements

The integration of multimedia and interactive elements is transformative in instructional design. Utilizing various formats—such as video, audio, and graphics—fuels engagement while catering to different learning styles. Furthermore, interactions like simulations provide immersive opportunities that allow learners to apply their knowledge dynamically.

Multimedia Types: Employing a mixture of videos, podcasts, infographics, and animations caters to diverse learning preferences and enriches content accessibility.

Benefits: Multimedia can enhance understanding through visualization and contextualization, making complex concepts more digestible and memorable.

Integrating Interactive Features: Interactive elements like simulations and branching scenarios create immersive experiences that actively engage learners in the material.

6.5. Assessment and Feedback Mechanisms

Assessment and feedback are critical components of effective instructional design. Through diverse assessment types like formative and summative evaluations, educators can gain insights into learner progress. Timely feedback not only aids learners in recognizing their strengths and weaknesses but also assists educators in refining instructional strategies.

Assessment Types: Utilizing formative, summative, and diagnostic assessments ensures a comprehensive approach to evaluating learner progress.

Timely Feedback: Providing swift feedback helps learners understand their progress and areas for improvement, fostering continuous growth.

Informing Instruction: Feedback mechanisms can inform educators about instructional effectiveness, guiding necessary adjustments and enhancements to the course.

6.6. Accessibility and Inclusivity Considerations

Creating accessible and inclusive learning environments is not just a requirement; it is a moral obligation. Adhering to ADA compliance while implementing inclusive design principles establishes a framework where all learners can participate. By focusing on equity, we ensure that every student has a fair chance to succeed. *ADA = Americans with Disabilities Act

ADA Compliance: Adhering to regulations like the ADA ensures that all learners, including those with disabilities, have equitable access to educational resources.

Inclusive Design Principles: Designing courses with diverse learners in mind fosters a richer educational environment where all students can thrive.

Equity in Learning: Incorporating adaptive technologies and responsive design practices creates a learning atmosphere that addresses the unique needs of every student.

6.7. Data Analytics for Continuous Improvement

Data drives decisions in educational contexts. Implementing robust data analytics allows educators to track learner progress and analyze engagement insights effectively. By utilizing this data, continuous enhancements can be made to instructional design, ensuring a responsive and evolving educational experience.

Tracking Learner Progress: Utilizing data analytics to monitor engagement and assessment results provides a foundational understanding of learner success.

Analyzing Engagement Data: Dissecting data related to learner interactions enables educators to identify trends, areas of difficulty, and opportunities for improvement.

Iterative Enhancements: Base instructional design modifications on data-driven insights for continuous improvement in teaching strategies and learner experiences.

6.8. Training and Support for Educators

Investing in the training and support of educators is vital for successful instructional design implementation. Continuous professional development, along with robust support structures, empowers instructors, enabling them to leverage LMS technologies effectively and create impactful learning environments for their students.

Professional Development: Ongoing training programs equip educators with the skills and knowledge necessary to utilize LMS technologies effectively.

Support Structures: Establishing mentorship and resource networks ensures that educators feel supported in their instructional design efforts.

Empowering Instructors: Empowering educators with tools and knowledge enables them to create meaningful learning experiences that resonate with their students.

6.9. Encouraging Collaboration and Communication

Promoting collaboration and open communication among learners is essential for a thriving educational environment. By utilizing collaborative tools and structured discussions, we foster a sense of community, encouraging peer-to-peer support and knowledge-sharing that enhances the learning process.

Collaborative Tools: The integration of platforms for discussion, project collaboration, and peer review fosters a sense of community and co-learning.

Facilitating Discussions: Structured discussion forums and group activities encourage knowledge-sharing and collective problem-solving among peers.

Building Community: Creating a welcoming atmosphere where learners feel valued and connected enhances their overall educational experience and satisfaction.

6.10. Common Pitfalls to Avoid

Recognizing common pitfalls is crucial in refining instructional design practices. Issues like content overload and implementation challenges can derail the learning process, but by analyzing past mistakes, we can foster a culture of improvement and develop more effective design strategies.

Mistakes in Design: Overloading courses with content can overwhelm learners and detract from essential knowledge retention.

Implementation Challenges: Failing to test the LMS before rollout may lead to technical difficulties, hindering the learning experience.

Lessons Learned: Identifying and critically assessing common mistakes fosters a culture of continuous improvement and effective design strategies.

7. Applying Instructional Design Models in Moodle

7.1. Overview of Moodle as an LMS

Moodle stands out as an open-source LMS that is customizable and adaptable, making it a popular choice for institutions worldwide. It offers key features such as robust course management, various user engagement tools, and comprehensive analytics, all contributing to a dynamic learning experience. The benefits include the ability to create flexible and inclusive learning pathways, adjustable to numerous educational settings and catering to learners' diverse needs.

Definition of Moodle

Moodle is an open-source Learning Management System (LMS) designed to provide educators, administrators, and learners with a single robust, secure, and integrated system to create personalized learning environments.

Key Features

Moodle offers a wide range of features such as course management, user tracking, customizable dashboards, and various activity modules that enhance student engagement and learning.

Benefits of Moodle

The platform promotes learning flexibility, accessibility, and collaboration, allowing both educators and learners to engage more effectively regardless of their geographic locations.

User Statistics

Globally, millions of users leverage Moodle across diverse educational institutions, emphasizing its widespread acceptance and reliability as a prominent LMS.

7.2. Aligning ADDIE with Moodle Features

The ADDIE model provides a comprehensive framework that can be seamlessly integrated with Moodle features. Each phase — from conducting analyses of learner needs using analytical tools, designing content through various resource types, to implementing and evaluating using feedback and analytics — ensures an efficient and targeted educational experience. This alignment maximizes the potential of both instructional design and the capabilities inherent in Moodle.

Introduction to ADDIE: The ADDIE model — comprising Analysis, Design, Development, Implementation, and Evaluation — is a systematic instructional design process that ensures effective learning delivery.

Analysis in Moodle: In the Analysis phase, educators utilize Moodle's data analytics and reporting tools to identify learners' needs, performance issues, and content gaps before course creation.

Design Elements in Moodle: The Design phase incorporates strategies facilitated by Moodle's resource types, such as quizzes, forums, and assessments, shaping the structure of the course based on learning objectives.

Implementation and Evaluation: During Implementation, educators can effectively launch the course using Moodle's user-friendly interface while Evaluation encompasses reviewing learner feedback and analytics to refine course effectiveness.

7.3. Implementing SAM in Moodle Development

The Successive Approximation Model offers significant advantages for course development within Moodle due to its iterative nature. Rather than a linear progression, SAM encourages cycles of development, allowing for ongoing feedback and enhancements. This approach is particularly effective when integrating emerging instructional strategies that cater to learning needs continuously, fostering an agile educational design process.

Overview of SAM: The Successive Approximation Model (SAM) focuses on an agile and iterative approach to instructional design, allowing for flexible adjustments throughout course development.

Iterative Design Process: In SAM, courses are designed, developed, and refined in cycles, allowing constant updates based on learner data and feedback received from Moodle.

Prototyping and User Feedback: Using Moodle, instructional designers can create prototypes of course components enabling early and frequent user testing to assess usability and engagement metrics.

Adaptability of SAM: The SAM approach is inherently adaptable; it empowers educators to make real-time modifications to course content as new insights or technology updates emerge.

7.4. Incorporating Merrill’s Principles in Course Design

Merrill’s Principles of Instruction are essential for creating impactful learning experiences within Moodle. By activating prior knowledge, demonstrating concepts clearly, applying learning through constructive activities, and integrating these insights within real-world scenarios, educators can craft a dynamic, engaging, and effective online environment that prioritizes active learner participation.

Merrill’s Principles Defined: Merrill's Principles of Instruction emphasize real-world problem-solving and active engagement through five key phases: Activation, Demonstration, Application, Integration, and Evaluation.

Activation Phase: Incorporating prior knowledge is critical; Moodle enables educators to create introductory activities or surveys that familiarize learners with course materials and concepts.

Demonstration and Application: Moodle can facilitate demonstrations using video or simulations followed by practical application tasks, reinforcing learning through active participation.

Integration of Knowledge: By integrating knowledge through real-world scenarios and group projects within Moodle, learners can apply their understanding to authentic contexts, enhancing retention.

7.5. Utilizing Gagne's Events in Moodle Activities

Gagne's Nine Events of Instruction provide a structured approach to crafting learning experiences within Moodle. By methodically integrating each event — from capturing learner interest to providing clear assessments — educators can create dynamic and engaging instructional sequences that foster deeper understanding and retention of material.

Gagne's Nine Events Overview: Gagne's model outlines a sequence of instructional events that enhance learning, including gaining attention, informing learners of objectives, and assessing performance.

Presentation of Content: Moodle's content delivery tools allow educators to effectively present new information through multimedia elements like videos, images, and readings.

Guidance and Feedback: Continuous guidance and timely feedback mechanisms within Moodle help learners navigate their progress through forums, quizzes, and peer evaluations.

Assessment and Structuring Learning: Assessment tools within Moodle enable structured evaluations of learning outcomes at various stages, ensuring learners receive corrective feedback post-assessment.

7.6. Applying Bloom's Taxonomy to Assessments

Bloom's Taxonomy offers a foundational framework for designing assessments within Moodle that effectively evaluate varying levels of cognition from basic recall to higher-order thinking. Educators can develop assessments that align strategically with learning objectives, ensuring that each level of cognitive skill is effectively addressed, thereby enhancing learner outcomes.

Understanding Bloom's Taxonomy

Bloom's Taxonomy categorizes cognitive skills into six hierarchical levels: Remember, Understand, Apply, Analyze, Evaluate, and Create, guiding assessment development.

Crafting Assessments

In Moodle, assessments can be tailored to target different cognitive levels, ranging from simple quizzes focused on recall to complex tasks requiring critical thinking.

Aligning Assessments with Objectives

Linking assessments to specific learning objectives ensures alignment with desired cognitive outcomes, enhancing both teaching and learning effectiveness.

Examples within Moodle

Practical application in Moodle can include various assessment forms, such as quizzes, assignments, peer reviews, and project submissions, that correspond to different taxonomy levels.

7.7. Using Kirkpatrick's Model for Course Evaluation

Kirkpatrick's evaluation model provides a comprehensive framework for assessing the effectiveness of courses designed in Moodle. By measuring immediate reactions, evaluations of learning, behavioral changes, and long-term results, educators can employ a holistic approach to course evaluation that informs future instructional design and improvement initiatives.

Understanding Kirkpatrick's Model: Kirkpatrick's evaluation model includes four levels: Reaction, Learning, Behavior, and Results, capturing comprehensive feedback on course effectiveness.

Measuring Reaction: Utilizing surveys and feedback forms in Moodle, educators can measure how learners respond immediately after course completion, gauging engagement and satisfaction.

Assessing Learning: Moodle's assessment features enable instructors to evaluate the knowledge gained through both conceptual understanding and practical application tests.

Behavior and Result Outcomes: Observation and performance data can be facilitated through reporting tools in Moodle, allowing for long-term tracking of learner progress and course impacts.

7.8. Integrating UDL Principles in Moodle

Integrating UDL principles within Moodle creates a more inclusive and supportive learning environment where all students can engage effectively. By providing varied representations of content, implementing diverse engagement strategies, and allowing multiple assessment formats, educators can meet the needs of all learners and ensure equitable access to educational opportunities.

Overview of UDL

Universal Design for Learning (UDL) promotes inclusivity and flexibility in education, ensuring all individuals can access, participate in, and succeed in learning environments.

Representation Methods

Moodle provides varied content formats — text, video, audio, and interactive elements — to present material in multiple ways, catering to diverse learner preferences.

Engagement Strategies

Interactive features like forums, quizzes, and collaborative projects foster learner engagement, allowing students to connect with content and peers.

Assessment Formats

Offering various assessment types, such as journals, discussions, and projects, accommodates different learning styles while ensuring comprehensive student evaluation.

7.9. Constructivist Tools within Moodle

Constructivist tools within Moodle foster a rich learning environment wherein learners can actively engage with content through collaboration and reflective practices. By leveraging forums, wikis, and project-oriented tasks, educators can ensure a dynamic student-centered approach that aligns with the principles of constructivism.

Understanding Constructivist Learning Theory

Constructivism posits that learners construct knowledge through experiences and reflection, emphasizing the importance of active participation and collaboration.

Collaborative Tools

Moodle supports collaborative learning through tools such as forums, wikis, and workshops, where learners can engage in peer interaction and shared knowledge construction.

Project-Based Learning

Educators can design project-based assignments where learners explore real-world challenges collaboratively, utilizing Moodle's functionalities to manage tasks and submissions.

Practical Examples

Implementing case studies, group discussions, and reflective journals within Moodle empowers learners to engage critically with content, promoting deeper understanding.

7.10. Tips for Effective Implementation

To successfully implement instructional design models in Moodle, it is essential to adopt effective strategies. This includes careful planning and execution, providing comprehensive training for faculty, ensuring access to support resources, and fostering an environment of continuous improvement. By following these tips, educators can maximize the impact of their designs and promote effective learning experiences.

Implementation Strategies

Adopting structured approaches to implement instructional design models in Moodle, ensuring a clear plan, timeline, and resource availability.

Faculty Training

Providing comprehensive training for faculty on utilizing Moodle's features is critical for successful course design and delivery, enhancing instructor confidence and competency.

Support Resources

Establishing robust support resources such as help desks, online tutorials, and peer mentoring helps faculty navigate Moodle effectively and promotes continuous learning.

Continuous Improvement

Encouraging a culture of continuous improvement based on feedback and assessments ensures that course offerings remain relevant, engaging, and aligned with best practices.

8. Introduction to Moodle

The core idea of this course on *"Moodle basics"* is to give an overview about e-learning as a supportive learning to current contact hours. Course's e-support is a simpler version of e-course. On the other hand, it doesn't mean that e-supported learning is only about sharing learning materials, - it should also include learning process, where students can do self-assessments and get a continuous feedback. In general, there is no difference if you start to create an e-support for your course or e-course directly. Tools that we use, are all same. It is understood that creating an e-course takes more time, because in that case we are creating a virtual classroom where the subject can be effectively studied/learned fully (100%) within an e-learning environment.

Current e-course gives an overview of how to use Moodle e-learning environment to create e-supported learning for your subject. It is assumed that the users do not have previous experience working in Moodle. Some course information is also useful for advanced users, because different settings and possibilities are explained as to how those can be used or are used in practice (based on sample e-courses). This e-course supports the Moodle face-to-face course that is given in each semester, although it is built up in a way, that it can be used for learning (or recalling) independently as well. For independent learning this course is open also for guest users. Therefore, all course materials are available, but the guest user can not participate in course forums or do self-assessment tests.

8.1. Introduction

Creating an e-support / e-course (or in more general just e-learning) should follow, for the sake of integrity, some requirements (recommendations) that are expressed in the form of specific components or settings. In this document you can find some examples that should help to build up your own ideas and perhaps in that way you can create e-learning more effectively. It is important to note that e-learning is not just about presenting learning materials - it is about offering a learning process. From that perspective we need to create e-learning from the learner's viewpoint. Learner's viewpoint means that we share all important guidelines, we explain how our course is built up (action plan) and how the learning process itself should happen (study guide). All these documents are central information material, that student should check at the very beginning and in that way understand, how the course is built up, how the e-supported learning is connected to contact hours and in what order student should study or take on learning materials. In addition, each study module (weekly or topic basis) should be explained with additional remarks/introduction to give an idea about its role in the whole learning process. Study guide (and action plan) should clearly state what information is given during contact hours and which parts/topics can be accessed and taken as e-learning. It is also important that e-learning activities are given from student perspective with respective time schedule. In other words, how much time it may take to work with all materials in "Module 1" (incl. theory, practice, quizzes etc.). Those timings are estimations and quite often given as a time range based on an average student's viewpoint.

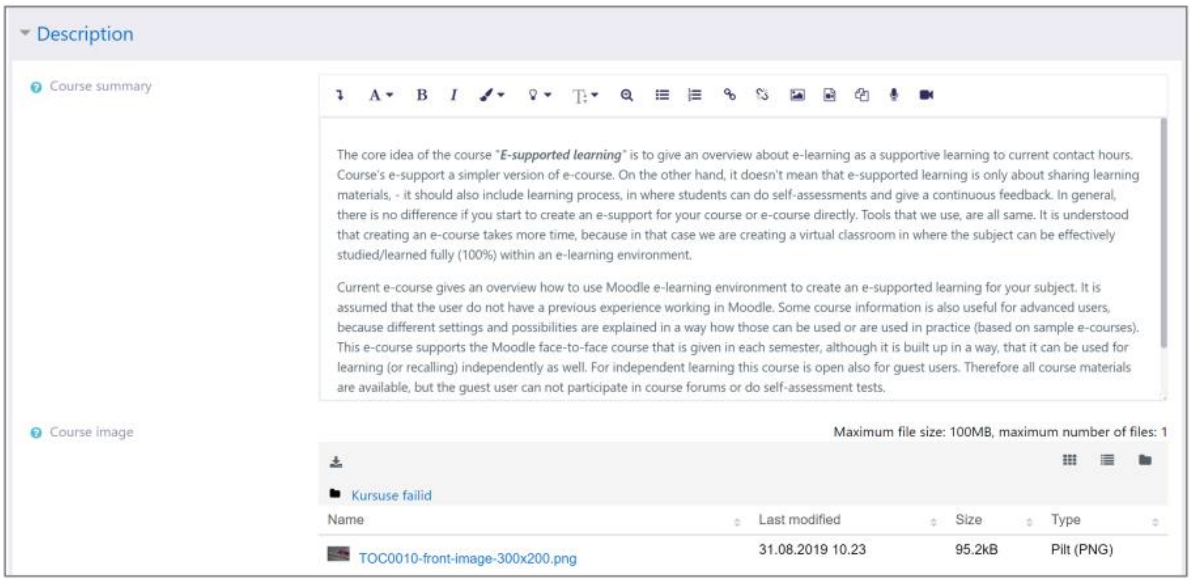
The current guide is divided into four main categories: course organizational side, learning materials, self-reflection tools and feedback.

Course organizational side

Course summary

Free form text which explains the course. It is an important part, especially if the course is not accessible for guest users. Therefore, this information is shown as a preliminary info in respective school/department subsection, once a user clicks on the Summary icon. In here it is also possible (and recommended) to include how to access this course (as a guest, with an enrolment key - with whom to contact if interested etc.)

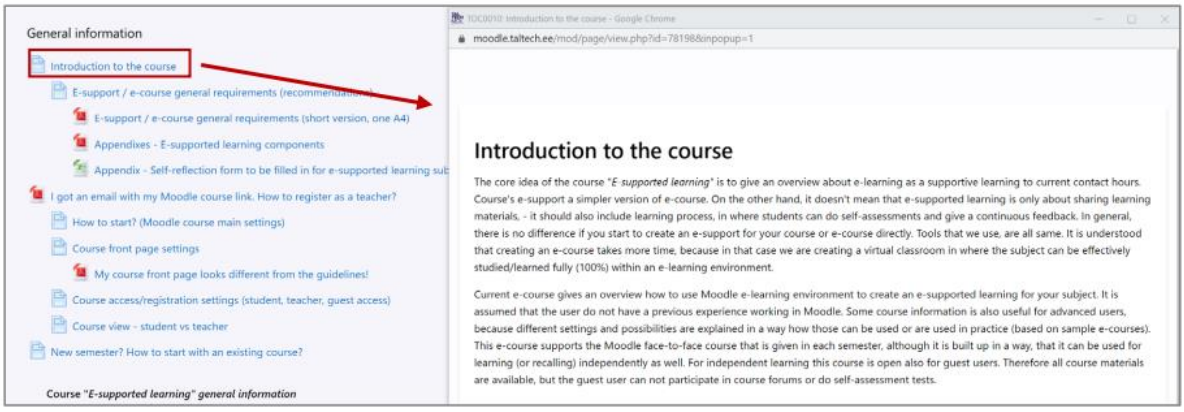
To be determined: > Edit settings > in section > Description



Introduction to the course

Free form text which explains the course. It can follow the previously mentioned course summary (determined in course settings). Note that it is not a copy of the study guide or action plan, nor a copy of course data from the study information system. It can mention what this course is all about and how the learning process is formed.

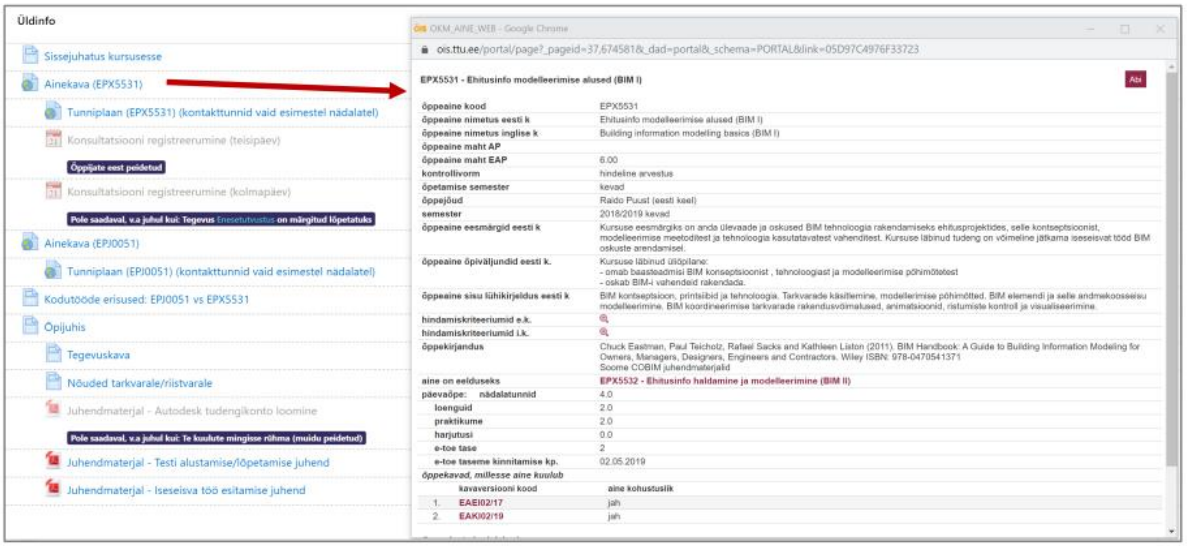
Usually created as: > Turn editing on > Add an activity or resource > RESOURCES > Page or File (ex. PDF file)



Link to study information system

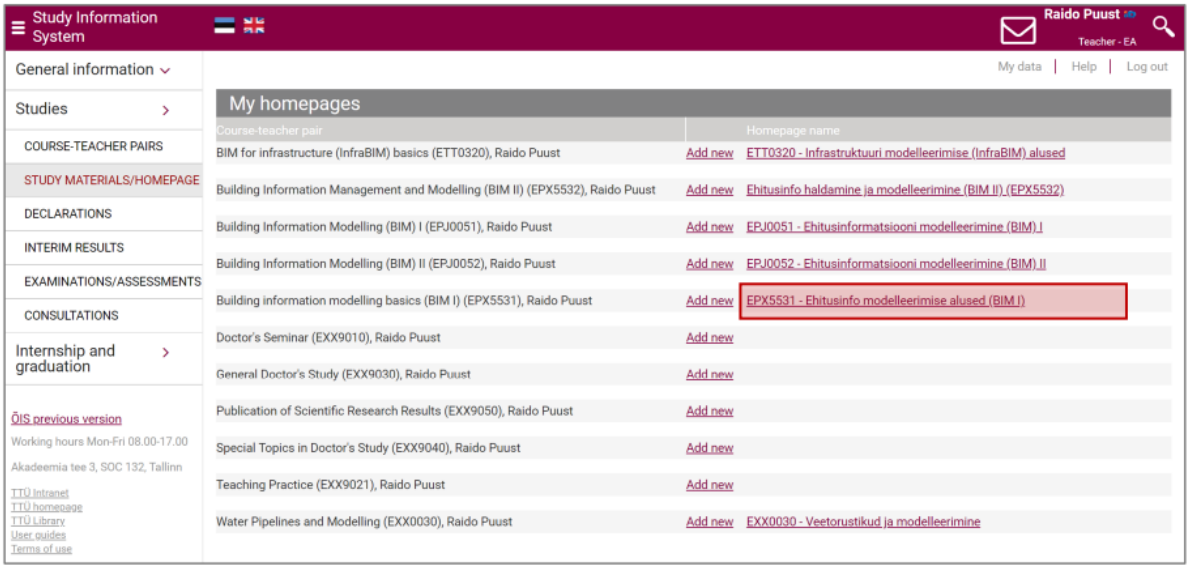
Link to the course info in study information system. It is a link, therefore avoid creating it as copy or as page in Moodle.

Created as: > Turn editing on > Add an activity or resource > RESOURCES > URL



Link from study information system to a course page

Study information system should include a link to a e-supported learning location. It can be achieved using home page option, where a link is added/created.



Extended syllabus (study guide)

Study guide (extended syllabus) describes the learning process in an e-supported course. This is not a copy of course info from study information system. In that case it would be information duplication.

• Study guide explains (as a free form text) how to act in the course, what are the prerequisites and how to get more information (incl. references to additional materials/literature).

• Study guide can include action plan (ex. weekly basis). If action plan is included as separate information (page, link, file) then in study guide it is presented as a summary of action plan. It is crucial that mentioned topics in study guide follow the same names as in Moodle course page (incl. topic number). It is hard to understand from the student perspective if those little but important things do not match.

• Study guide also describes the proportion of contact hours and e-learning. It states when it is needed to participate in contact hours, is it mandatory or can it be taken also as e-learning? Study guide clearly states the goals of independent work (connected with the action plan).

• Study guide includes detailed information about evaluation criteria. This should relate to information available in study information system but describes in more detail what is available in Moodle and how it is evaluated. It is important to describe how the final grade forms. Evaluation criteria should relate to the gradebook even when grading is only partly made in Moodle (ex. only self-reflection quizzes are carried out, but all points or full grade is coming from an exam/labours etc.).

• Study guide also includes a list of additional materials (ex. links/references to library sources). Study guide should include information, how lecturer answers to student's questions (ex. what the period is within which the answer is given - is it 24h or 48h or less/more) and what are the additional possibilities for communication if the student can't access the course. All in all, it is important to fix student's expectations if she/he has a question/problem or has a misconception when the homework should be presented and when a feedback is given by a lecturer.

• Study guide should also include information about possible prerequisites. Sometimes it is a special software that the student should access, sometimes it is specific configuration of a laptop/computer (specific software-based homework). If there is a need to use some commercial software (incl. MS Word / Excel) then alternatives should be also noted, and lecturer should ensure that the content is presented (can be viewed) in the same way as prepared. Lecturer should not assume that a student should buy a commercial software license to be able to be successful in the course. This also includes the avoidance of trial licenses in cases when student should be able to present the homework throughout the semester and therefore the license may expire in the middle.

• Study guide includes the course completion requirements. What are mandatory activities and what happens if some mandatory activities are missed due to a deadline.

Usually created as: > Turn editing on > Add an activity or resource > RESOURCES > Page or File (ex. PDF file)

Course action plan

If the study guide (extended course description) does not include action plan or it is generalized there (as recommended), action plan should be included as a separate content.

• Action plan includes information about how activities are divided between contact hours and e-learning or independent work. In which weeks the labs or mandatory practice hours are given. If some contact activities can be taken or replaced by independent work, then it should be noted for that specific week/topic in the action plan.

• Action plan lists those activities that are expected to be accomplished by a student for that time period. If some activities are with a clear deadline, those should be highlighted.

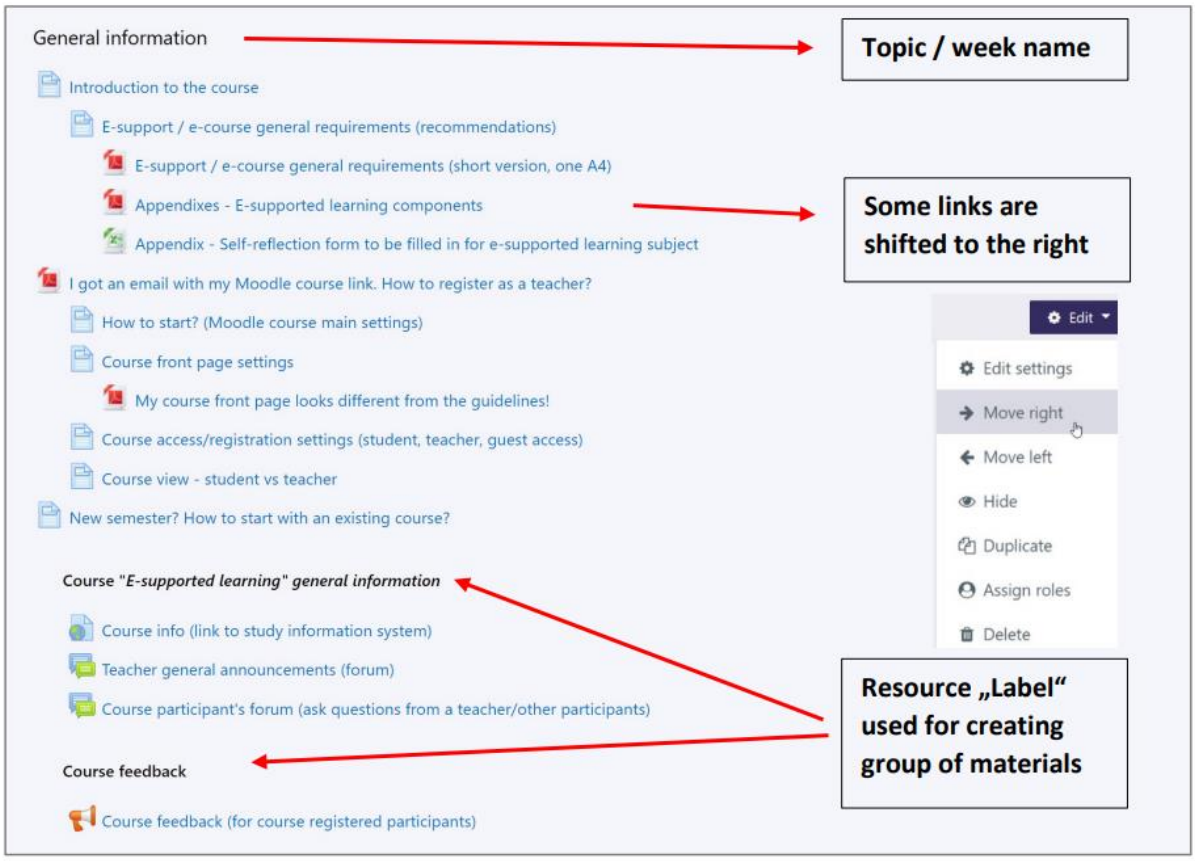
• Action plan should also include how much time is needed to take on and accomplish that specific activity/component. In e-learning in general it is important to summarize/show how much time is needed on a weekly basis. This gives the possibility for a student to plan her/his time allocation.

Usually created as: > Turn editing on > Add an activity or resource > RESOURCES > Page or File (ex. PDF file)

General layout, structure

If one module/topic/week includes different types of material (links, files, activities etc.), it is recommended to include substructure with a label resource. It helps to deliver and see available content more effectively.

Usually created as: > Turn editing on > Add an activity or resource > RESOURCES > Label



Course can be described with an image (or by video). Once image is added to course front page, check its size, so that it is not too large (in pixels). It is recommended that images on front page are added in wide-screen fashion (not like squares or close to that). Recommended image width is 800 pixels, but it depends on course general layout and how many course blocks are used on the left/right hand side. Once the image is added, check how it appears in different browser sizes (by simply shrinking the browser's width).

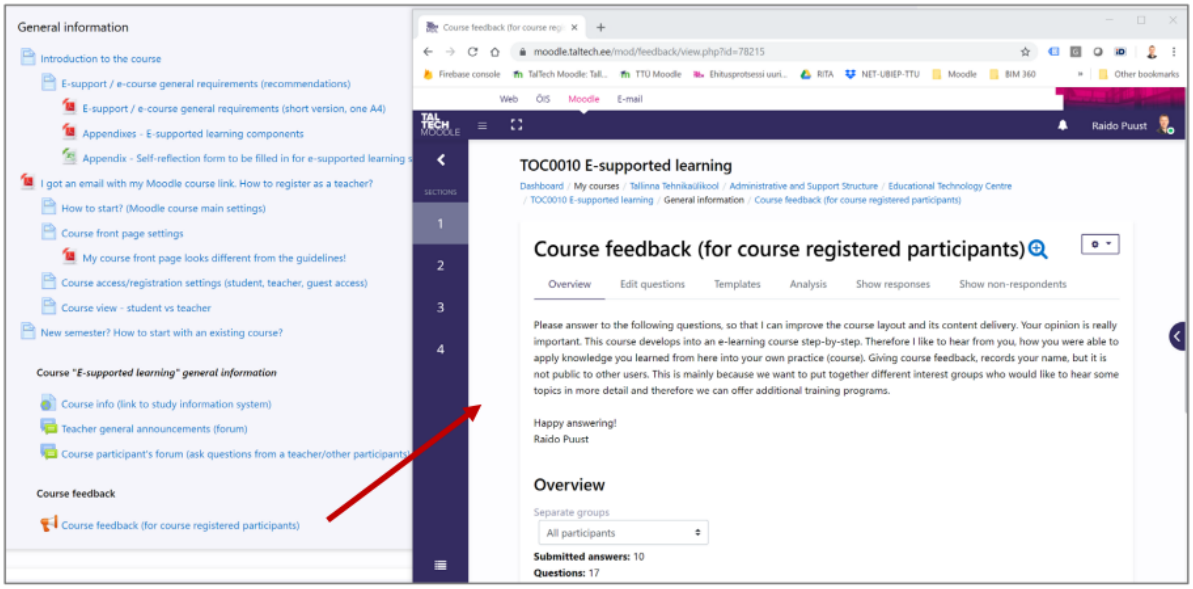
An image should include its name, author and link/resource from where it is taken (internet-based images). Check that the used image has copyright condition that enables to reuse/change it (including colorizing, adding text etc.).

Copyright information should be added (in case of front page image use) below the image itself. Sometimes it makes sense to add such information to the course introduction, especially when image collage or multiple images are used (to the end, like references section).

Course feedback

E-supported learning should include at least one course feedback option that enables to get information from participants to improve the e-learning part (learning process). This is not the same as study information system's feedback. In fact, you have a lot more possibilities how to gather feedback (in terms of questions, anonymously or not, etc.). In this way you have more information as to what students think about your course, what they liked and where they see a need for improvement (including the ways of e-learning delivery, how easy it was to understand etc.).

Usually created as: > Turn editing on > Add an activity or resource > ACTIVITIES > Feedback

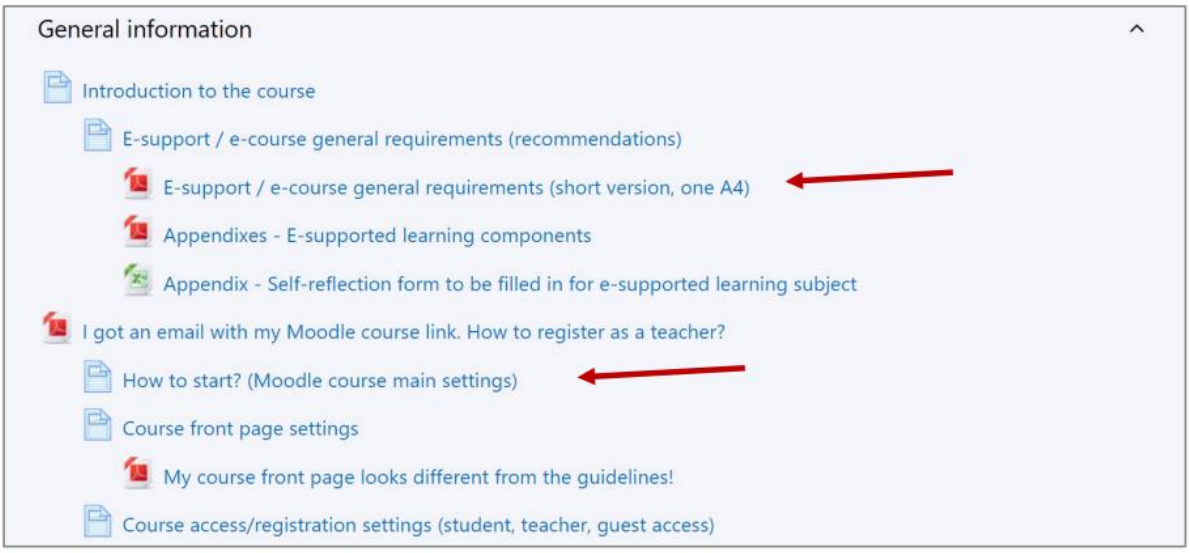


Learning materials

Text, slide, video

The core idea of main modules is to give students a possibility to familiarize with the topic independently. Quite often it is in the form of conspectus, slides, link/reference to main book's chapter, etc.). Those materials should be added in universal format, in case of conspectus/slides it is PDF. Using various formats that originates from commercial packages (incl. MS Word or *.doc; MS Excel or *.xls; MS PowerPoint or *.ppt etc.) is not justified if there is no special need to edit those documents or consider as a template (lab protocols etc.). If that is the case, the study guide should list the possibilities of what are the alternative (free) ways to open those files if student do not have access to a commercial license. For example, alternative software package that can be used, ensuring that by using those packages all content looks the same and nothing is missing. File based learning materials should open (if browser itself acts as a viewer) on a separate browser tab or in pop-up. In that way we are not directing student out of the e-learning system. This doesn't account for special file types that should be firstly downloaded to your computer. Pop-up windows and their sizes should be harmonized all over the course. An exception of that is video pop-up as a learning content. Video pop-up size should take into account the video's original aspect ratio (this can be used also for other pop-ups if needed). The recommended pop-up size is 1000 x 600 (in pixels, width x height). By default, the pop-up might be like 600 x 400. For today's screens it is too small and therefore we want to make things easier for students so that she/he doesn't need to always resize the content as a first thing. Conversely, sizes more than 1000 pixels, are also not recommended. Each course creator should check how her/his course looks like while accessing it from different devices (smartphone, tablet, PC, etc.).

Usually created as: > Turn editing on > Add an activity or resource > RESOURCES > File, Page, Book, URL etc.



Note: Pay attention that link name includes the type of a learning material (like slide, video etc.) for easier navigation.

While using a video as learning content, it is recommended to upload it to some video streaming service (ex. YouTube, Vimeo, etc.). After that the video link can be referenced from Moodle. This video should open in a separate browser tab or in pop-up. In that way we are not directing the student out of the e-learning system. On opening video in a pop-up or on a separate tab (from the video streaming service), it is recommended that the video fills the pop-up. This is usually called an embedded content and such links can be easily taken from video service environments. Usually, by default, when we grab the video link from the browser's address bar, it includes the service provider's user interface as well. We do not want to refer to the video in that way, because it simply distracts the learner. There are cases when we do not want to upload the video content into those video streaming services. If this is the case, and we want to upload it directly to Moodle (Moodle has its own video player embed), we need to ensure that it is optimized in terms of its file size. We should consider that we give the best possible learning experience and if we use large video files, students should not wait and waste time to download or wait once the video is loaded. Also, we need to consider that e-learning may happen from any device from any location and we cannot assume that each and every location/user has (subscribed to) unlimited internet service (today's devices can shoot with really high quality but it doesn't mean that we should upload it directly without optimizing it for web-viewing). In video streaming environments, the content is pushed to the user automatically based upon the user's internet speed etc.

Usually created as: > Turn editing on > Add an activity or resource > RESOURCES > URL, File

Note: Pay attention that video-based learning material includes a note that it is a “Video”, which makes it easier to present different types of learning materials. Also, videos do open in a separate video (pop-up) and without YouTube general user interface which helps focus onto a video itself.

Note: If you use copyrighted material, please ensure that you are not conflicting with the rules of copyright.

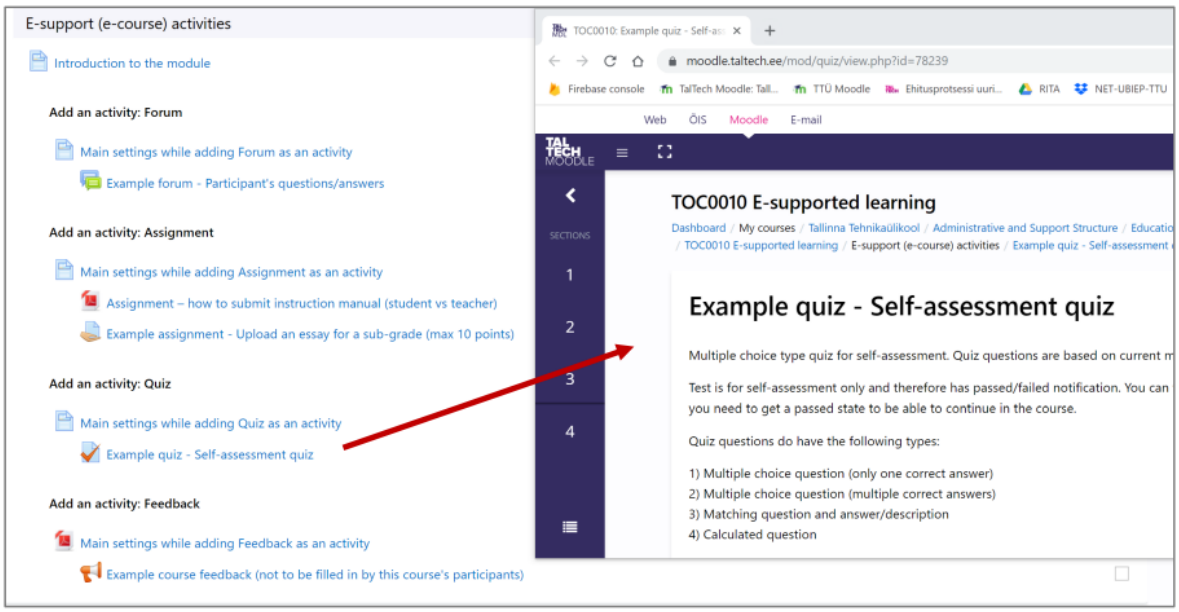
Self-reflection tools

Self-reflection

By using self-reflection, we enable students to have the possibility of understandinging the subject, topic, problem, source text, keyword, definition, audio file, video etc. The core idea of using self-reflection is to help the student to avoid common mistakes before the subject's assessable activities (ex quizzes, laboratory work, measurement, device setup, examination etc.). This can simulate/mimic an assessed activity but should be taken independently and the feedback about the attempt's success should be delivered automatically (so that the student can get immediate feedback). For example, a quiz activity can be created for self-reflection or as a graded component. Quiz questions should be built up in such a way that the teacher helps students to check the general understanding of common mistakes in an automated manner. This can be also taken as a prerequisite before the laboratory/independent work in contact hours. With this we can prepare the student for a more successful next activity. E-supported learning course should include at least one self-reflection possibility that covers most of the course content/topics. It is not mandatory to make it assessable (giving points from the course total).

If quiz is used, it is recommended that each learning module has its own self-reflection quiz. Quiz should include instructions, how to do it (we can't assume that all participants have made quizzes before). Because of this it is important to include a general guideline (especially important when the quiz will be graded) and sample material as to how quiz's questions (right/wrong answers) are evaluated. Quiz introduction (before any attempt starts) should include general information about the nature of the quiz. For example, what type of questions can be expected and how correct answers will be evaluated. For how long the quiz is opened and what happens if the student missed the deadline. Quiz sub-grade (points) or its passed behaviour should be clearly presented in the study guide and in the gradebook. If the quiz has pass/fail behaviour, then it should not account or affect the course's sum of points (grade) in the gradebook. And if the quiz gives sub-points, it should be in line with the course maximum grade (points). The only exception is when bonus points can be achieved and therefore the course final grade may be more than 100%.

Usually created as: > Turn editing on > Add an activity or resource > ACTIVITIES > Quiz



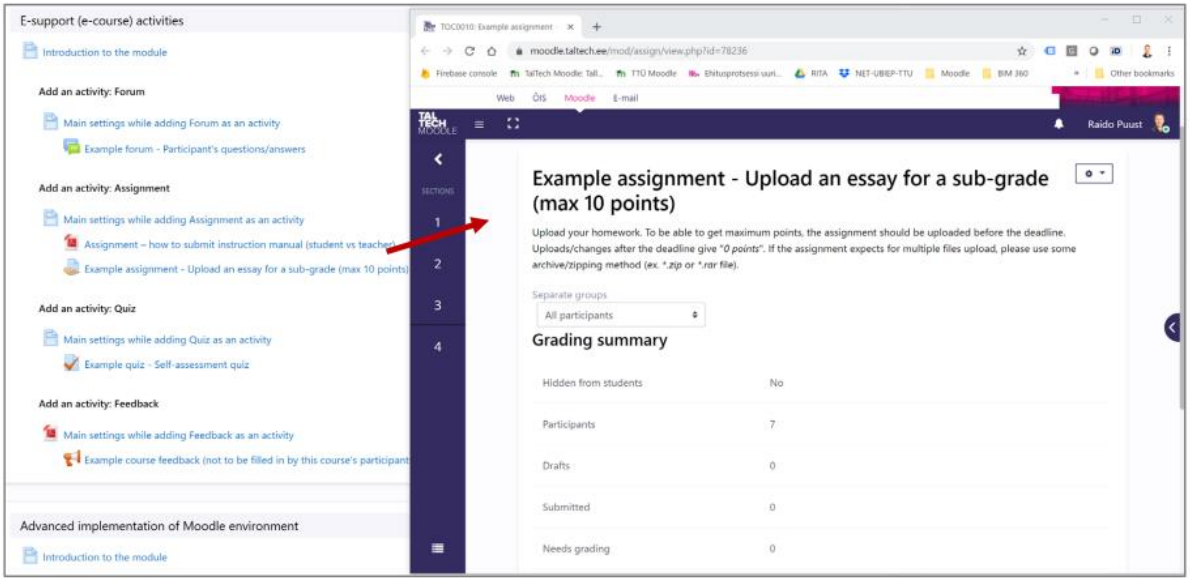
Note: After clicking a quiz link (Moodle's front page), description of a quiz is presented, which also includes information about how the evaluation is made.

Feedback

Assignment as an uploaded file/report

Topic/module may include different activities in the form of uploaded files. It can be a lab report, presentation, essay etc. Same principles apply here as for quizzes. It is recommended that an assignment is added based on topic/module layout. An assignment should have an introductory text that guides student how to present and upload this type of homework and if necessary, also a link/reference from where more guided information can be found (ex. study guide). It should always be noted what type of files are expected as uploads and it should follow the study guide, where different software packages are listed). If an assignment expects multiple uploads/files, then it is recommended to note that those files should be first zipped/archived (in form of (.*.zip or *.rar). Assignment landing page should include information about the deadline and additional note, what happens if this deadline is missed. If an assignment gives sub-grade (points) then it should align with the gradebook and evaluation criteria. If the assignment is passed/failed type, then the gradebook should not show any points at all (just a note about the passed/failed state).

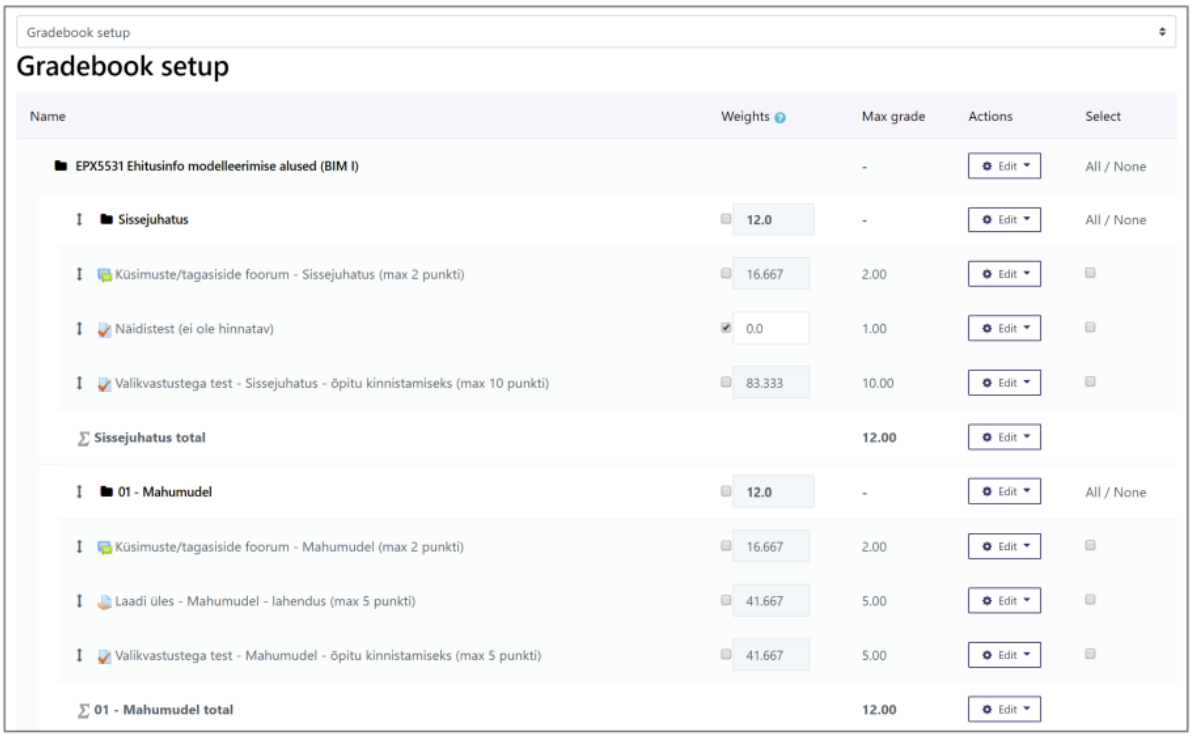
Usually created as: > Turn editing on > Add an activity or resource > ACTIVITIES > Assignment



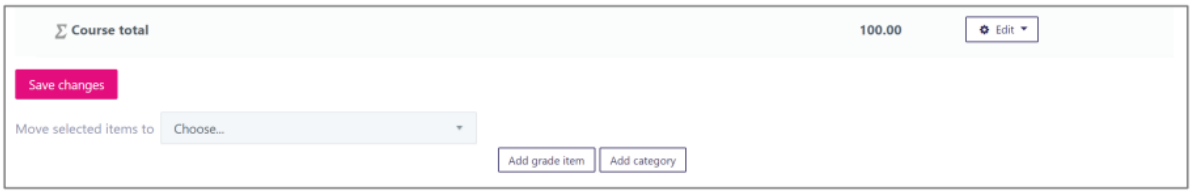
Grades, gradebook setup

Moodle courses always show gradebook. It is important that it follows the evaluation criteria and can be easily understood (100% scale is used as a maximum grade). If the complete grading (before the transfer to study information system) is not happening in Moodle (for example in case of classical exam) then the Moodle gradebook should mirror also that kind of situation. It doesn't mean that we have to always input the final grade into Moodle but if the exam doesn't give 100% of final grade, then Moodle activities and exam (or other contact hours activities) should give summed up value of 100% (or points). If all activities in Moodle are passed/failed type (including quizzes) then the gradebook setup should mirror that as well.

Setup from: > Gradebook setup



...

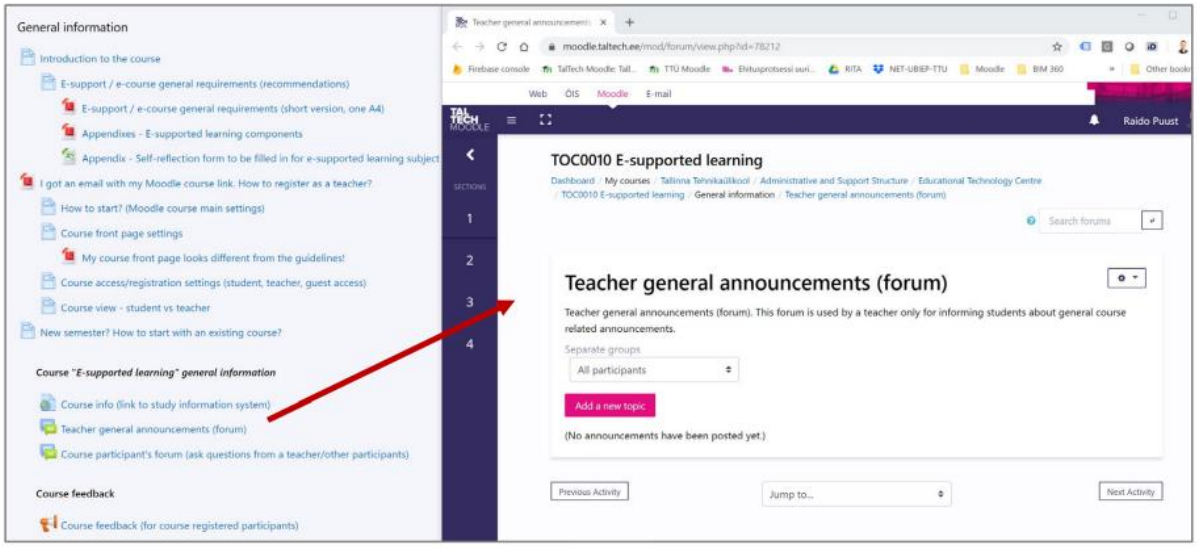


Note: Pay attention that grading components are divided into several categories, so that a student can more easily follow how they have performed. At the end of the page you can see the Course total and this number should reflect the true number from the course (usually as 100% or 100 points).

Teacher's announcements

General information or introductory module should include a possibility where the teacher shares course related general information in the way that copies of the messages are automatically delivered into the student's email address. At the same time those announcements should be accessible through a course landing page (a link to a webpage/section from where those can be found in historical order). For example, a forum activity can be used. The main scope of this activity is to give a possibility for a student to get up to date (current) information during the course participation. If a forum activity (or equivalent that gathers discussions, announcements, questions, answers in a structured and searchable way) is used, it is important to describe its purpose. If alternative ways are used, they should be clarified in the study guide. It is important that this is not messed up (merged) with student-student or student-teacher-student type of discussions/activities.

Usually created as: > Turn editing on > Add an activity or resource > ACTIVITIES > Forum

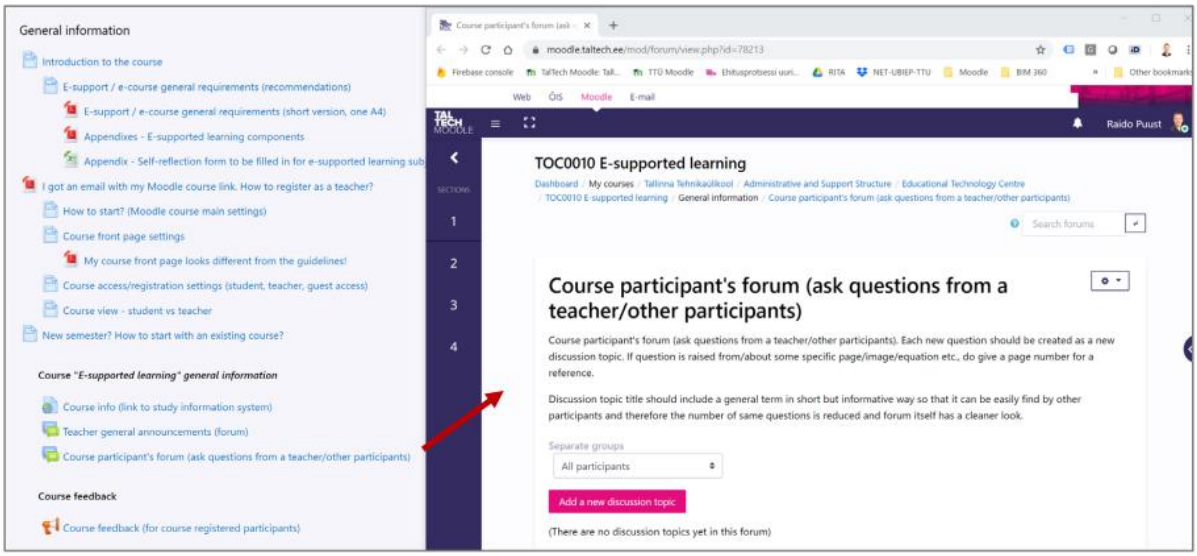


Student's questions/answers

The course should include at least one activity (place, location) where a student can publicly (available for other course participants) ask questions and/or answer to other's questions. History of those questions/answers should be saved during the course participation and its content should be easily searchable (ex. by a keyword). The key outcome of this activity is to give a possibility for a student to ask questions in between contact hours, once they have come across problems / issues / misunderstandings during their self-learning process.

For example, forum activity can be used. Descriptions should be added how to use it (also applies for other methods that are chosen instead). It is important to mention if that specific activity expects some specific workflow (for example if posts/questions/answers are graded).

Usually created as: > Turn editing on > Add an activity or resource > ACTIVITIES > Forum



8.2. Enrolment to Moodle course

Note: It is not possible to add course participants manually due to EU data protection rules. If somebody was added to the course with a manual enrolment method, which can't be used anymore, it is possible to remove that user through course reset function. It is important that by doing reset, you are not removing current teacher(s), because then it is not possible to access your course and you will have to contact TalTech Educational Technology Centre.

Let's look, how a typical registration procedure will look like.

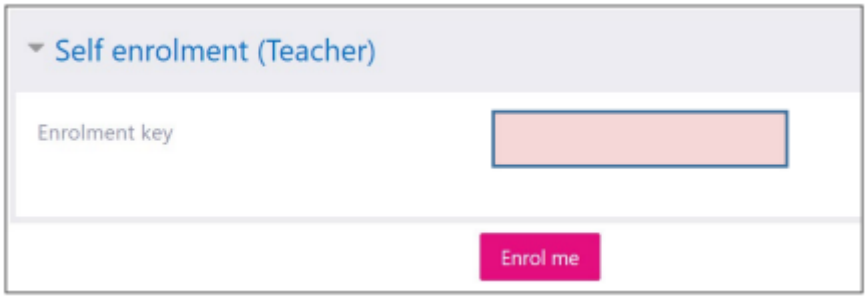
Teacher's viewpoint

Once a course page has been created, the teacher will get an email through which they can access the course enrolment page.

For example: https://moodle.hitsa.ee/course/view.php?id=22151 (and example link which is not meant to be used in this example – please follow example images and click on a link that was shared with you by email).

Note: Pay attention that before you click on this link (that has been sent to you), you need to be logged into Moodle. Thereafter you can come back and click on the link. All courses are visible by default. Visibility means that course name can be searched but you as a teacher control when and how your course will be accessible and how participants (students, fellow teachers) can register for the course. The course is visible mainly because otherwise you as a teacher cannot register for the course!

After logging into Moodle and opening the link that was shared with you, the following section should be visible (please note that the name of the enrolment method could be slightly different, but you should make a difference, how you as a teacher can register):

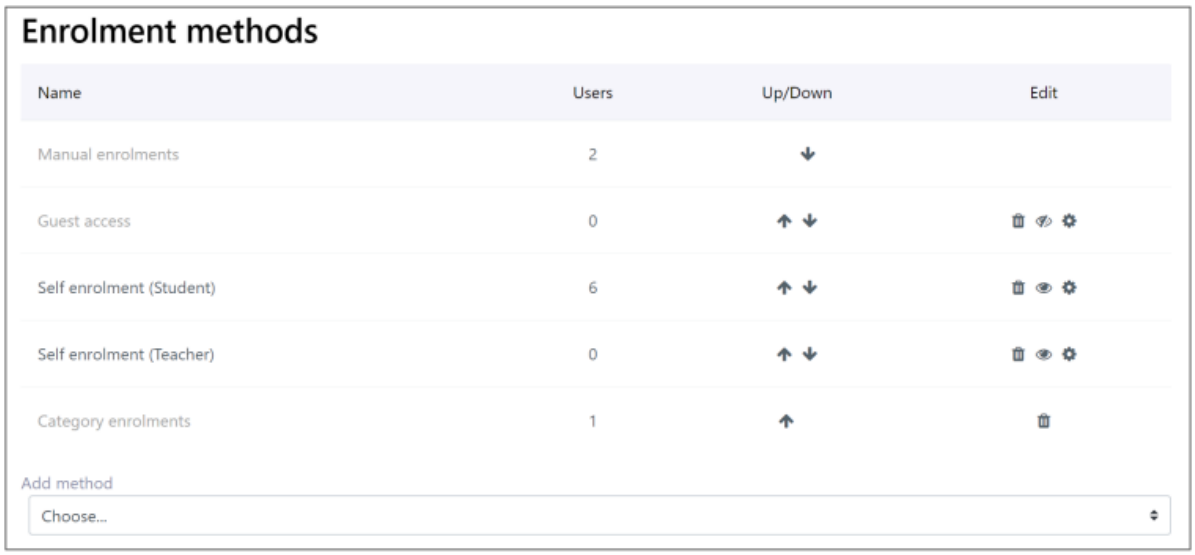


With that same e-mail you get a unique enrolment key that enables you as a teacher to become a course participant as a teacher (this enrolment type has been prepared by Education Technology Office). If you need to add other fellow teachers to the same course, you can share the same enrolment key with them as well. Copy/paste the shared enrolment key to the box shown in the upper image.

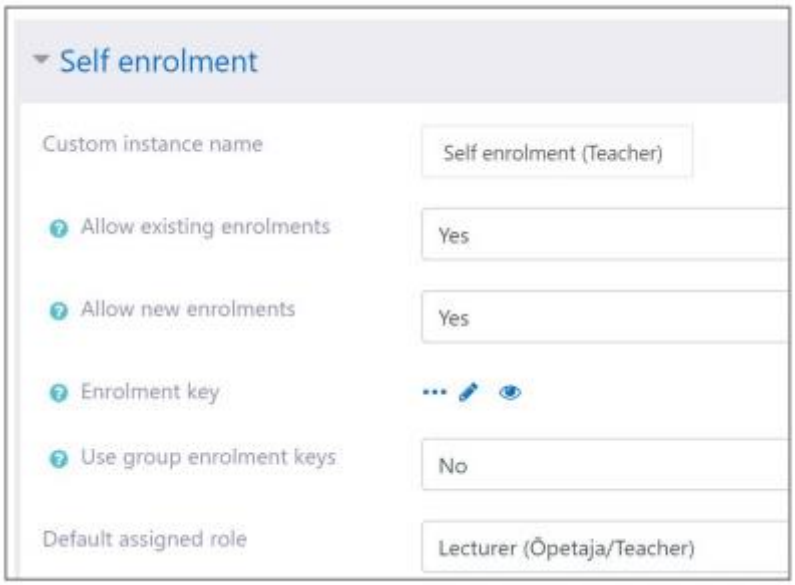
Click on Enrol me. You are now successfully registered to your course as a teacher and can start to create/modify it!

Student's viewpoint

Teacher's registration option to the course is defined according to same principles as with students. If you select Enrolment methods, you should see the similar page as below:



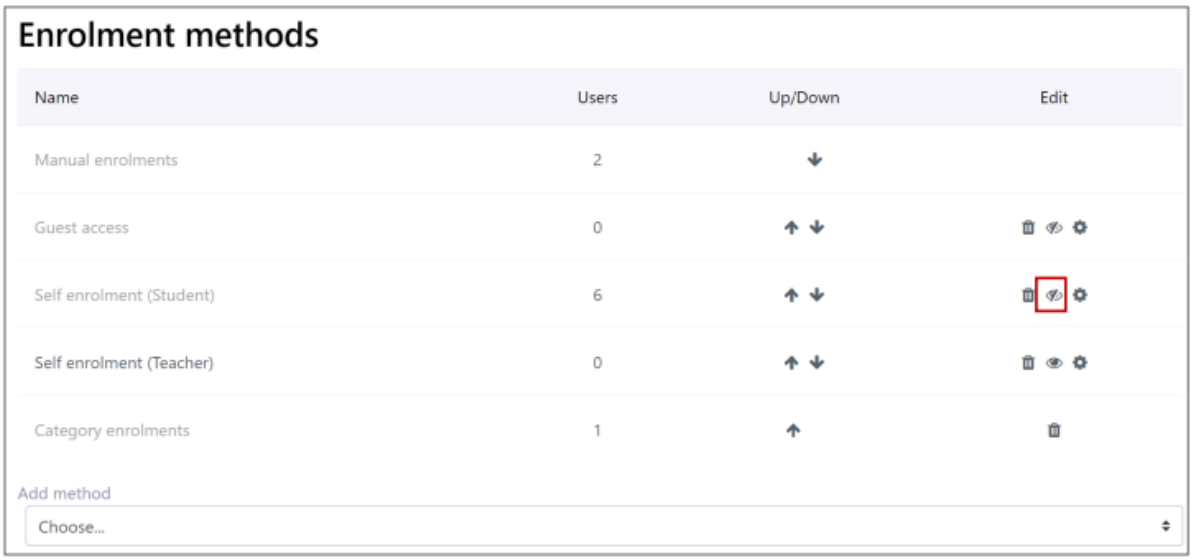
You may see the section Manual enrolments, but it is hidden (greyed out). With new course pages it is removed by default as this method cannot be used anymore. If you ordered the new course page, you should also see a method that is created for teachers (it can be named differently as in previous image, but still recognizable as a teacher's option). If you now click on a wheel at the end of teacher's enrolment row, you should note the difference, how this method targets teachers and not students.



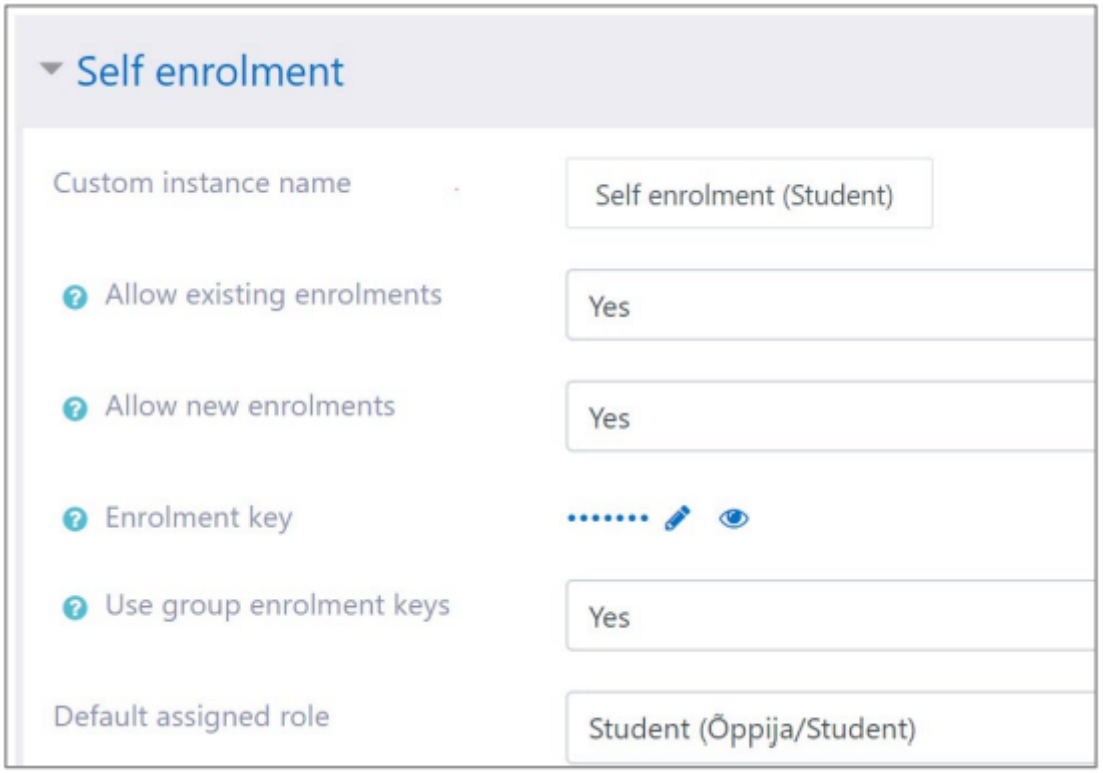
Remark: Pay attention to the Default assigned role as it relates to teacher's role in the course and therefore Enrolment key should not be shared with students. Move back to the previous page.

By default, you should also find one enrolment method that is meant for students. If you do not see one, you need to create one, please check those guidelines from the TOC0010 course page.

This method is usually hidden if the course page was recently created. Therefore, it cannot be used by students.

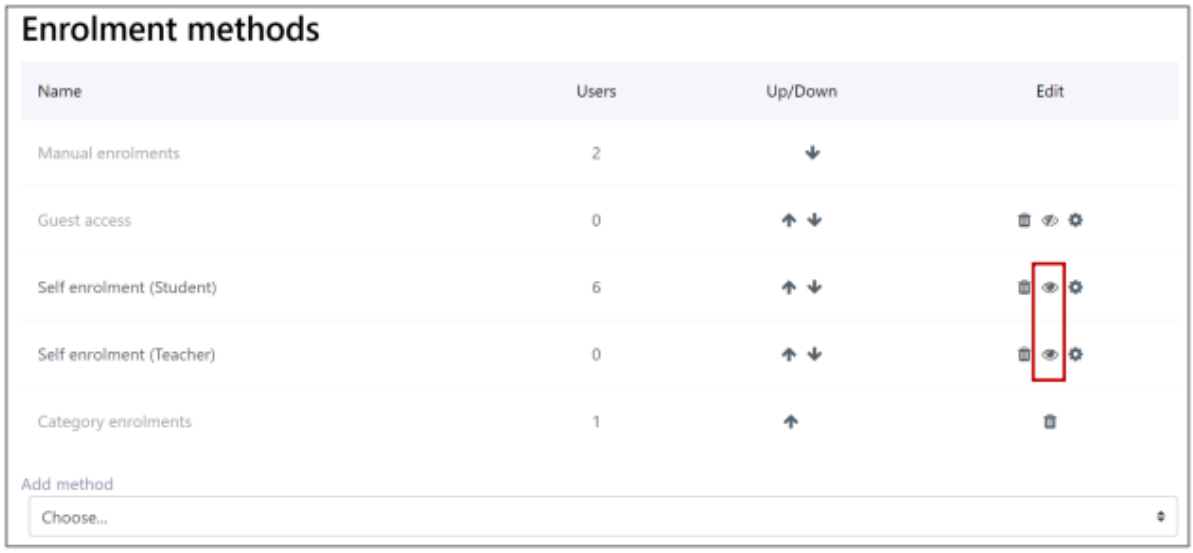


Before you make it active (from an eye icon), please check the main settings for this enrolment method and make changes as needed. Click on a wheel icon.

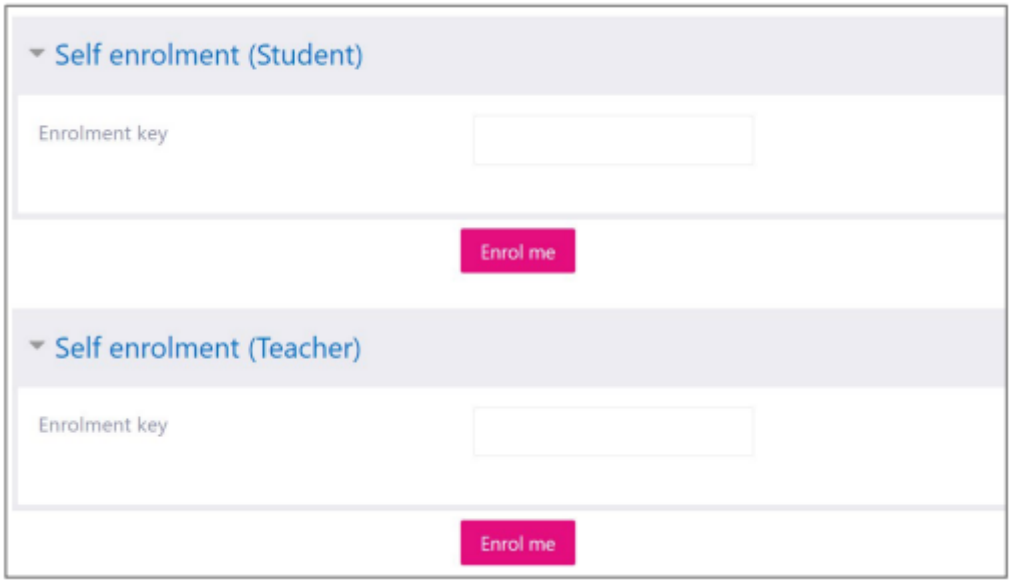


Add an enrolment key and ensure that Allow … enrolments are set as Yes. Save the settings (below the page) if you made any changes.

Remark: If both methods are active at the same time (student and teacher), meaning that you click on an eye icon (the row is not greyed out anymore), it may confuse students, because they see different types of enrolment options (also enrolment keys should be different).



When both enrolment methods are open, and a course link is clicked, the following information is shown:



This may confuse a student, as sometimes those methods may not be named as clearly as possible. But if even one user (teacher) has been registered by one or the other method and you hide that method, you remove his/her access to the course as well (for example, you have decided to hide the method from an eye icon). If there is another teacher in the course (registered through a manual method for example), they can reset the method (make it visible again). In all other cases, you as a teacher should contact the Education Technology Office.

Important remark: Pay attention that you can delete enrolment methods through a special garbage pin icon. By doing this, you are also removing all users from the course who have enrolled through this method. If you want to start the same course in next semester, you should use the reset function (check additional guide).

Moodle course settings, selecting editing mode

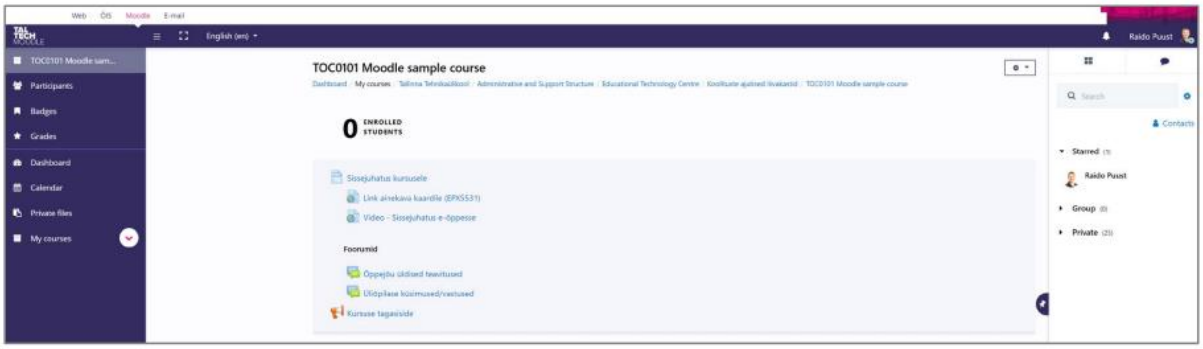
After getting access to your course's Moodle page, you can see it from your Moodle dashboard (after logging into the Moodle environment). You can edit course main settings from the settings page. For example, you can edit course format, add course introductory text (which is visible from the course´s list and helps to market your course without being enrolled to the course).

In the typical course front page you may see some premade links, which help to start editing your course more easily (but please check carefully that those default links are really valid for your course and if needed, change accordingly).

8.3. Moodle course settings, selecting editing mode

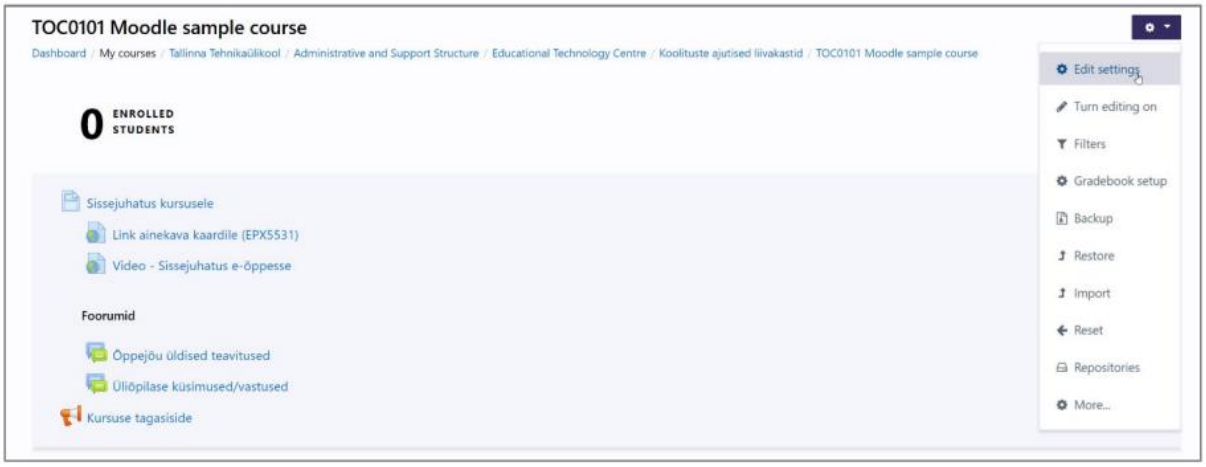
After getting access to your course's Moodle page, you can see it from your Moodle dashboard (after logging into the Moodle environment). You can edit course main settings from the settings page. For example, you can edit course format, add course introductory text (which is visible from the courses list and helps to market your course without being enrolled to the course).

Typical course front page may look like the following image. You may see some premade links, which help to start editing your course more easily (but please check carefully that those default links are really valid for your course and if needed, change accordingly).



Pay attention that in the middle of the course page, so called topic format is used. You can present your course in different ways. For example, you may prefer to use weekly format. In both cases, please note that there are additional blocks on the left and right sides.

Main setting can be accessed from the top right wheel icon.



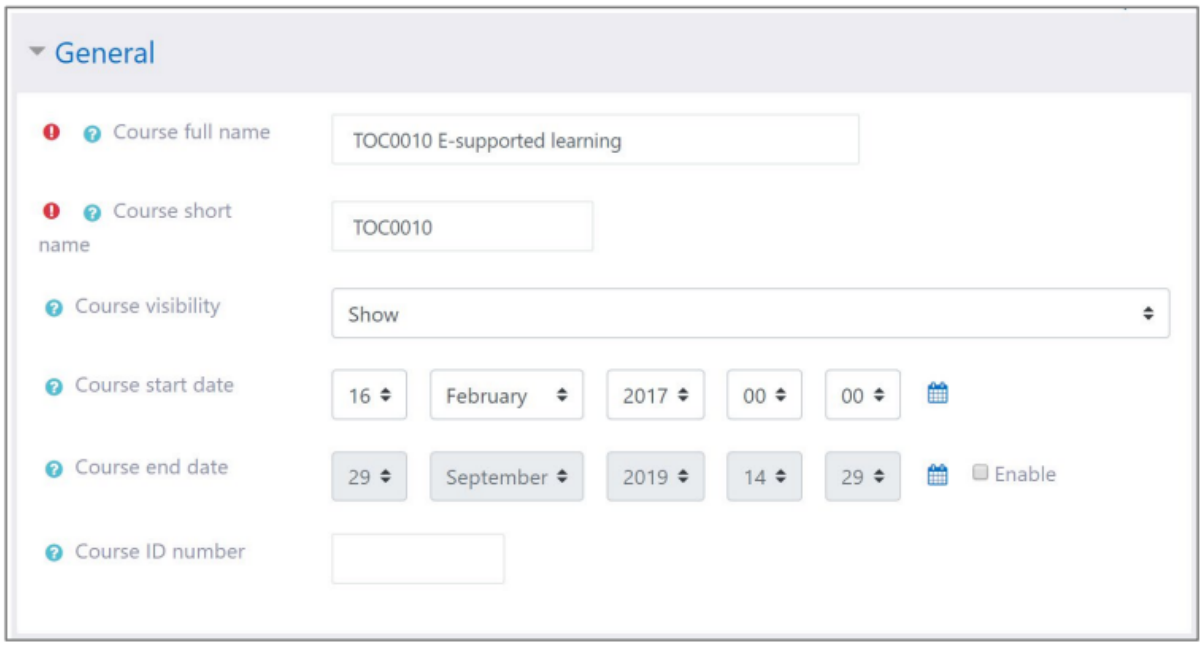
You should check the course main settings right in the beginning (although you can tune those up later). Once you click on the button Edit settings, a new page is opened, where you can see several subsections that hold course main settings. Let's look at them.

From the section General you can find settings which were created during the creation of your course page and your course full name and course short name were compared to the information in the study information system. Please do not change those (even the format in which they are written). By format we mean that all courses are named in the same manner as all our university courses. The standard format is: SHORTNAME "space" COURSE FULL NAME. You cannot

change the course category (where it belongs), which is why it is important that you give such information as well while ordering a new course page. If you need to change that, please contact the education technology officer.

• Visible - by default your course is hidden. If you want to share it with your students, you need to change this value to Show. Then this course is visible to all who navigate in the course list, but it is not automatically accessible, because this is defined separately and explained later. Please note that you keep your course always Visible, once it is finished (even after the semester ends). Otherwise, if you hide it afterwards (for example for spring semester), it can be moved into archived folder, because it is assumed that this course is not used anymore. You can change the access code but keep the course visible (searchable).

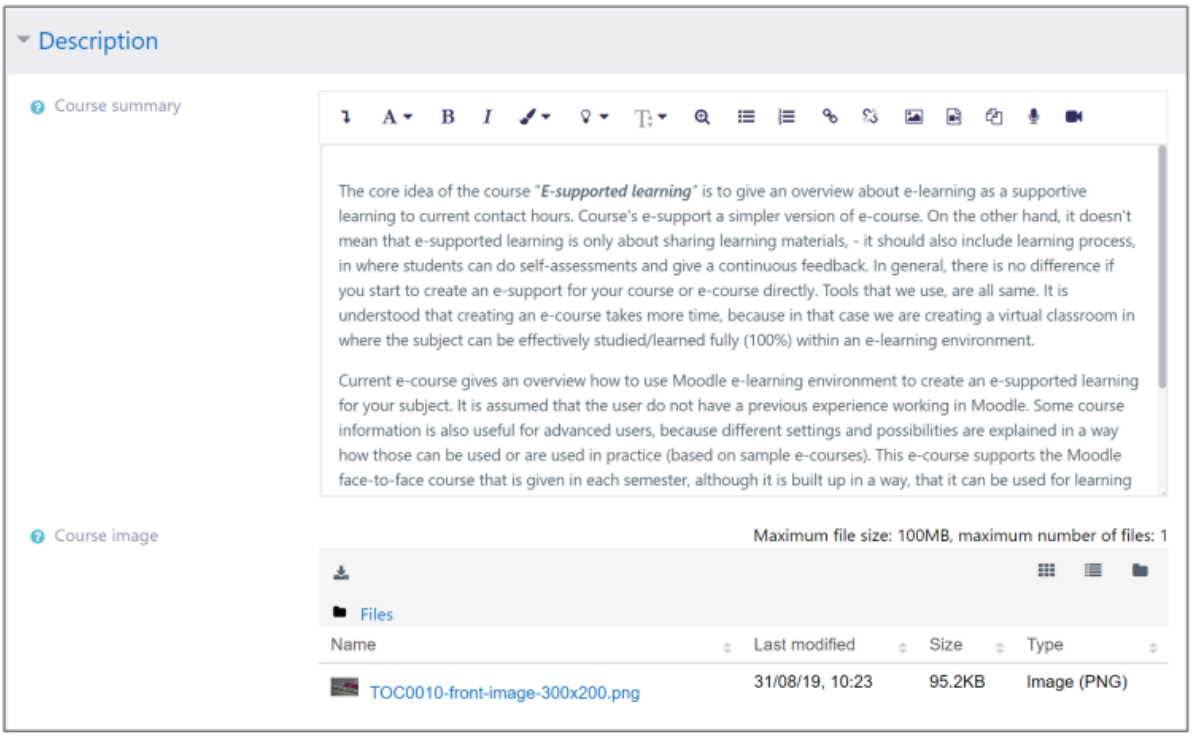
• Course start date - if you use weekly course layout, you can give a course start date like semester's week 1 start date (or week 9 start date). If you do so, then the weekly format's date ranges are automatically calculated. This is not a big deal but sometimes you may like to have such an automated way. For example, if you have a topics-based course layout, then this value is not important.



In the section Description you can describe your course to the wider audience. It has been mentioned also as a requirement of e-supported learning.

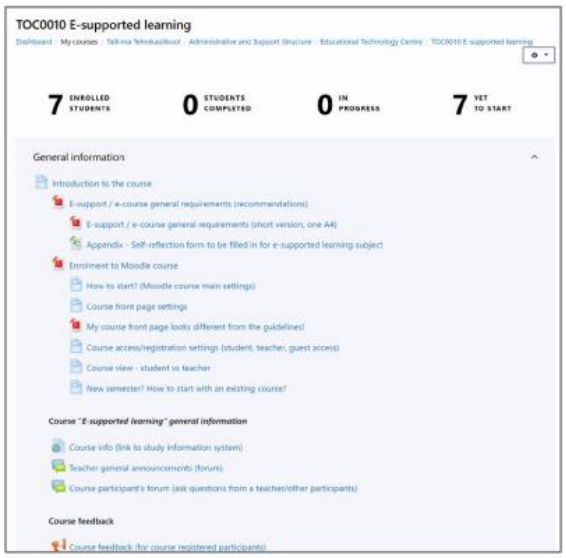
• Course summary - you can edit this area as a web page or by simply adding formatted text. By a web page we mean that you can also add an introductory video, images etc. This information is public to all if the course is visible and searchable. Therefore, this text should be written as an appetizer for your course, why students or participants should be interested about it. This is free form text, not a copy from study information system or study guide. This text gives a first impression about all courses that are visible in the university's Moodle webpage. While formatting this text area, please take into account the general colour system that our Moodle courses have. Avoid using lots of colours or lots of over formatted text (bold, too many paragraphs etc.).

• Course summary files – you can include a small image file, which is shown once the list of courses is presented.



In the section Course format, you define how you want to present your course, or build up. You can change those settings later (even after you have finished building your course). By default, for course format: Weekly format is used. This means that you are simulating an e-learning in weekly format and perhaps following exactly your contact hours topics/activities etc. The other most used option for course format is: Topics format. This helps to build your course, for example, based on learning outcomes or simply by describing a course through 5 or 10 major topics.

• Format - how the course is presented. In addition to options, you can also pick Grid format, which is meant for a more visual learning experience. In that case, all topics are hidden behind the cards and once you click on some specific card, topic in its entirety opens. This option is also smart device friendly and reduces the need to scroll the course´s first page in longer courses.



„Topics format“

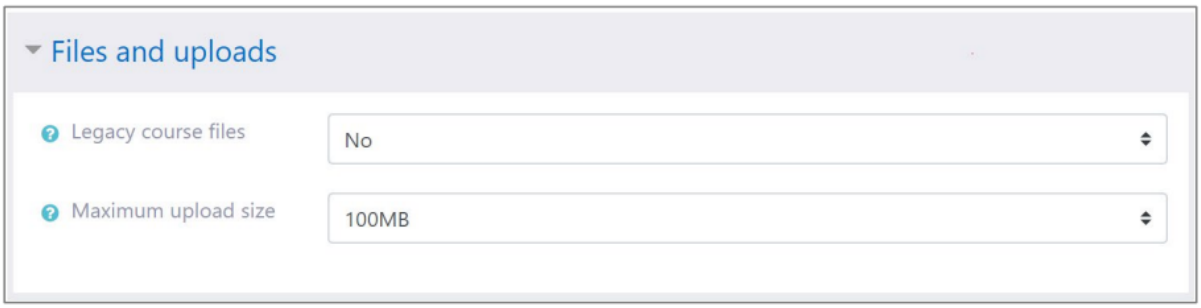
„Grid format “

In the section Appearance you can define in which language your course user interface is shown. In some cases, it is recommended to keep it as Do not force, which means that student can change it for that course independently. In general, it is recommended that if the course is given in Estonian, then the language is set to Estonian as well. And if it is given in English, then this setting is English as well.

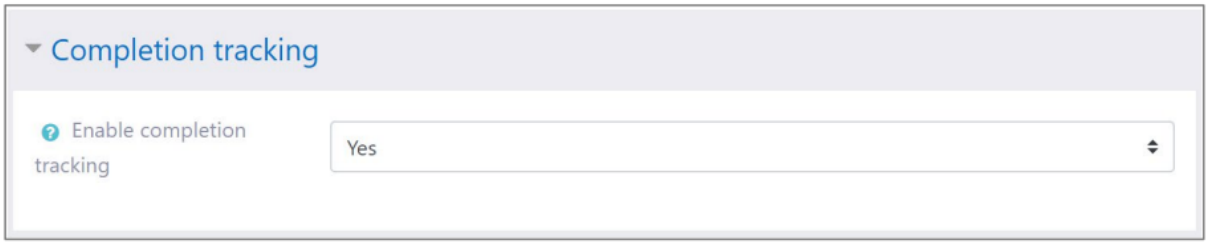
Remember this option changes only the user interface language (for you as a teacher it is also more convenient to work in the English environment if Estonian is not your main language, or some other languages that can be also picked up).

• Force language - defines the user interface language while working in your course.

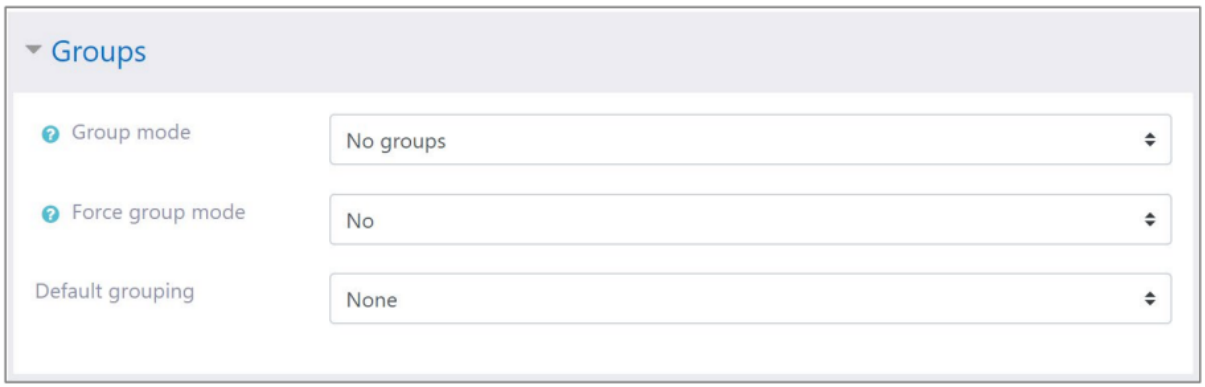
In the section Files and uploads you can define the maximum size for uploads in your course. By default, it can be 100MB, but you can change it. Sometimes it is important to make it smaller to limit what students can upload (meaning that they do not share just any file but think a little and optimize it before uploading it). This setting affects also teacher's ability to upload larger files to the course. The limitation is file based (can be for example one file, or archived file that may include several files in its container).



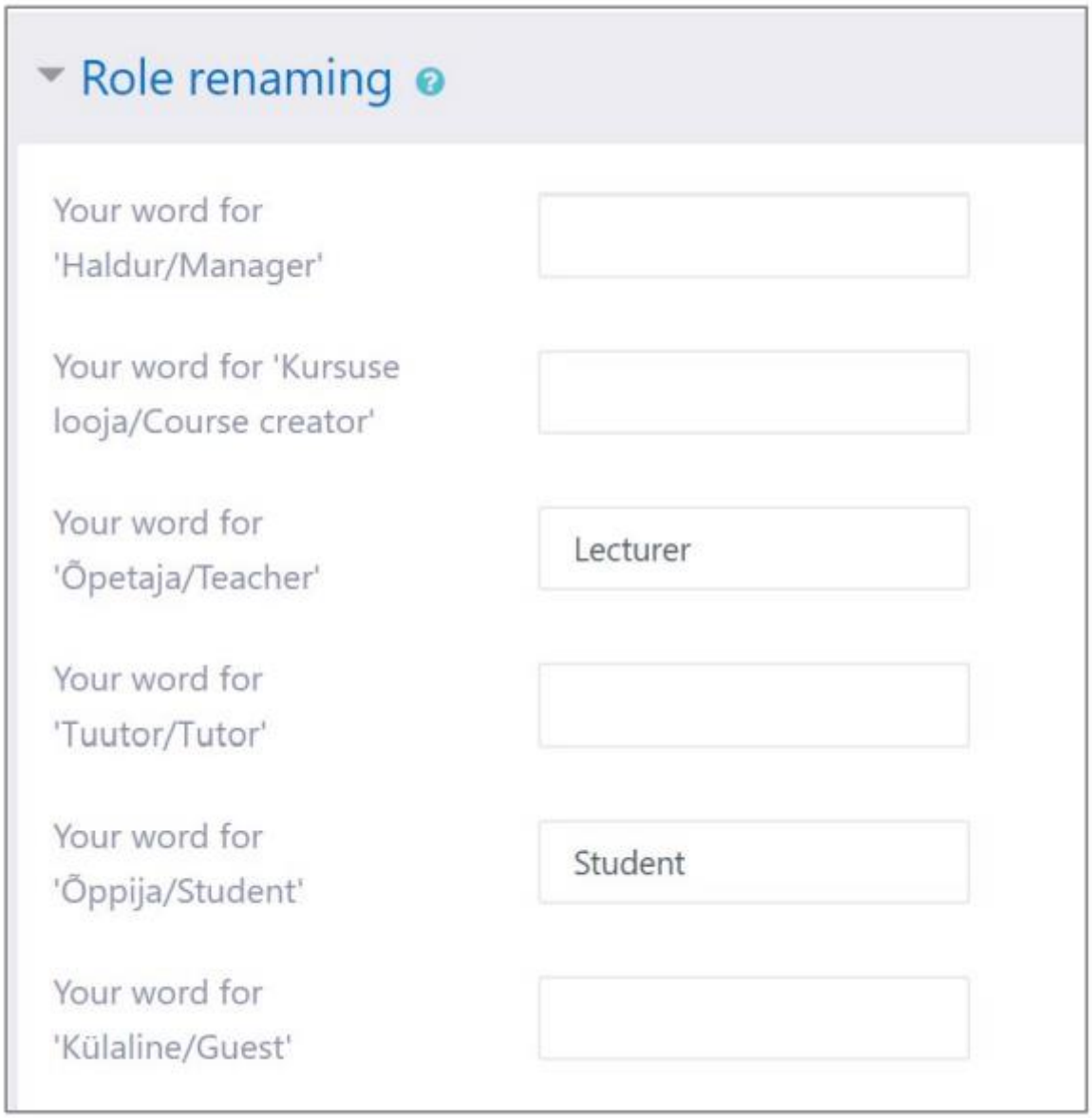
In the section Completion tracking you can change how your course can be taken/passed. For example, if the course completion tracking is active (setting: Yes), it is possible to demand student to first work on some specific material/activity and before it is not fully passed (completed) she/he cannot access or move forward in the course. This is a more advanced course build up parameter and needs settings to be done also in other course parts, therefore you can change that setting at any time, and make additional steps later in the course development.



In the section Groups you can define if you want to divide course material between different study groups. This option helps to build and offer one course to several groups of people (including in cases when groups are based around different teachers, for example in labs). Groups setting simply enables to divide learning materials based on a group name (this is defined in a separate location) and as such if people are entering into the course under some specific group (this can be controlled through enrolment key) they see only relevant course materials for that specific group (or that which was prepared by their group teacher). Please also note that you can always have course materials available that are universal to any group and some materials that are available only for some specific group. Here we are not yet activating the group mode, it can be changed later.



In the section Role renaming you can give other names for different roles in your course. By default, Estonian equivalents are used. But if you give your course in English, then it makes sense to change those. At minimum we are talking about Õpetaja/Teacher = Lecturer and Õppija/Student = Student. This is free form text, but some common role name is recommended (Lecturer or Teacher, etc.).

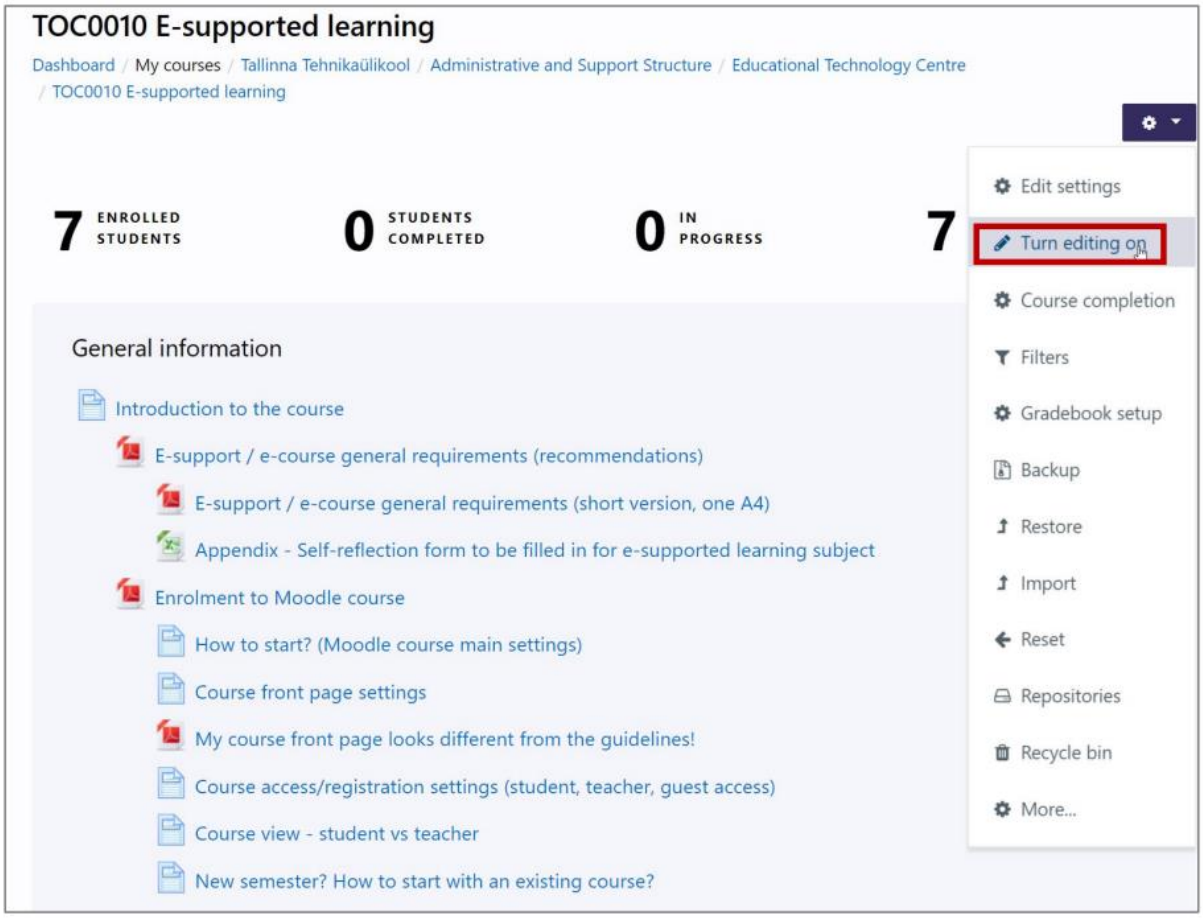


In the section Tags you can characterize your course by different tags. This can be used as tags cloud on your course page, but quite often it simply doesn't have its use cases, because your tag is too specific, and it doesn't merge with others. Perhaps in the future it can be searched by that specific tag (or tags) and also course related information, right now it can stay empty.

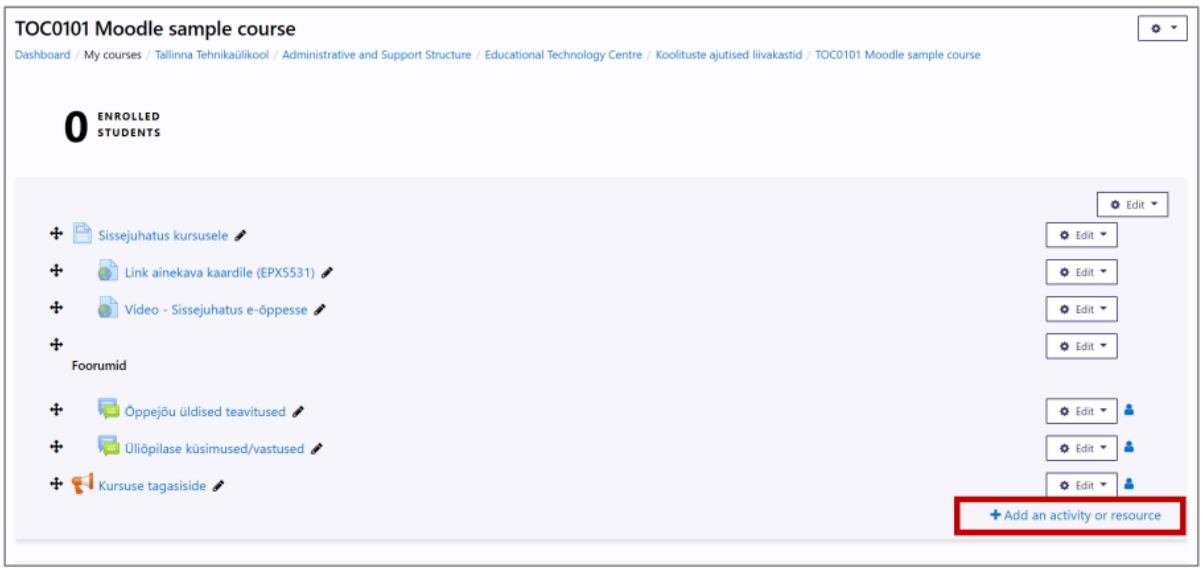
To save all settings and going back the course front page, click on the button: **Save and display**.

Selecting the editing mode

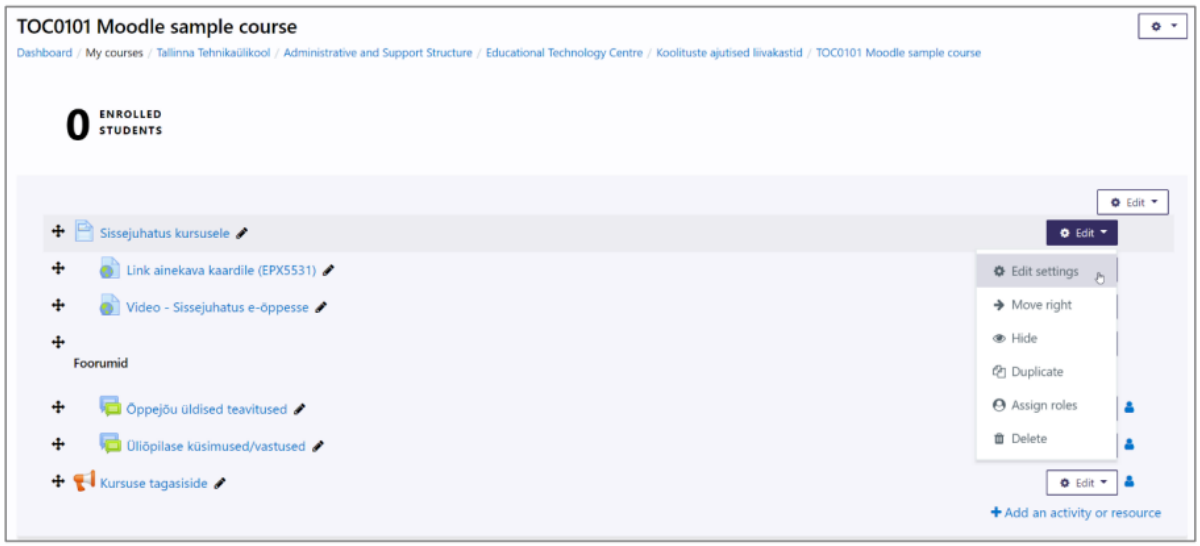
To be able to change the course front page or other settings or to add course materials (resources, activities), you must activate the editing mode. You can find this from the main selection menu: **Turn editing on**



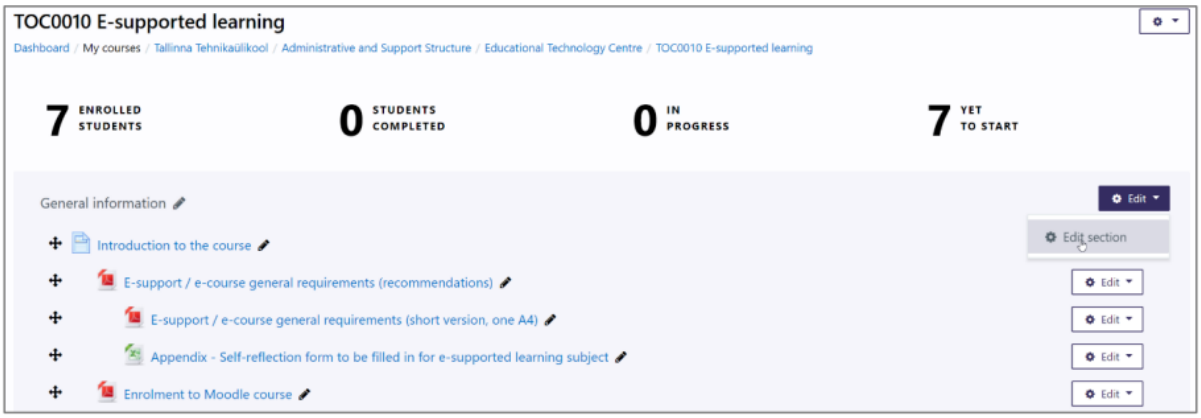
Pay attention that your course visual changes. By enabling the editing mode, you can start adding different type of resources or activities to your course. You should see a common link for that: **Add an activity or resource**

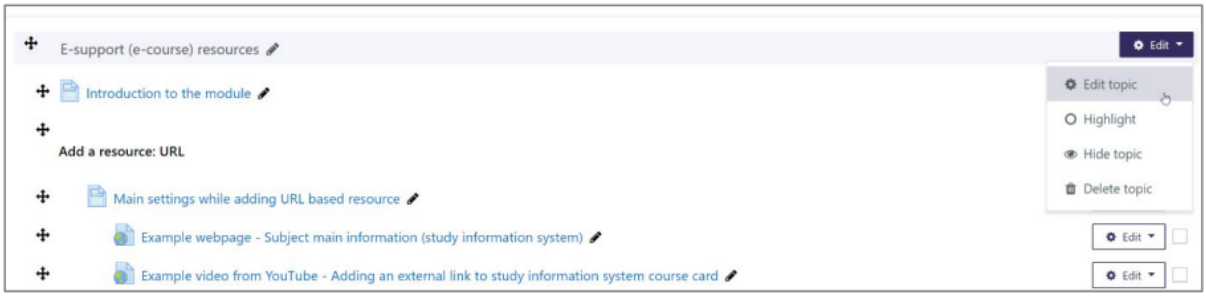


In addition to this option, pay attention to **Edit** buttons. These enable to change current resources/activities.

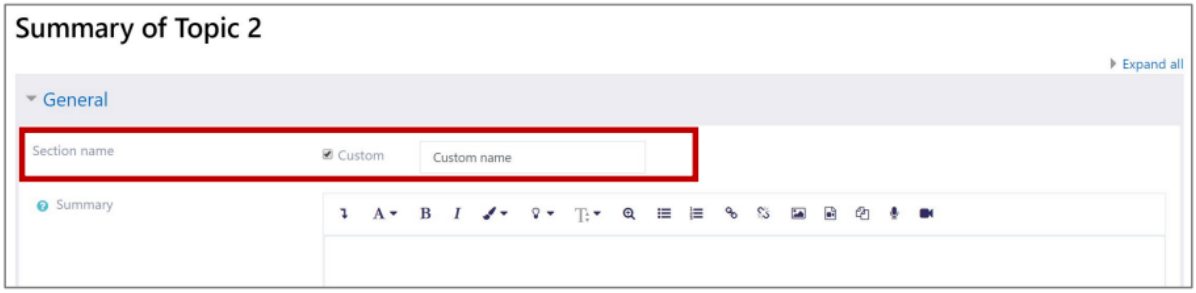


In addition to resources/activities you should also note one additional **Edit** button, which is located at the end of topic name row (in the current example: **General information** and **E-support (e-course) resources)**.

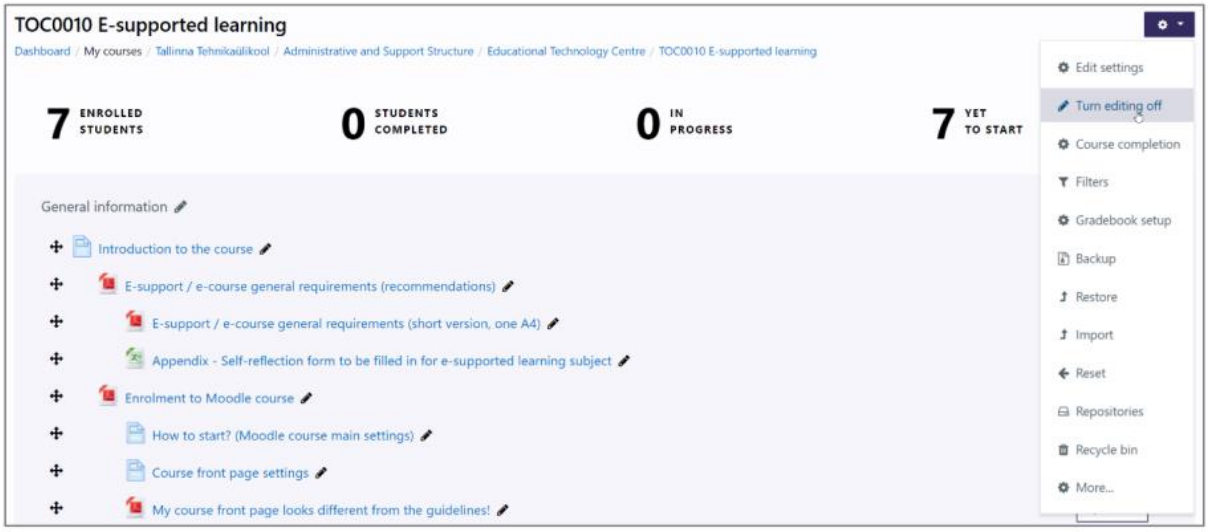




This **Edit** button enables to change the module visual, including the module name. By default, those can be Topic 1 or Topic 4. But after clicking onto Edit, you change the name by adding a mark to the Custom box and type in a new name.



To exit from the editing mode, you need to click on: **Turn editing off**

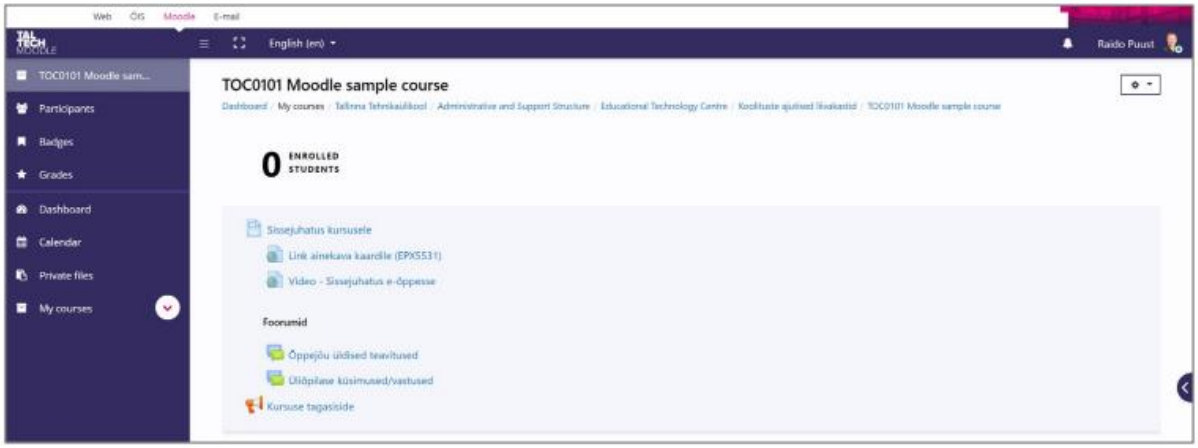


Summary

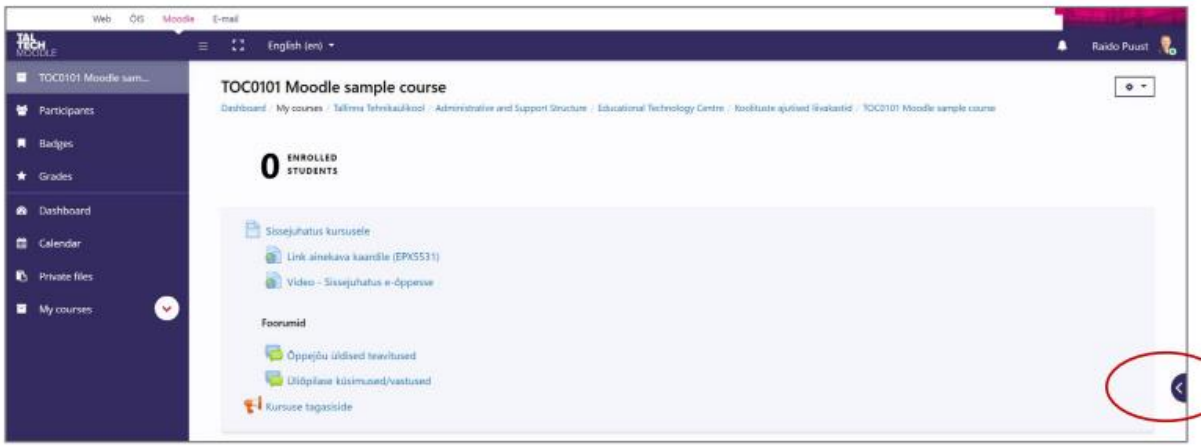
After finishing up with your course main settings you are now ready to focus onto course content. If you need to change those main settings later, you can do that exactly in the same manner as before. Just select **Edit** settings and do your changes.

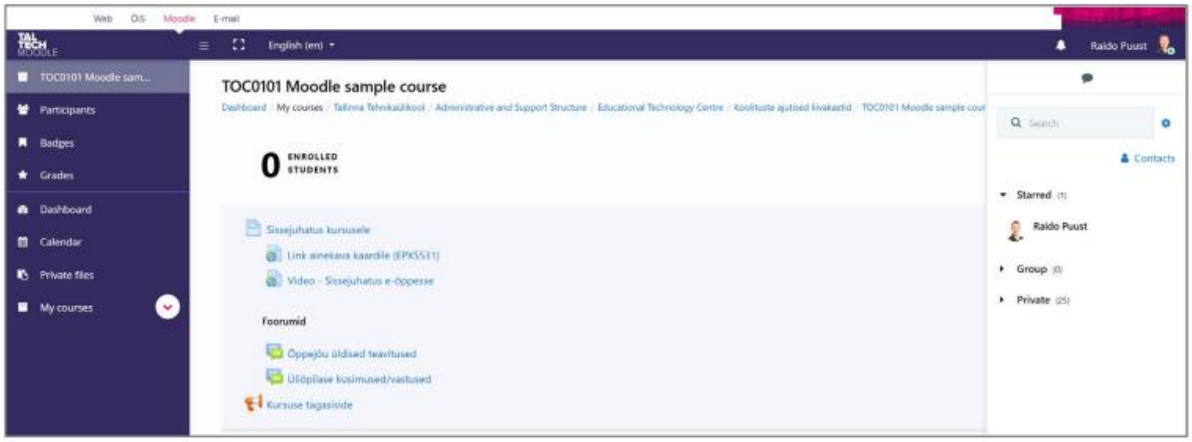
8.4. Course front page settings

Typical course front page (after its creation) looks like in the following image. In the centre column you can see course main content. Right side shows some general shortcuts (ex. participants, grades, calendar etc.). Right side can show other different blocks, which show additional information about the course (ex. News/posts, notifications) or can give a quick Access to some additional functionality.

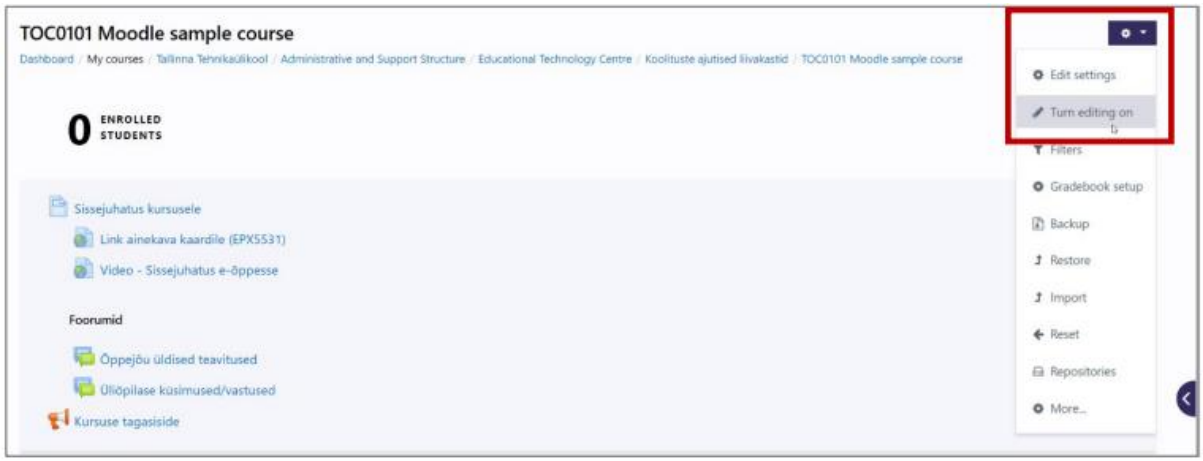


By default the right side may be hidden. You can show it by clicking onto an arrow.

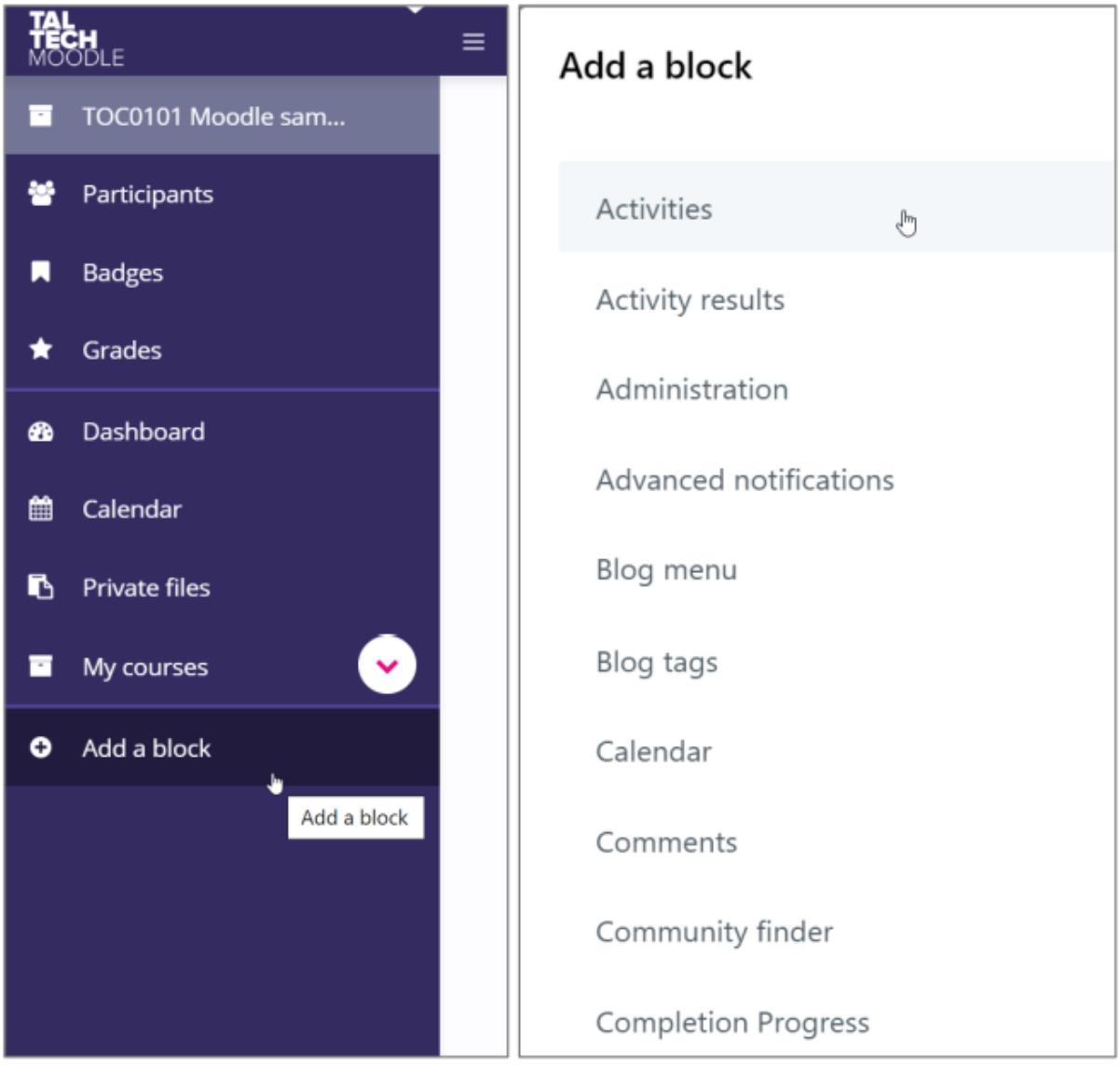




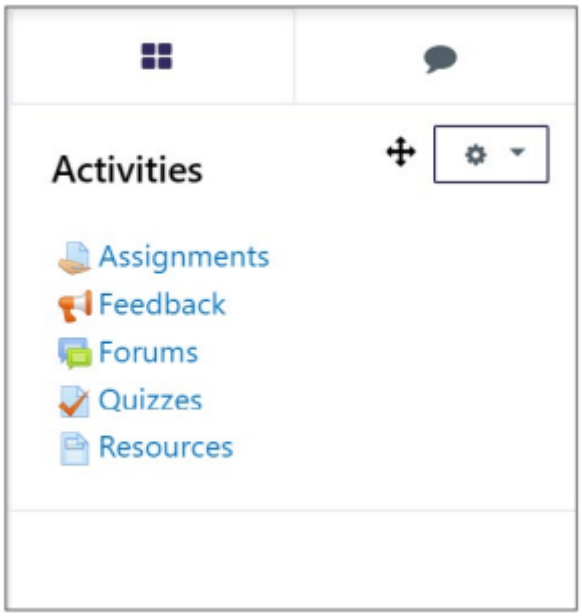
If you want to change the right block, you need to enable the course editing mode first.



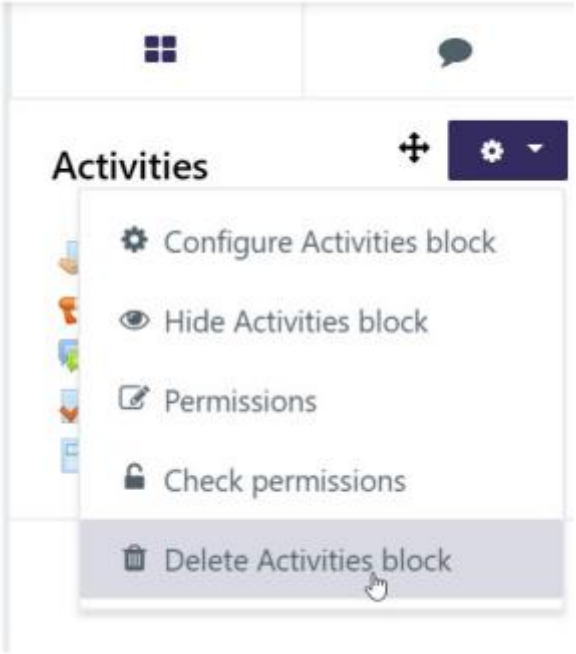
Then you can select from the left menu block an option: **Add a block** and then selecting for example Activities.



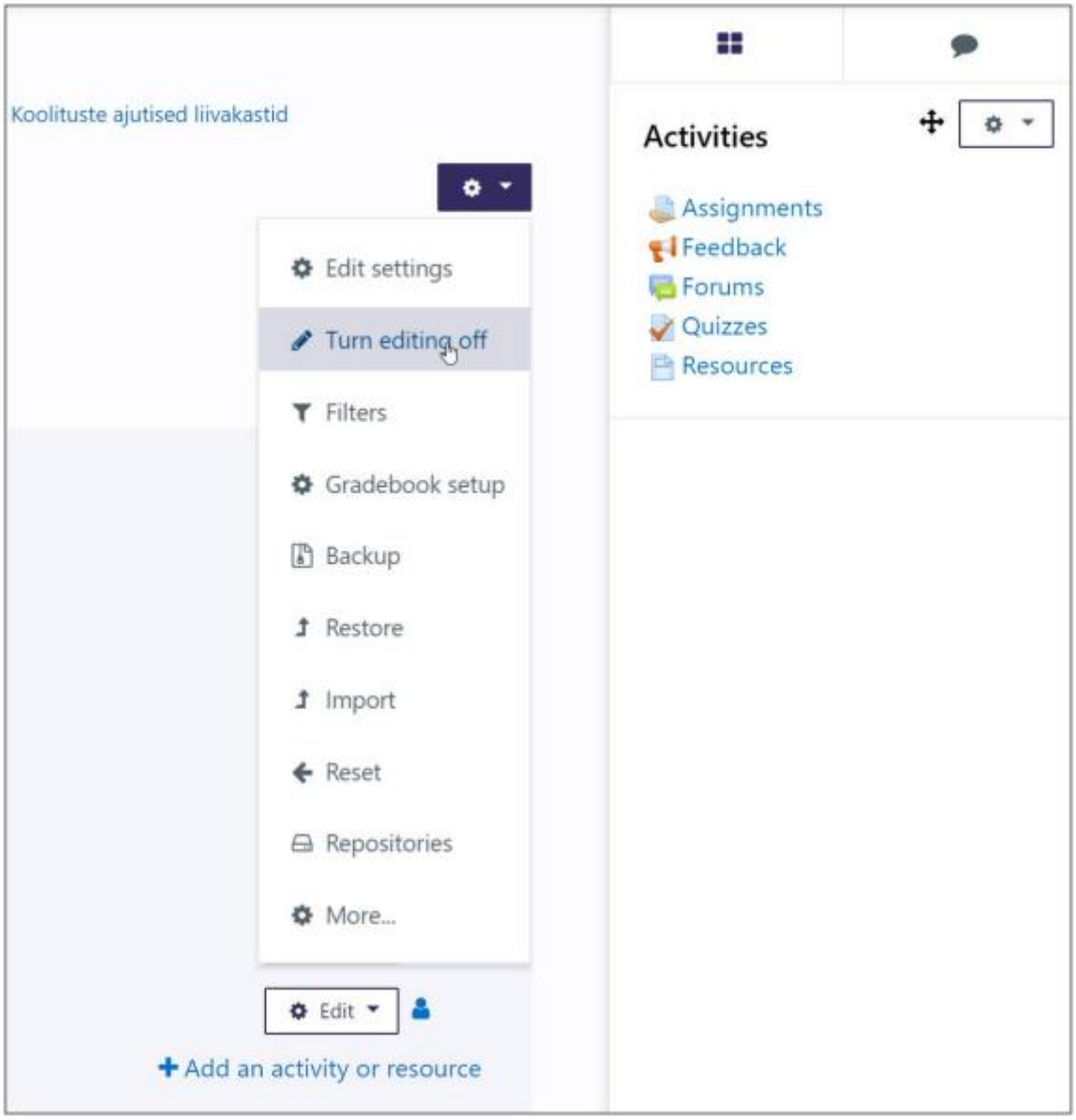
If you check the right side again, you should see a new block.



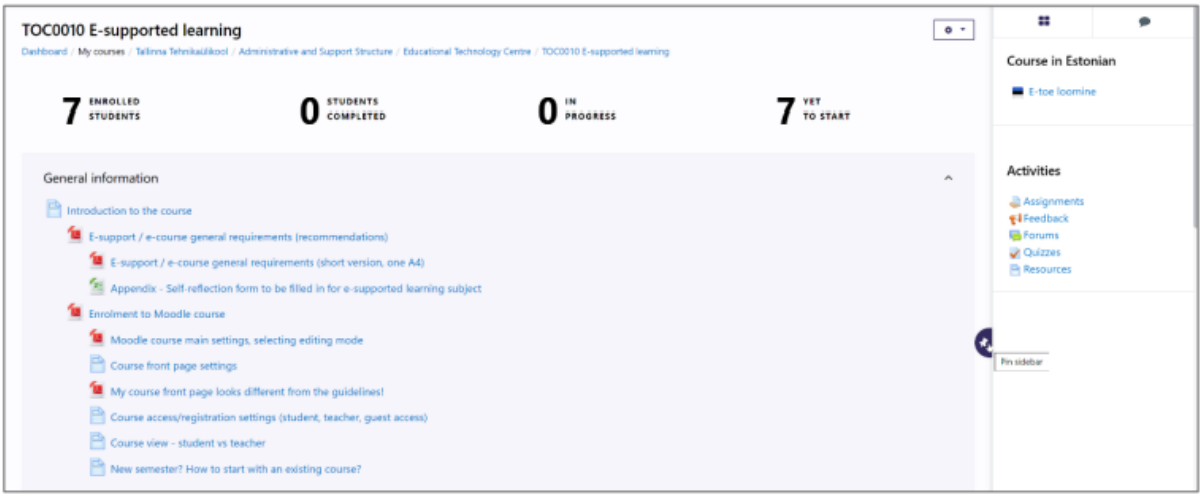
You can edit the block settings from the wheel icon (for example, you can hide it or delete it – by deleting a block, you are not deleting the content but only additional references).



Once you have finished with adding various blocks, you can exit from the editing mode by clicking onto: **Turn editing off**



After adding some block to the left side, you can decide if those are always visible. To be able to see it always, you click onto a pushpin icon. Just in the same manner you can hide this side as well. If the side is hidden, you can always see it once you click on the arrow.

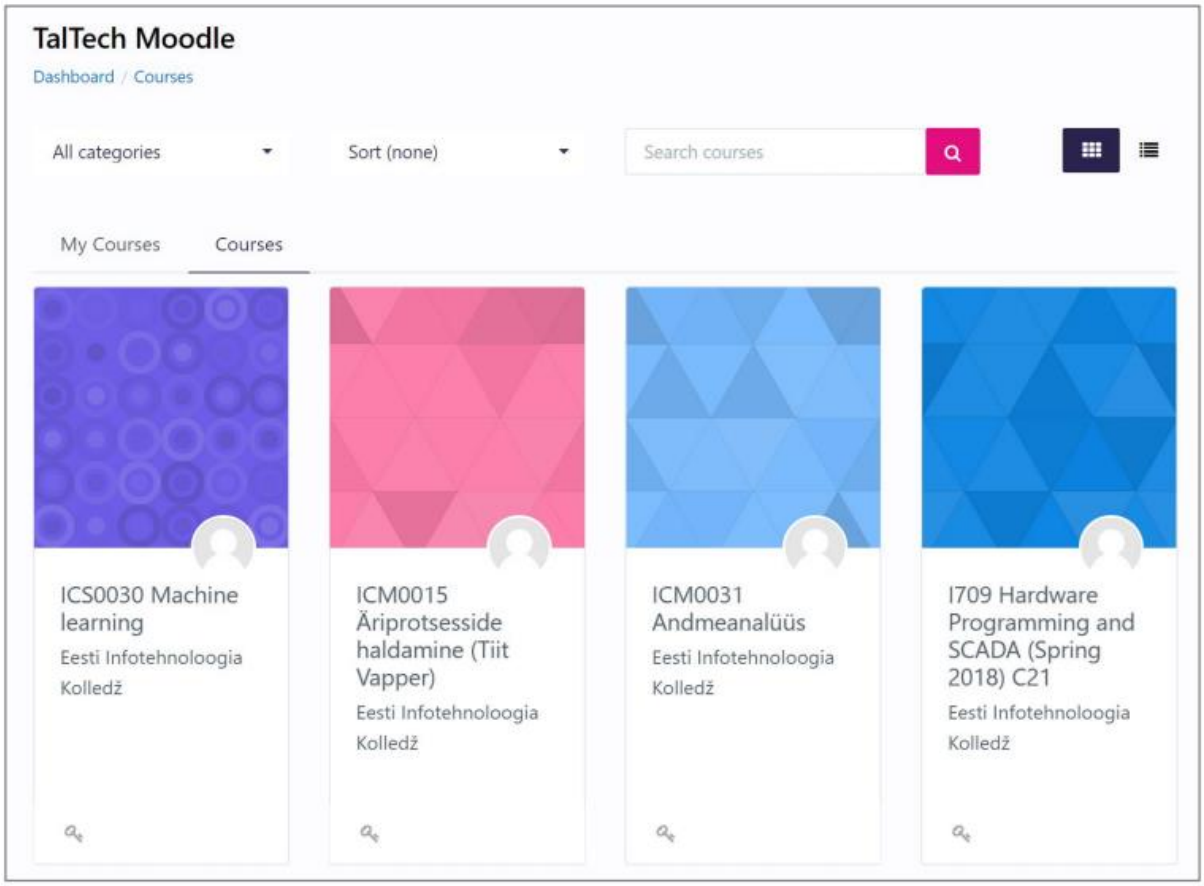


Summary

You are now familiar with how to add and show some additional block elements that give shortcuts to some most used features.

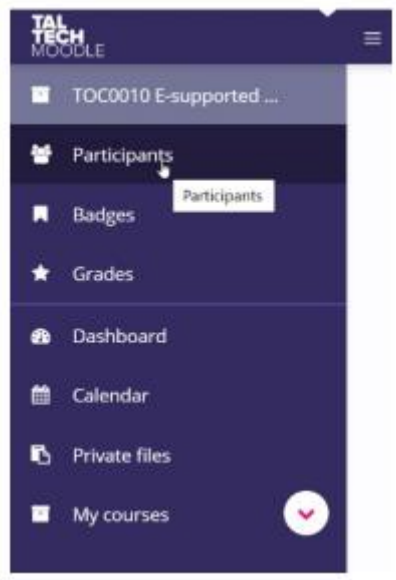
8.5. Course access settings

Moodle course can be accessed in different ways (from the learners perspective). To be able to find the course, it should be first made visible (look into the course main settings guidelines). If the course is visible, then it can be navigated (or searched) from the courses list.



It is important that a visible course includes course description which helps to get more information about the course by those who still have to decide to take this course or not.

Once the course is visible and ready to be shared, you need to set up access levels (enrolment methods). From the left side select **Participants**.



Course participants list is presented (if the course has been recently set up, or a reset was made, then you as a teacher are probably the only participant). To change the enrolment methods, select a wheel from the top right corner and select: **Enrolment methods**

A table is shown, where you can find all available enrolment methods. If a method is greyed out, it means that it cannot be used right now.

Most important course registration/access methods are:

• Self enrolment (Student) - enables to set up how students can register to the course, for example, if a special enrolment key is needed. The name of an enrolment option can be freely chosen or renamed. It makes sense to use some common name because this will be shown also for students.

• Self enrolment (Teacher) - enables to set up how teachers can register to the course. The name of an enrolment option can be freely chosen or renamed. It makes sense to use some common name because this will be shown also at the registration page and we do not want to confuse students which one they have to use. Pay attention that this is the only way how a teacher can register to the course, because the previously available manual enrolment is not possible according to the regulations set by GDPR.

• Guest access - enables to access the course without an enrolment key - this enables to access only course resources, guest users are not able to access any activities (quizzes, forums, etc.). Guest access can be also set up with a key if needed.

• Manual enrolments - this method is still visible from the old times, but it can’t be used anymore due to GDPR.

All access/registration methods (except manual enrolments) do have specific settings and you can use a gear wheel to do that. If one specific enrolment method is greyed out, it means that this course doesn't enable to access it by that specific mode/way (no matter what the settings are). Let's take a closer look into those enrolment methods. If you do not see all needed enrolment options, you can add one by selecting it from the drop-down: **Add method**

Self enrolment (Student)

Click on that specific gear wheel at the end of that row or add a new method from the drop down: Add method > Self enrolment. More settings are shown. It is recommended to follow settings as given below:

• Allow existing enrolments = Yes

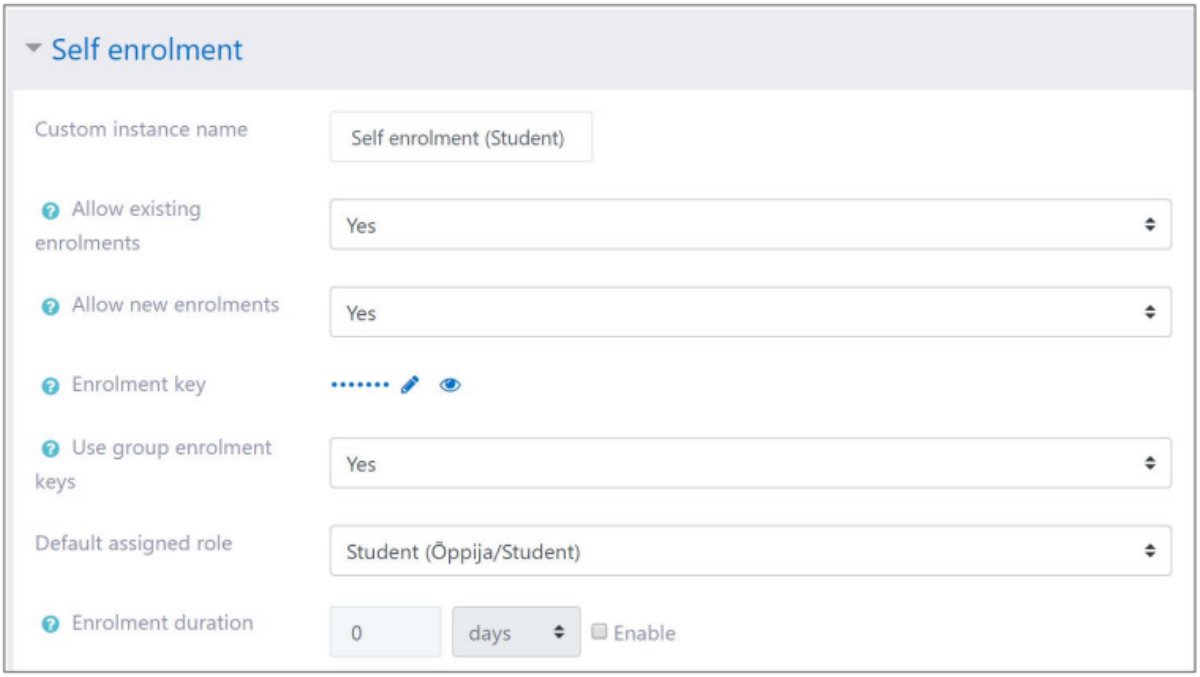
• Allow new enrolments = Yes

• Enrolment key = include a key, with which a student can register to the course, you can check spelling with an Unmask option.

• Use group enrolment keys = No

• Default assigned role = Student (this selection depends on how you named it in the main settings)

Remark: You can let students into your course based on their group name as well. In that case we do not share a course specific enrolment key, but group-based enrolment key. But we should keep an enrolment key here as well, that students do not know. We talk about group enrolment key in later sections. Here we are expecting that all registrants are coming directly into one group.



Once you have changed those settings, click on **Save changes**. You are taken to the previous page. Also pay attention that your access method is now in darker colour, meaning that it is active. You should now share this key with your students (ex. in contact hours, on study information system course page, sending out a notification from study information system, etc.). Self enrolment method doesn't give an automatic access to your course, if the key is not public and/or you have not defined guest access.

Remark: Self enrolment (Student) may be also present in the course template that was used to create your course page. In that case you only need to check the settings.

Self enrolment (Teacher)

Click on that specific gear wheel at the end of that row or add a new method from the drop down: Add method > Self enrolment. More settings are shown. It is recommended to follow settings like given below:

• Allow existing enrolments = Yes

• Allow new enrolments = Yes

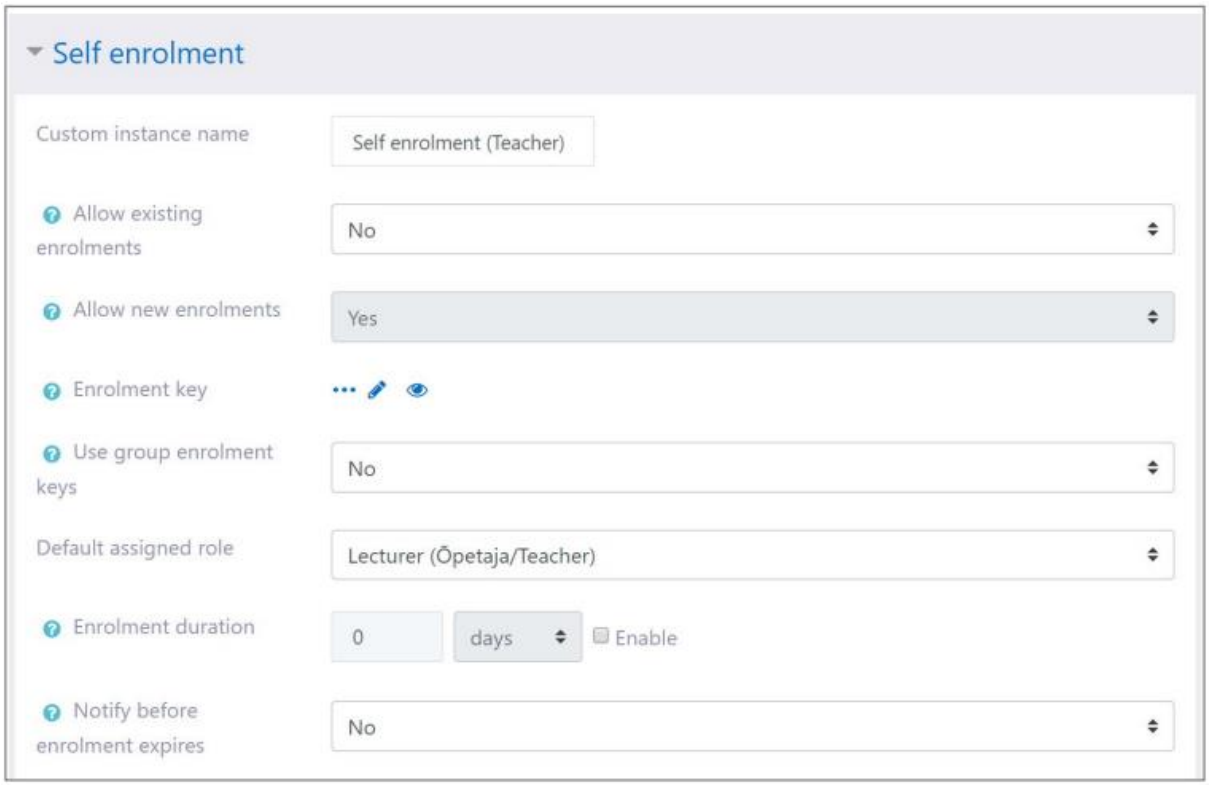
• Enrolment key = include a key, with which teacher can register to the course, you can check spelling with an Unmask option.

• Use group enrolment keys = No

• Default assigned role = Teacher / Lecturer (this option or name depends on course main settings where you define how you want to call roles in your course).

Remark: Pay attention that by allowing this method, a teacher can register to the course as a teacher. If the access is already made, you do not need to create this option or activate it. In case an additional teacher should get access to the same course, this is the only method to make it happen. After adding an enrolment key, you share it with your colleague (or colleagues) only.

Just like with students, you need to create only one method and share the same enrolment key with all your course teachers.



Once you have changed those settings, click on Save changes. You are taken to the previous page. Also pay attention that your access method is now in darker colour, meaning that it is active. You have successfully created an enrolment method for teachers.

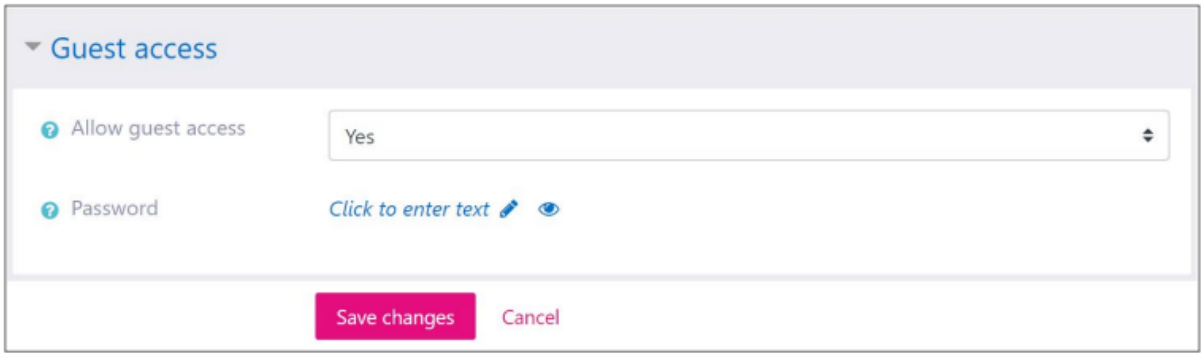
Remark: Self enrolment (Teacher) may exist already in your course or the course template which you use. In that case you need to check the settings as described previously. Usually you have only one specific enrolment for students and one for teachers. If you delete it, you also remove users from the course and they can't access the course. If you accidentally removed teacher enrolment method and you (as a teacher) were registered by that method, you need to contact the TalTech Education Technology Officer. If you want to close the registration for students, just change the enrolment key. By that method it is easier to control who is registered into you course and to whom you may need to send the changed key afterwards (if they missed the official registration period).

Guest access

It is up to you, if you want to give access to your course also for guests. If you enable it, it means that anybody can visit the course without an enrolment key and therefore that access for us is shown as anonymous. It is still saved in general statistics and helps to draw some conclusions, how often our course is accessed in guest mode. Guests do not have possibilities to participate in forums or take quizzes. Therefore, the guest access can be taken also as a general marketing of your course to a wider audience. Once guests have seen the course and it looks interesting for them, they may want to take that specific course from course program or as an open university participant. Considering this, it is important that course summary gives

some general information about the course semester (spring, autumn semester, etc.). Because then the user or registrant can expect also the support from the teacher.

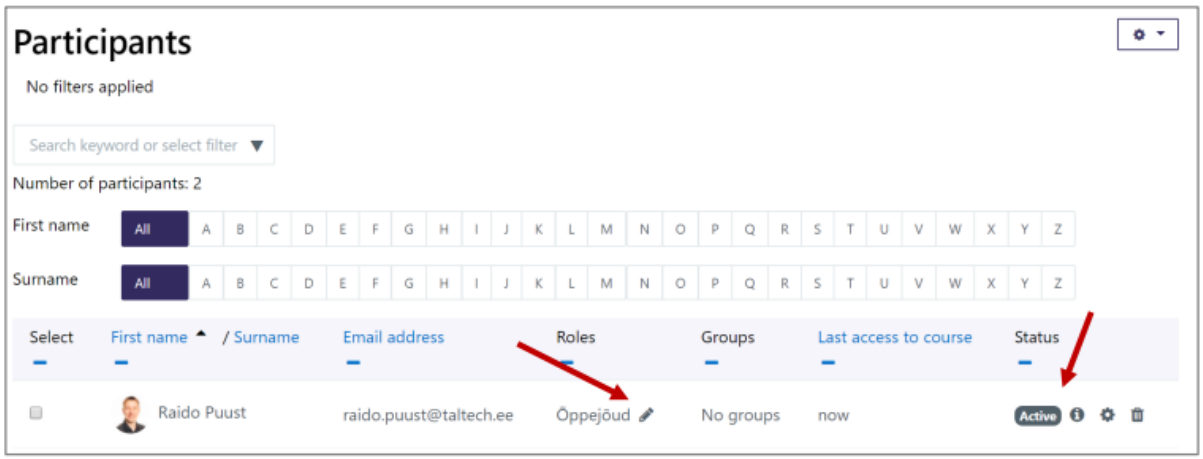
Guest access can be defined with the key or without it. You can include that key into course summary as well or share it with people who ask for it. To be able to define guest access, you simply click on the gear icon again and you will be taken to an extra settings page.



By default: **Allow guest access = No**. If you want to give an access to guests, you need to change that to **Yes** and if you want to include an additional key, you can do that by adding a password. Click on **Save changes** and you are taken to the previous page once again. Guest access is in darker colour and can be accessed by guests. But you can control its status using a gear icon (turning guest mode on/off).

Changing/adding a role later or removing a participant

If needed, you can add additional roles (or change the current one) for a participant. You can also delete the participant. You can add role to the user/participant from the column **Roles** (note the small icon). You can delete the user from the column **Status** (note the small icon).



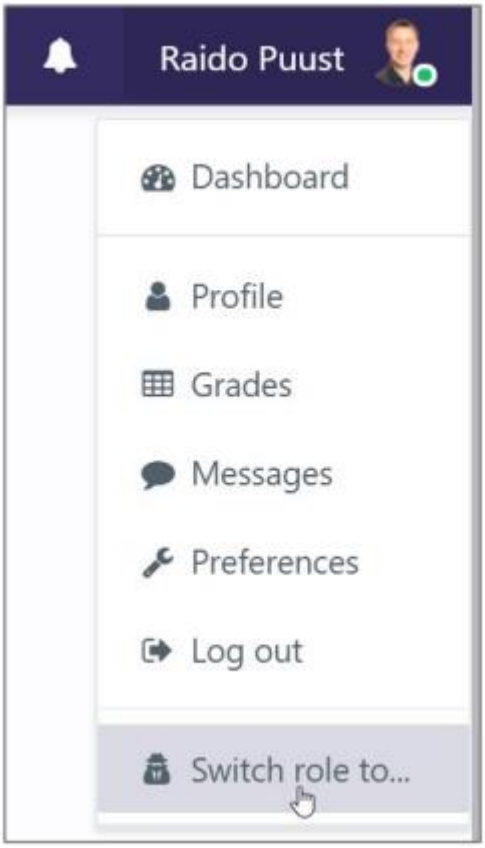
Summary

You have now successfully applied course access levels. At any time, you can make changes to those elements. To continue with the course´s other settings, you can easily click on the top navigation bar options and select the course short name option. This will bring back the course front page.

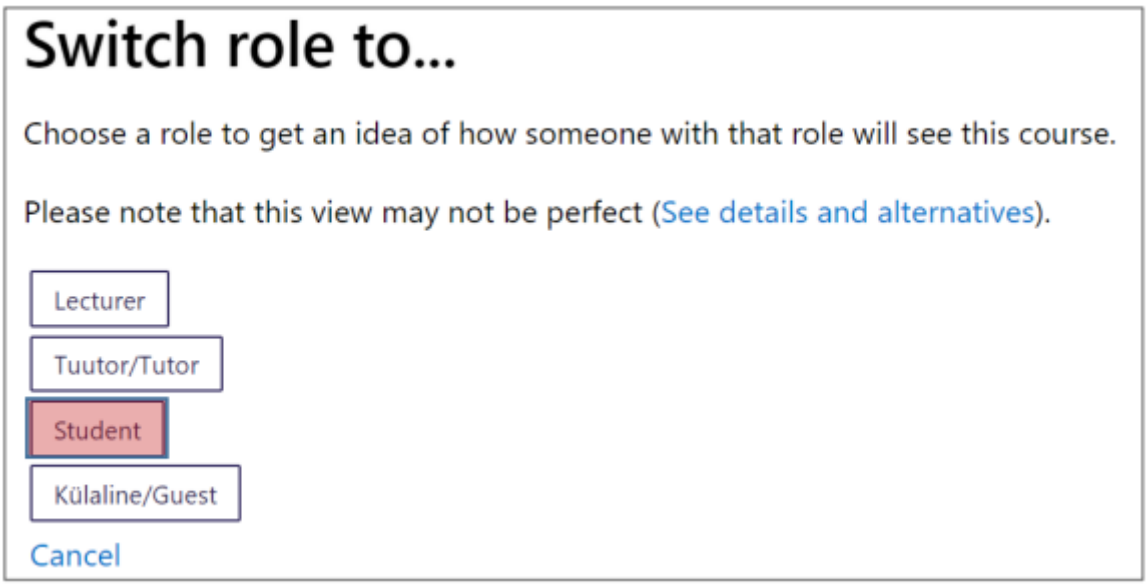
Once you are on the course front page, please pay attention to the course address from the browser address bar area. This is your course unique link that can be used to create a homepage option in the study information system (so that students know where the e-supported learning is carried out).

8.6. Course various views – student vs teacher

While building up your course, it may be useful to check, how your course looks like from the student´s perspective. It can be activated quite easily. From the top right corner, click on your name and select: **Switch role to…**

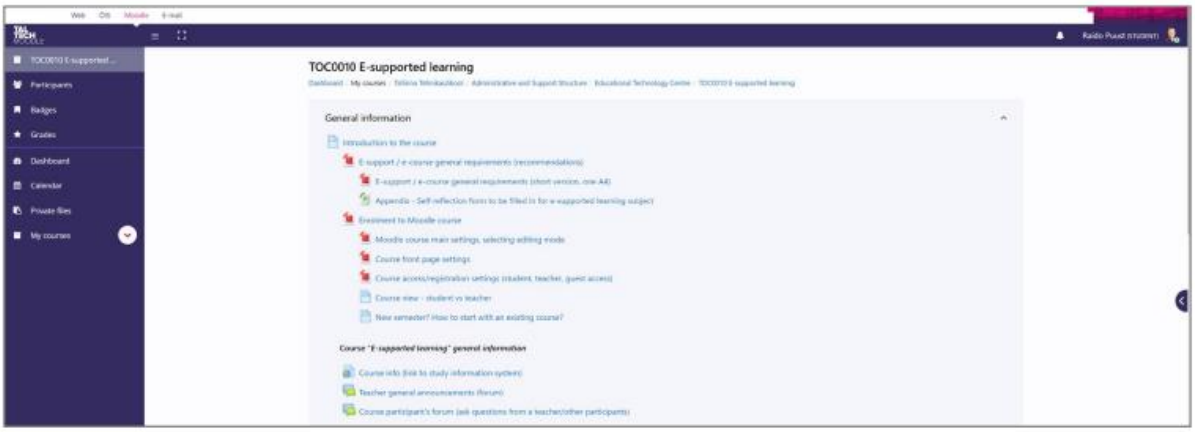


Then select: **Student**



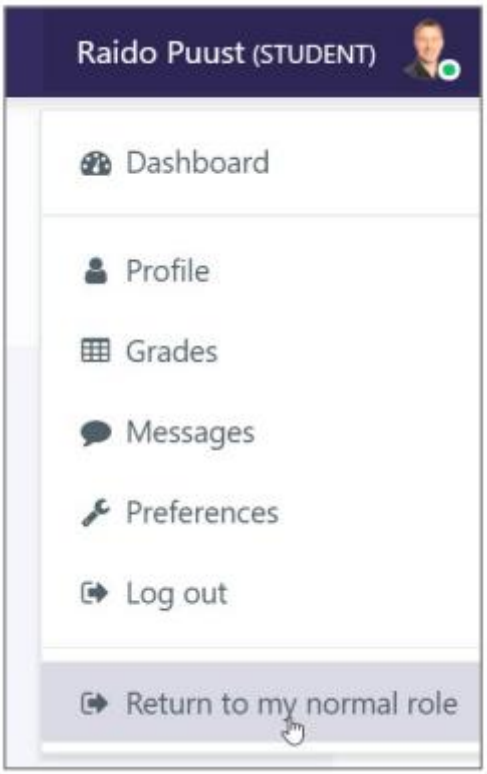
Remark: Pay attention that the list of names depends on how you have renamed those roles (check course main settings). In current case we can see that the student is as **Student** and teacher as **Lecturer**.

Once you click on a link **Student**, your course view will be updated and presented as how it will be seen by the student (for example it will hide away all those components that you have not made visible).



The main difference is that the student does not see course administration palette and if some course materials are made invisible, then those also are hidden. Sometimes it is important to check the course under such role setting, but once you get more experience in Moodle, you use that option less and less because you know how it looks like.

Also note that you must click on **Return to my normal role** before you can access all teacher's tools again. You can find it from the same location as changing to the student mode (under your name).



Summary

You have successfully tested different roles in your course. Sometimes it is important to know, how does your course look like from a student´s perspective, so that you can guide students (or make guidelines) correctly.

8.7. Course reset

When a new semester begins, the question may come up, should I use the same course page or create a new one (where I am recreating it again)? General recommendation is that the same course should be used, and changes should be made on that specific course page. There are some cases where we want to keep the previous course as a separate course page. For example, if we have not yet made learning analytics and want to keep all activity data intact. But also, if this is the case, quite often we can download those statistics beforehand and analyse them later (with other tools like MS Excel or similar).

There are some more reasons when you would prefer to create a new, empty course page:

• Course is the same, but it will be given by a different teacher and previously published materials have no use or do not fit into the current teacher's workflows.

• Active semester has the same course for multiple groups and each group has its own material (no similarities in terms of content). Then we might want to create separate course pages for those different groups. But even for that Moodle offers tools to build your course with active group settings.

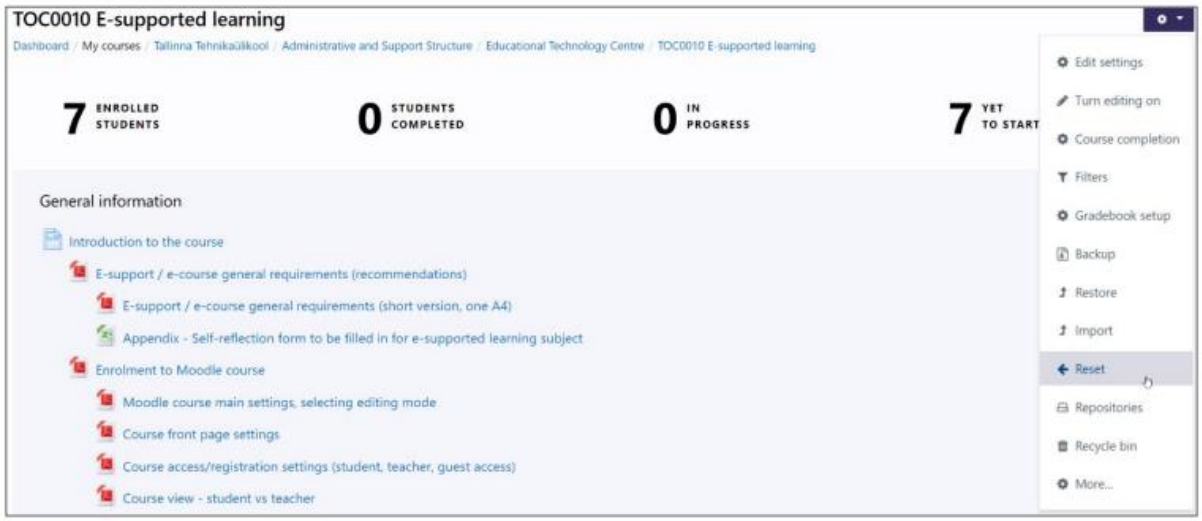
• The same course is given in multiple languages (in addition to Estonian, also English etc.).

We want to keep the list of courses easily understandable, therefore by limiting the creation of course pages we try to offer one certain location for the student from where she/he can access the e-supported learning. Keeping this in mind, please always consult with the education technology officer before making decisions in terms of creating a new, parallel course page.

It seems that sometimes teachers require a new course page because they think that to reset the course (remove previous students, learning data etc.) takes too much time. This is not true. I have personally used the same course page semester after semester and before each semester I simply reset my course. This is explained in more detail in the following section.

If you are starting to teach a new semester, and you have a previous Moodle course page, then it makes sense to reset the course before you let new students to the course (this doesn't account for guest access, because they are not "real" participants anyway).

From the main administration menu, you can find: **Reset**



Note: Before moving forward, please ensure that you have downloaded gradebook data, test attempts, feedback data, most important topics or questions/answers, homework etc. Gradebook data is probably the most critical, because it has (in a simple way) all results about your students in the previous semester. Perhaps you do not need it at all, then you can skip it and move forward.

New page is shown, where you can select which components you want to reset (remove). We start from the very top selections and point out what are the most important ones to think about before selecting them.

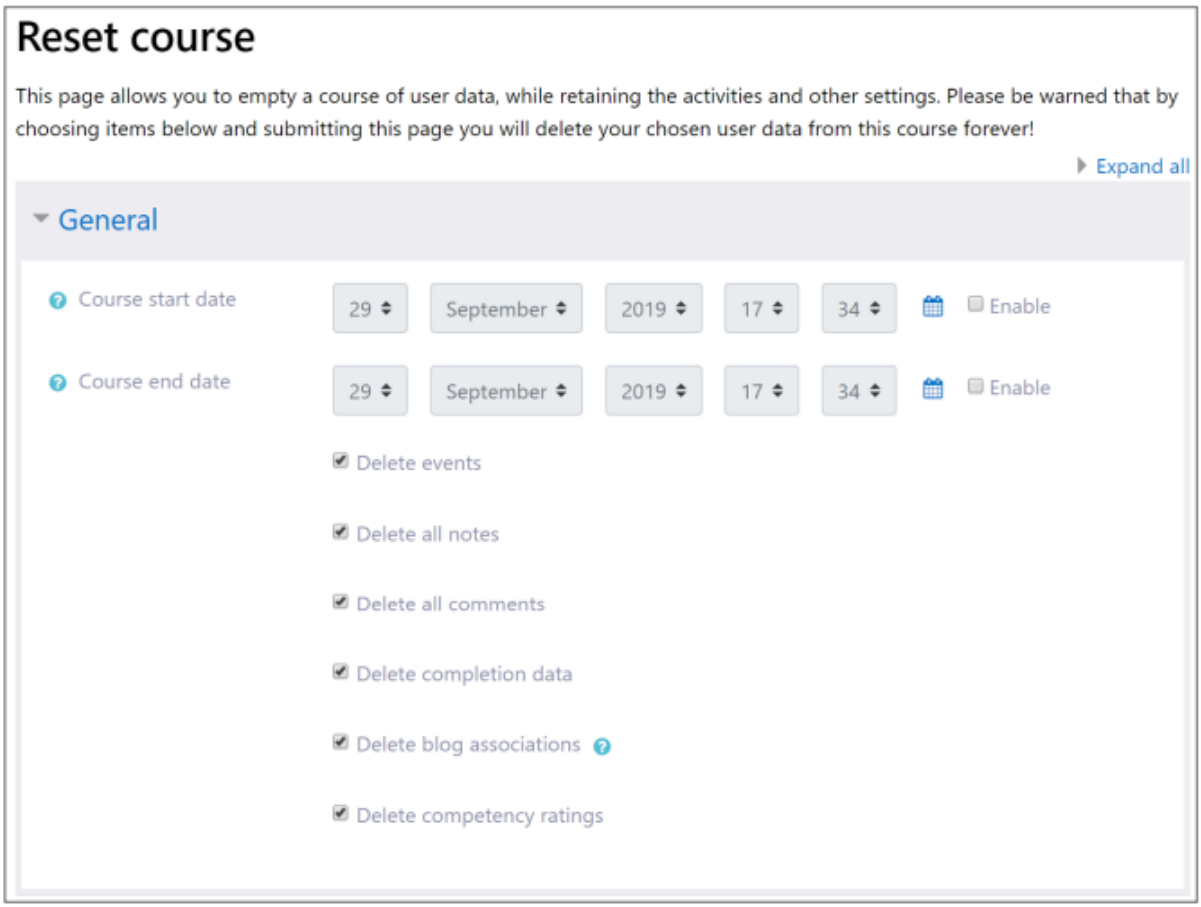
Remark: Resetting you course does not remove any of your learning content. Therefore, it is a safe way to clean up the learning process only.

Remark: Page that opens shows only those components that you are using in your course. Because courses are different, the list of options shown in the following section may differ from your view.

The first section is called **General**. Here you can select/mark:

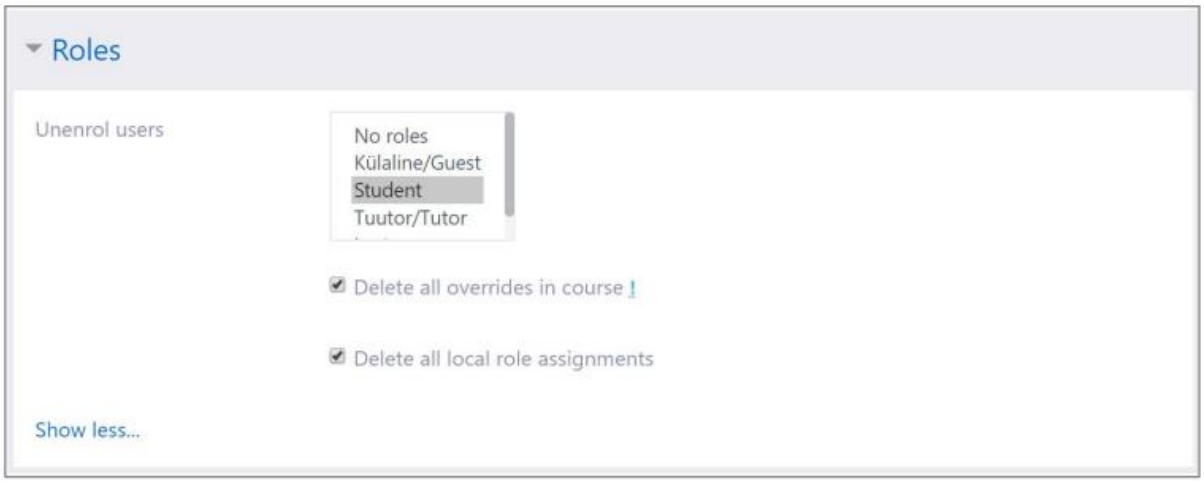
• If you use weekly course format, you can set a new course start date (for example Week 1 Monday or Week 9 Monday). This can be changed also in the course main settings.

• Usually I select all items in this section, even if I have not used all of them. So, I remove all events, notes, comments, completion data and blog associations.

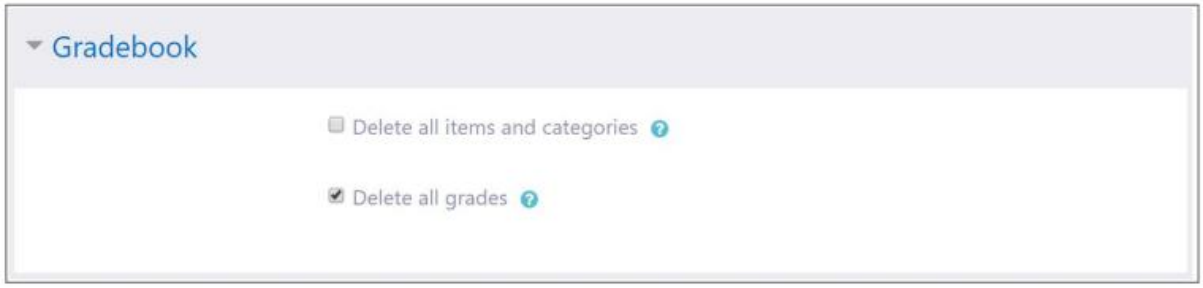


Next select the section **Roles**. This is probably the most important section, because it enables to quickly remove all students from the course. Quite often you simply select **Student** (depends how you name it in the course main settings). You can hold down CTRL key and select also other roles. Be careful that you do not select **Teacher** or **Lecturer** role, because this affects also your enrolment and you cannot undo this (you must contact the education technology officer).

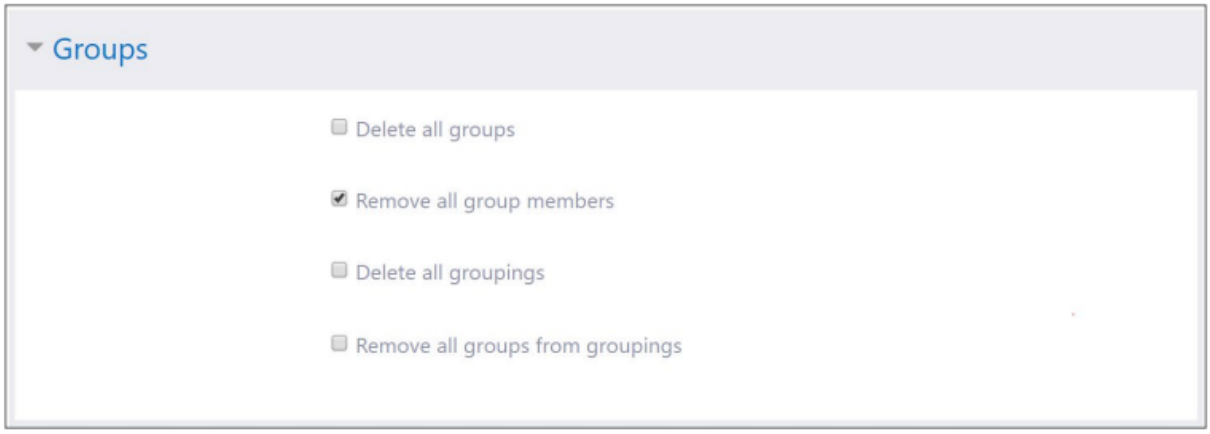
You can click on the link **Show more...**, to see more settings that you can select in this section. Typically, I pick also other options, because I may not remember if I have overridden some user roles or not.



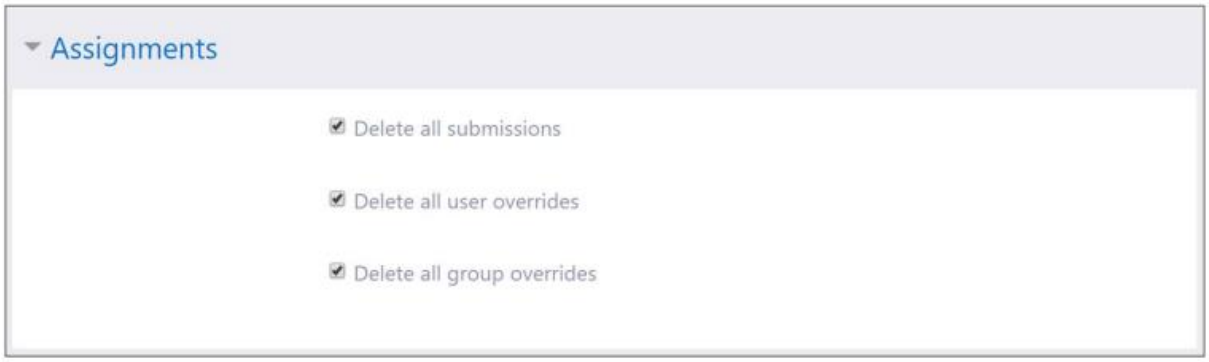
Click on the next section, **Gradebook**. In this section, pay attention that in addition to grades you can also affect gradebook layout as well. Usually you want to keep your gradebook items and categories, therefore please do not select that option. But select **Delete all grades**, as you probably do not want to have such situations that if a student retakes the course, her/his old grades come along. Sometimes it depends on how teacher sees a repeated attempt, I personally do not overtake previous semester results and therefore remove those.



Move forward, into section **Groups**. Here you are mostly interested in removing the participant assignment to specific groups. Therefore, select only **Remove all group members**. All other selections will stay unselected (for example, it is probably not reasonable to remove groups itself, as those may be the same also in this or new semester and you save some time by not doing it again).

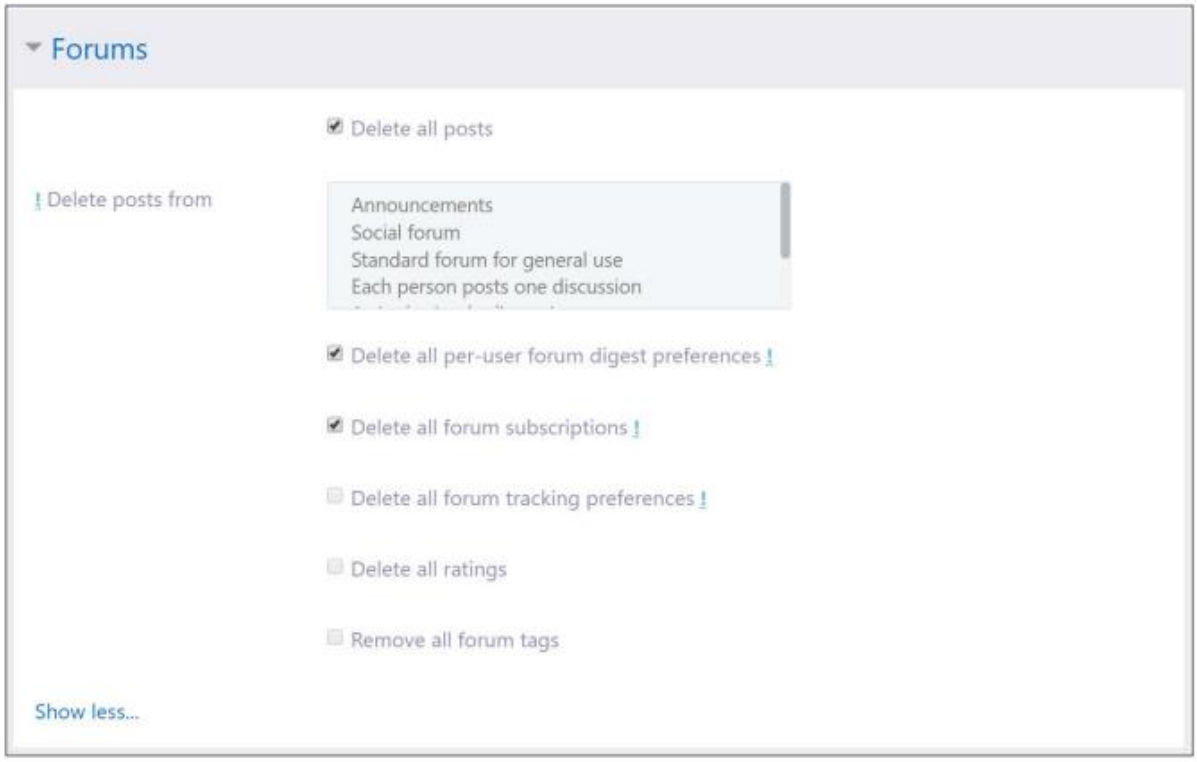


Select next section **Assignments**. This section is quite limited in terms of its settings but cleans up a lot. Because all student's assignments are swiped away just by selecting one box here (makes sense to do that before you create a backup of your course, because usually you do not want to keep those assignments in that backup - that will greatly reduce the size of the backup itself). Select: **Delete all submissions**. In addition, if you made overrides, you can remove them also. It is safe to select all options.



Moving to section **Feedback**. You can quickly remove previous semester feedback but again it is recommended to save that data before you reset your course. Most probably you simply do not want to keep previous feedback, because once you have made changes in the course or learning process, it is not so easy to make conclusions, if feedback is given at different semesters. Therefore, you can compare that in an unconnected way, if you have downloaded that data beforehand and now compare it with new semester feedback. Please select the only option here to remove previous feedback. All your feedback questions are in safe place, those are not removed. If you use multiple feedback forms, you must select each one separately (in current case, there are two forms).

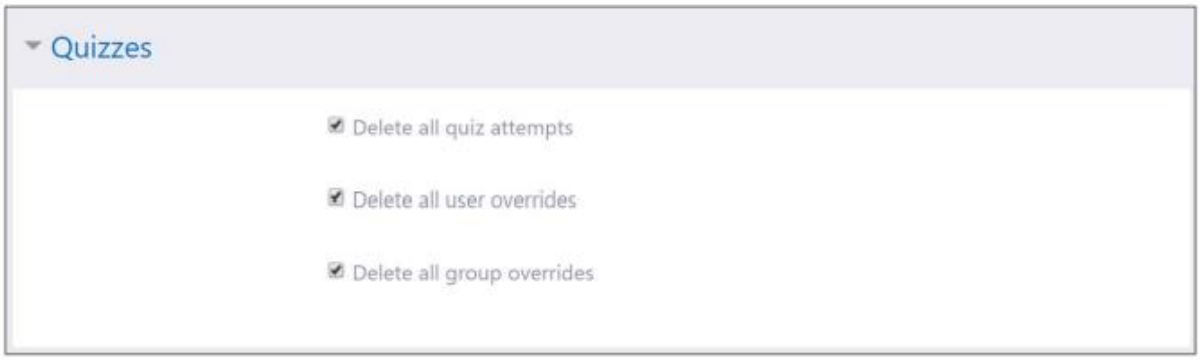
Next section is **Forums**. My general recommendation here is that please select **Delete all posts**. Also, in cases when some forum has been used for general announcements that may be the same semester after semester. But it is simply funny to see some old messages if we decide to keep those. Especially when those are not relevant to current students, misleading or otherwise out of context (including references that do not work anymore). There are cases when you may want to consider to keep it, but keep in mind that we want to give the best possible learning experience for current students and if they have to dig into a really massive forum, to find that one needle, then it makes more sense to delete the forum's content and perhaps just recreate that one post/topic. Once you select **Delete all posts**, you can't select specific forums from where you want to delete those posts - all will be selected automatically. Now, it is important to note that only posts are deleted, not forum as activity, not its settings or descriptions etc. You can select **Show more…** I also delete or select next options that follow. Once I do that, then some minor options will be selected automatically (or simply greyed out, because those are deleted anyway).



Let's move to the next section, **Quizzes**. If you have quiz activities in Moodle, you can remove previous attempts. This section enables to remove all attempts in one go (you may have several quizzes in your course). Please remember that if you decide not to remove those attempts, those are connected to the student and if the same student enrols to the same course (to retake the course), then old data comes along. Usually we do not want that to happen.

Remark: As mentioned before, if you plan to make learning analytics, then it is a good idea to download quiz attempts before you reset the course.

It is suggested to select all options.

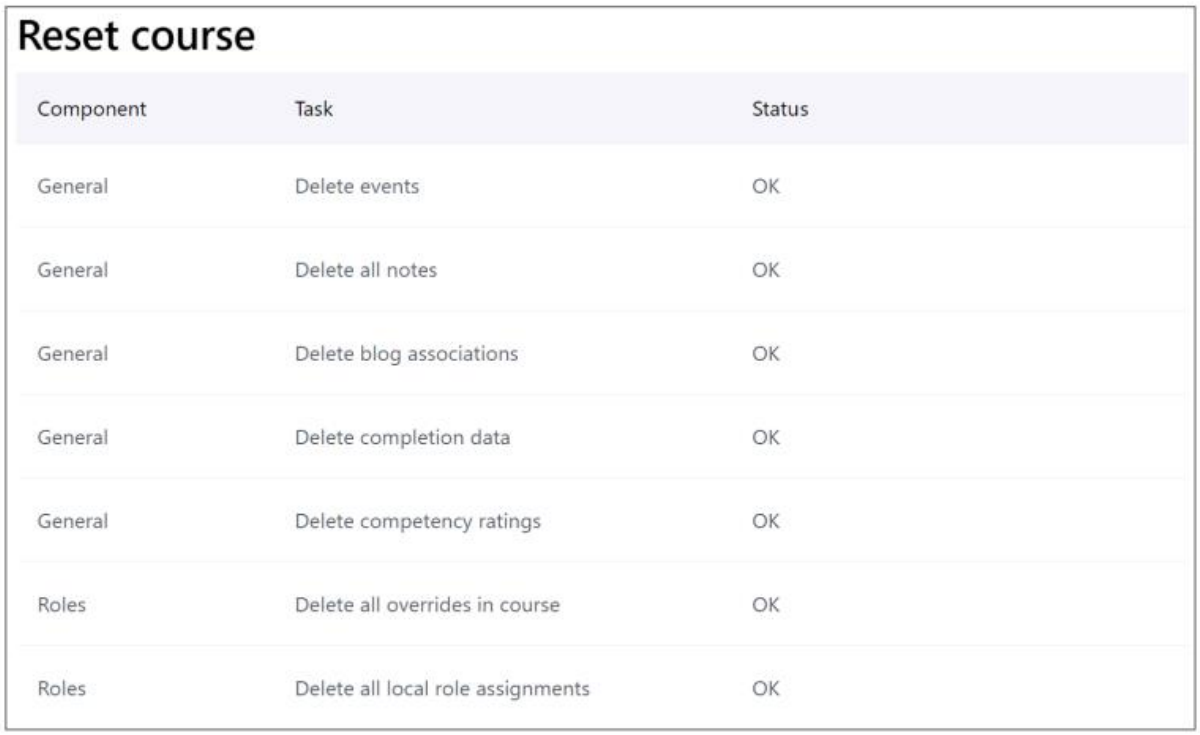


If you have other activities in your course, you should go to more sections. For example, Reservations. It enables to quickly remove previous registrations/requests. It makes sense if you want to quickly open a new reservation also in the new semester. Therefore, please select: **Requests**

You have checked the main settings, which will be removed, now it is time to actually start with the resetting procedure. Click on the button: **Reset course**

Please be patient here, because what follows now is, that Moodle starts to analyse your course (in the background) and therefore depending on the data size, it may simply take some time (in minutes). That said, your browser may stay in the state of loading the page. I do have courses, where the amount of data that will be removed, is in gigabytes (student assignments), that is the reason why it may load sometimes quicker and sometimes you need to wait a bit longer.

After refreshing the page, you see the summary, where it is stated what type of data will be removed. This list heavily depends on content that your course holds, therefore, please do not take it as an image that you may see the same.



Reset course

Component	Task	Status
General	Delete events	OK
General	Delete all notes	OK
General	Delete blog associations	OK
General	Delete completion data	OK
General	Delete competency ratings	OK
Roles	Delete all overrides in course	OK
Roles	Delete all local role assignments	OK

From the end of the page you see the button **Continue**. Click on it. By doing so, the course will be reset, and you are directed to the course front page.

Your course is ready for a new start! Of course, you may want to make changes in terms of course content, change assignment's and quizzes start and end dates. This still needs some attention. But your course is cleaned up in terms of previous registrations and attempts and you spend perhaps 5 minutes only to carry it out.

Summary

You have successfully reset your course and can take on new enrolments. Pay attention that you still need to take extra care to check enrolment methods for a new semester and their settings (including enrolment keys etc.). If you used group enrolment key, you must check that from a group page.

9. E support (e-course) resources

9.1. Introduction

Once course main settings are set, you can start to add content for your course. It might be a conspectus (as a PDF file) or a link to an external source (webpage, book from a library, video from YouTube etc.). Those activities are called resources in Moodle environment. Before you can start adding resources to your course, you should enable course editing mode (check previous guideline from the introductory module).

In this module we will mainly focus on the following resources:

- File - enables to upload a file (ex. conspectus as a PDF file);
- Page - enables to create a classical webpage as a learning source (saved in Moodle only);
- URL - enables to add a link to an external source;
- Label - enables to add a text which separate some of your content at your course front page into logical blocks/sections (ex. Slides, Exercises, Homework etc.)

After finishing this module, you are able to add different types of learning content to your course.

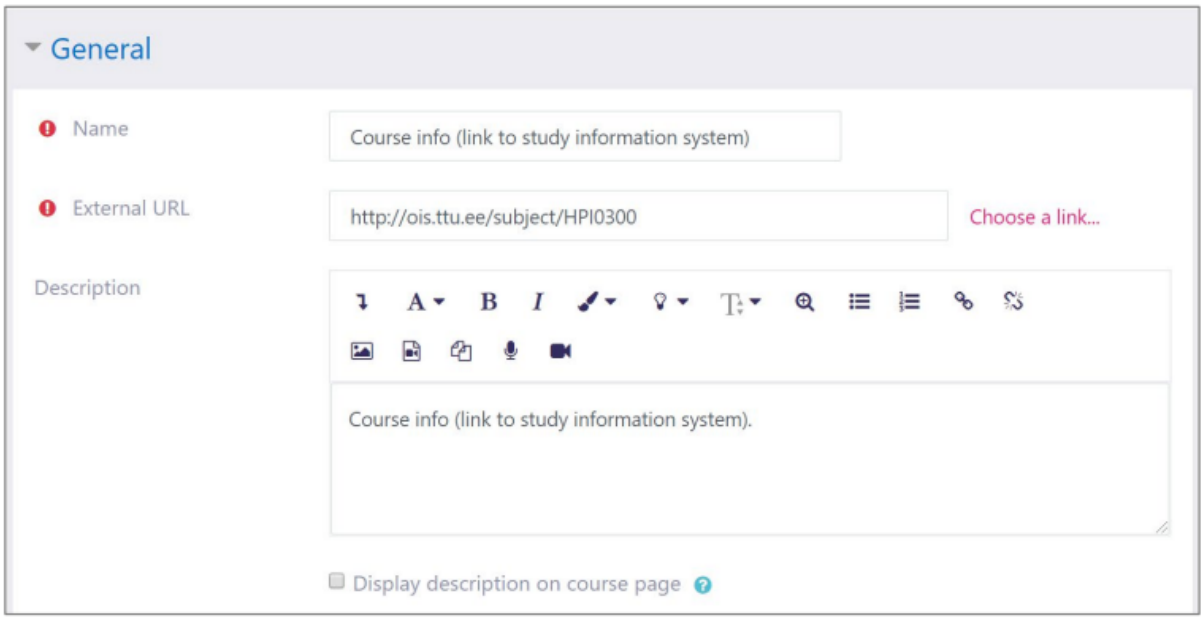
9.2. Add a resource: URL

When you want to add a link to an external resource (web page, study information system's subject card, video in streaming environment, etc.), you should use the resource: **URL**

From the opening pop-up select URL. Once clicked, you see a new page, where you can add different settings/information. Let's see how to set it up. First example is about linking to study information system's subject card.

Subject card in study information system - creating a direct link to it

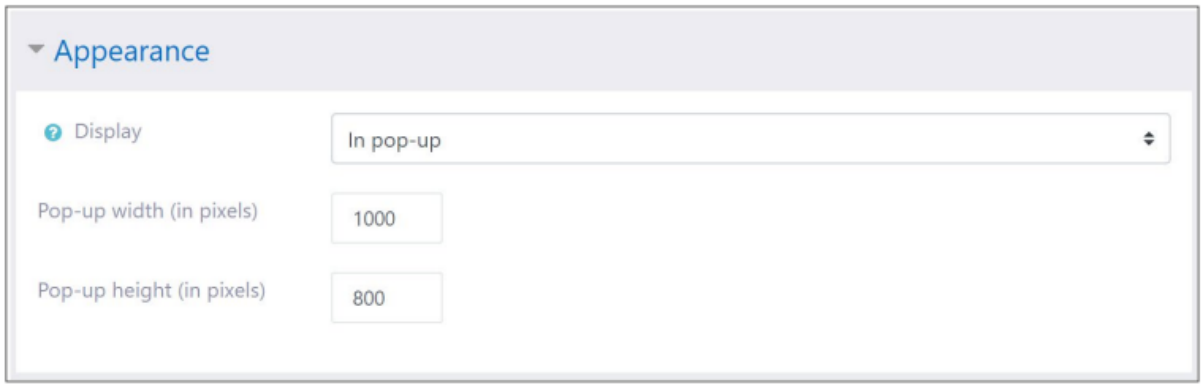
At first, we need to add a name to our link. This should be descriptive. The most important part is to give a link itself (**External URL**). If we talk about linking to study information system, then the quick and easy way to reference is the following format: **http://ois.ttu.ee/subject/CourseCode>**



You can also add description, this is not always needed, but I prefer to add at least the copy of the link name here. This information (or additional information) is shown in cases when a student wants to get quick overview about learning content with their descriptions.

Remarks: You must recheck that your links work regularly. It is a common practice to check these at least in the beginning of each semester and in the middle as well.

You can add some additional parameters while working with links or URLs. Let's investigate a section **Appearance**. Here we define, how our link will be opened.



My general recommendation here is that links should open in a separate browser tab, or in a pop-up. That is why, we have selected in the previous image: **Display > In pop-up**

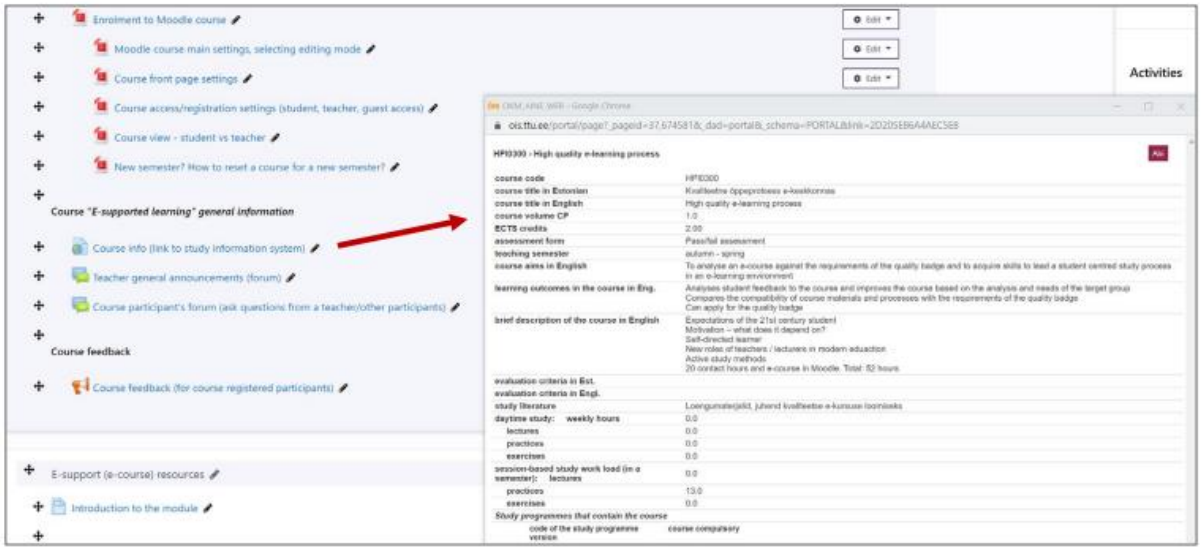
The reason for this is simple, if we let those links to be opened in the same tab, we are directing students away from our course, and it is so easy to close that tab and by that also exit from the course. It is simply tedious to enter course page again.

In addition, please pay attention to pop-up size. Default value, 100x600 works well. The width/height aspect ratio is not always an important thing to consider but try to avoid that your pop-up is a square or square-alike. Also, sometimes it is recommended to consider also content native aspect ratio. For example, with videos, these are usually defined in its own width/height ratios. You can take that into account easily, if you simply multiply those default values by some coefficient to get around 1000 x 600 scale. We will talk about that later, when we do a video URL example.

Other settings are not so important. Click on: **Save and return to course**

Remark: You can also click Save and display, that enables you to see the link in action straight away. If you clicked on the first button, you will get back to the course front page and to be able to check the link, you must click on it. Iti s not a big issue, but it is good to know about different behaviours. Once you have added a link, you can use its cross-hair icon to move it to the correct location at any time (you can even shift it in between modules/topics).

You should also check that your link works as expected. Click on that link and see the result as a popup on your screen.

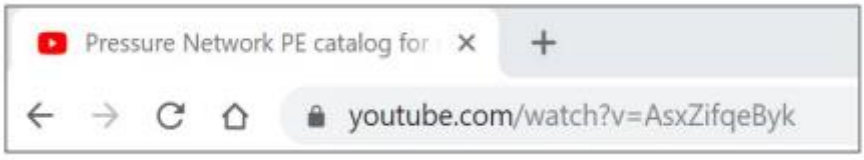


You can close the pop-up from the red-cross (depends on your browser) and you have the course front page again in focus.

Adding the YouTube video link

Quite often we may want to link to some video in video streaming environment. For example video from YouTube or Vimeo. It is a preferred method to involve videos in Moodle courses. Mainly because we keep the video away from Moodle itself, therefore the streaming is done by another service which is specialized to do that. And we are just referring to that video by a link. Please note that sometimes you may still want to add videos directly into Moodle as a full video content. Be careful before doing it, especially take a look into the video size (that it is not too large in terms of file size).

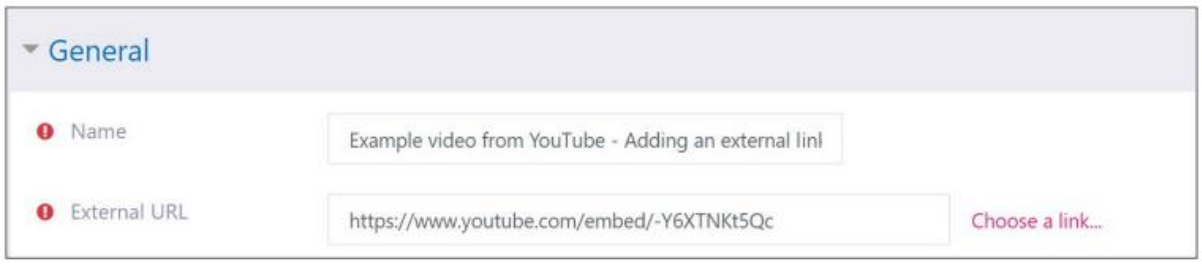
The crucial part while adding video links to your course is the definition of the link itself. If you navigate to some YouTube video, you may see a direct link straight at the browser's address bar.



We probably intend to copy that link directly as an URL. It is not recommended, because then the video opens with the YouTube user interface. To keep the attention to the video itself, we can simply edit that link or use a part of an embedded code instead. Just look in the area of sharing the video and an option to embed. Pay extra attention to that part which starts with an http://...

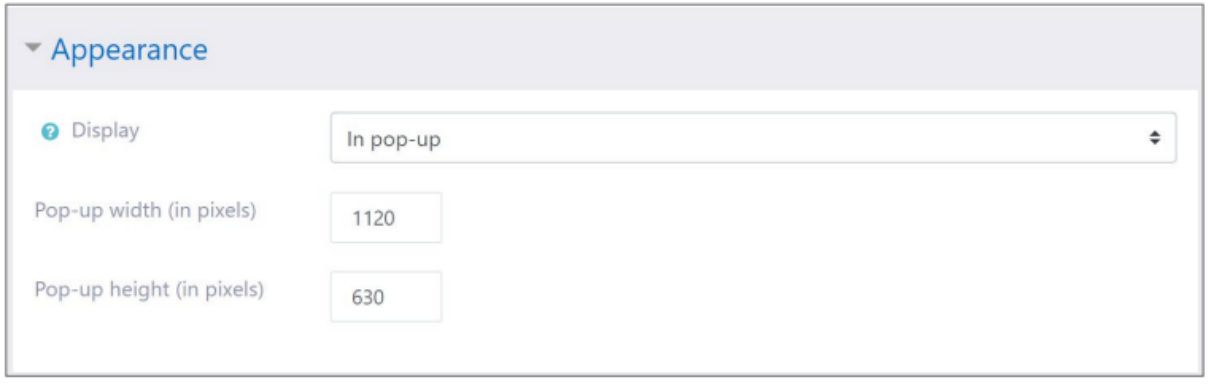
You should find a share option. Click on that. And then select embed.

Copy highlighted part as your **External URL** (of course, you have given a specific name and description beforehand as well).



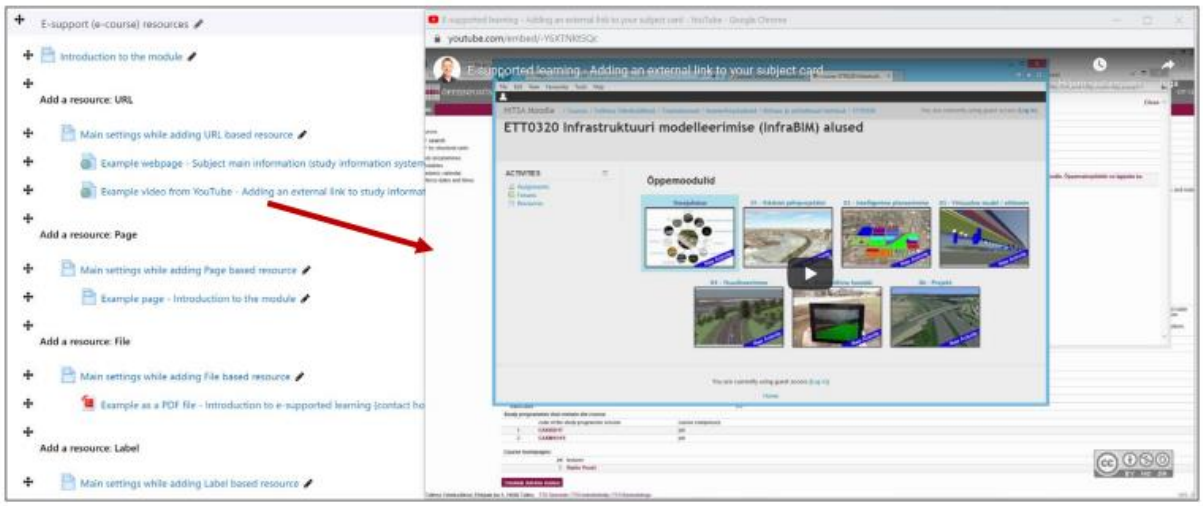
Once you link to some video content from an external source, you must be aware that those videos may be recorded in various aspect ratios. You want to account that as well, while presenting the pop-up of that video in your Moodle course. You can always check that code from your embedded code. In our example the default height/width is 560 x 315. You want to keep that aspect ratio also in Moodle as pop-up. Pay attention that we are talking about aspect ratio not just about current width x height.

Once you take a note about your default video size, you can easily multiply those values to get some general pop-up size that you use evenly in your course. For example, if we multiply the default value by two, we get 1120 x 630. This is good value to test. It falls into the same range as our other learning materials that pop-up (around 1000 x 600). Please include those numbers into Appearance section.



We do not need to tune up any other parameters/settings, just click on the **Save and return to course** button.

Once you have been taken back to the course front page, please check your link, if it works.



You have successfully linked a video from YouTube that opens in a pop-up and fills the pop-up fully. Student can resize the window and move to YouTube, if she/he wants to see it from there.

Summary

You have successfully tried to add two different types of web-links (URL). You should be able to add any type of link to your Moodle course. If you need to fix or change some settings, you can edit settings by clicking on the **Edit** button (at the end of the row).

From the same menu you can hide the link (not visible to a student) or delete it (can't be undone). You can also indent (move) the current learning resource to right/left. If you plan to add a similar type of content, you can first select Duplicate and then make modifications to the fresh copy. If you want to change the location of the current item, you can do so by picking up a cross-hair icon from the front of the row and just sliding it up or down.

9.3. Add a resource: Page

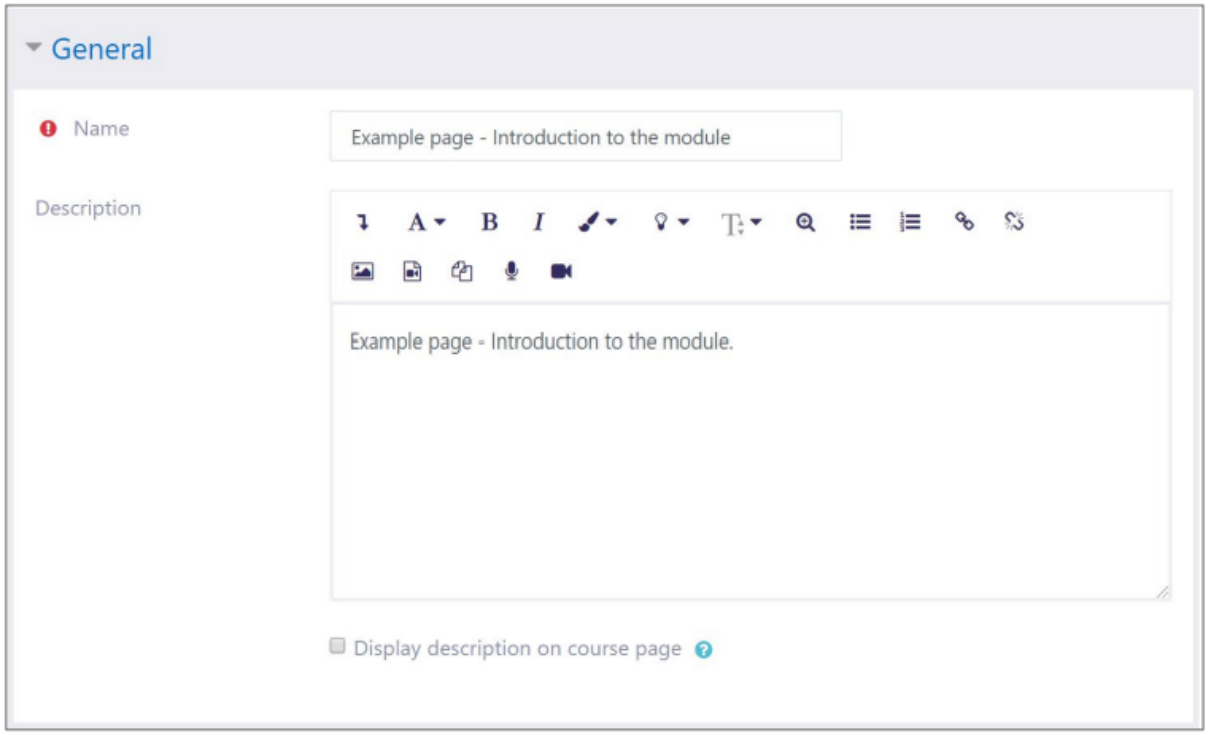
Page settings

Text based material (that includes images/video) can be added to Moodle in webpage format. There are no limits for doing it so. Good thing about this is its interactivity, because we can easily include images and videos in-line with text. If we want to, we can create full conspectus like this. It is important to note that these texts are created in Moodle and therefore it is recommended to keep back-up copies just in case in some text editor as well. Sometimes we may face the opposite situation, that we do have text prepared in text editor (MS Word, LibreOffice, etc.) and want to paste that text directly into Moodle webpage. Please be very careful while doing it, because those packages do export special coding as well and it may mess up our Moodle page visual side and/or it is really a headache to make some format changes. Therefore, even if direct copying is tempting, please be careful and copy/paste through simpler text editor (like Notepad in Windows users). Yes, it is possible to remove that extra format to some extent, but not fully possible. We will look to that side later.

To add a page for your Moodle course, use: **Add an activity or resource**

From the pop-up, select a **Page**.

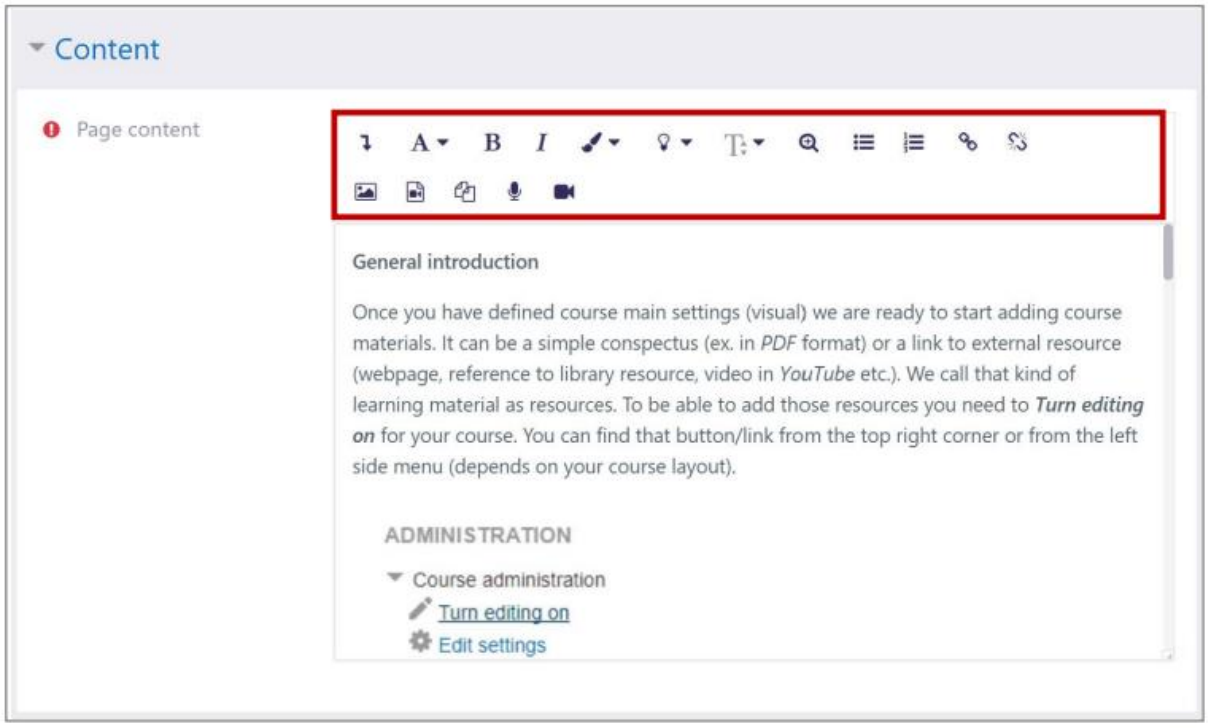
The Settings page will be displayed. Let's look at some major settings here. First of all, we can describe our resource or page (section **General**). Please give some descriptive name (not just **Page 1** or **Conspectus 1**).



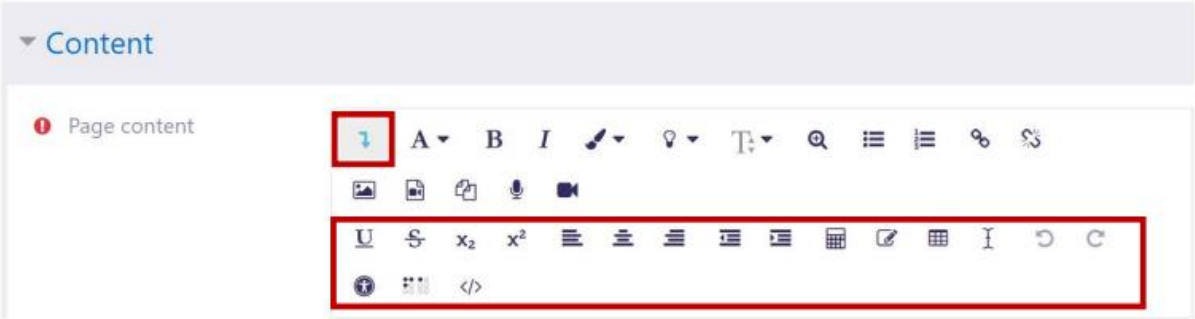
• Name - add a name to your page, this will be displayed on your front page as well, be descriptive.

• Description - you do not have to fill that part, but I usually add the same content as for name. Pay attention that this can be combined with the next setting **Display description on course page** - so sometimes you can add extra text to your front page by adding description and activating its visibility on course page. I usually do not recommend it, if you like that feature, please be careful as it is quite easy to mess up the readability of course front page.

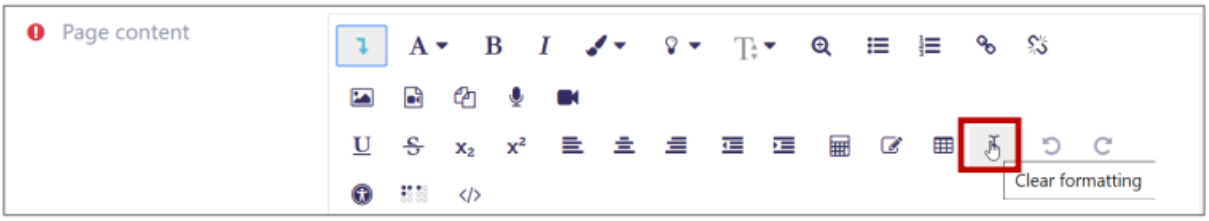
The most important part is of course the content itself you are adding (section **Content**). You can use all those familiar text editing tools that you may come along in some other, desktop-based text editors. By default, you have one row of tools visible.



Once you click on that first button on the button toolbar, you see some more tools for text editing/formatting.



If you would like to copy/paste text from other text editor directly (ex. MS Word, etc.), then one thing you always must do, is use extra tool after pasting the text (before saving). This is for removing extra formatting so that it doesn't affect the visual of your page. Use tool called **Clear formatting**.



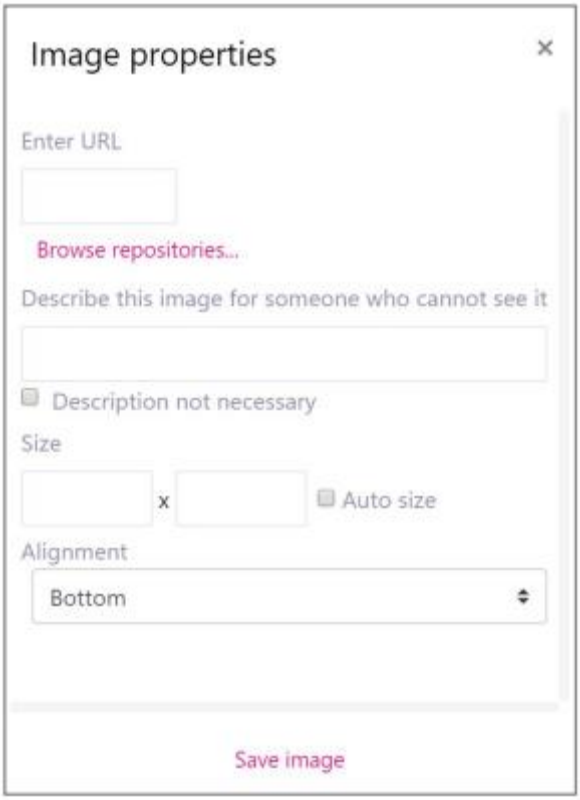
In some cases, it is not enough and that is why I recommend copy/pasting over some simple text editor (like Notepad for Windows users). Notepad will always remove all formatting and you may think that it takes too much time to re-edit your text. In general, you are correct, but just remember that once you do it, it is controllable by you also later (if you want to change the formatting). In some cases, because of that extra code you are not able to change default formatting at all, and that takes too much time (even more, than redoing with Moodle tools). And if you have long texts (conspectus) available, those can be converted into PDF files and added to the course separately.

Remark: Although the content area is not so problematic for direct copy/paste, the description area really is. Especially in cases where you plan to make it visible on the front page (activating **Display description on course page**). If it happens, you just need to re-edit your text and remove the extra formatting (through some simple text editor copy/paste/copy workflows).

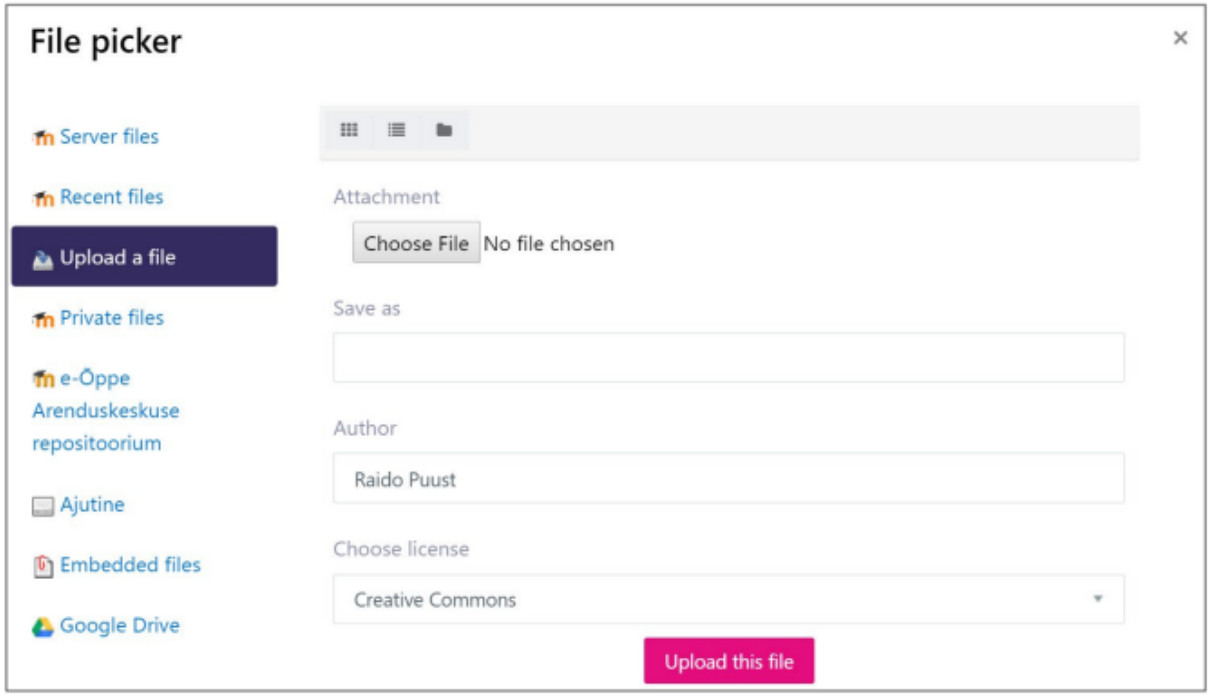
You can easily add images into your text as well. You can use separate tools for that. Let's make a simple example. Once you have your cursor in the correct location to where you want to add an image, click on the Image button.

A new dialog is displayed. Usually we want to upload an image from our computer. Moodle support most common image formats. Before uploading an image, please be sure to check its file size and width/height values. It is not recommended to upload large images (like 3000 x 2000, or image that is 10 MB etc.) if that is not used in that way (sometimes we need to share large files because of the details it gives, or students should analyse that image somehow). So, all in all, if your image in the text area is larger than 800 pixels, please consider cropping it. By doing this, you are also reducing the file size automatically. Depending on Moodle settings, it is not always that clever image sharing is used, and we may see too large images in our pages or text areas. Yes, you can do some cropping also in Moodle directly, but keep in mind that you have more control to do image preparation outside of Moodle. We simply do not want to let students wait for the page to load, because we are using a very high-quality image.

Back to the dialog, if you want to add image from your computer, click on: **Browse repositories...**



New dialog opens. Check that you have selected **Upload a file** and then click on: **Choose File** (it depends on your browser language settings, how it is named or displayed).

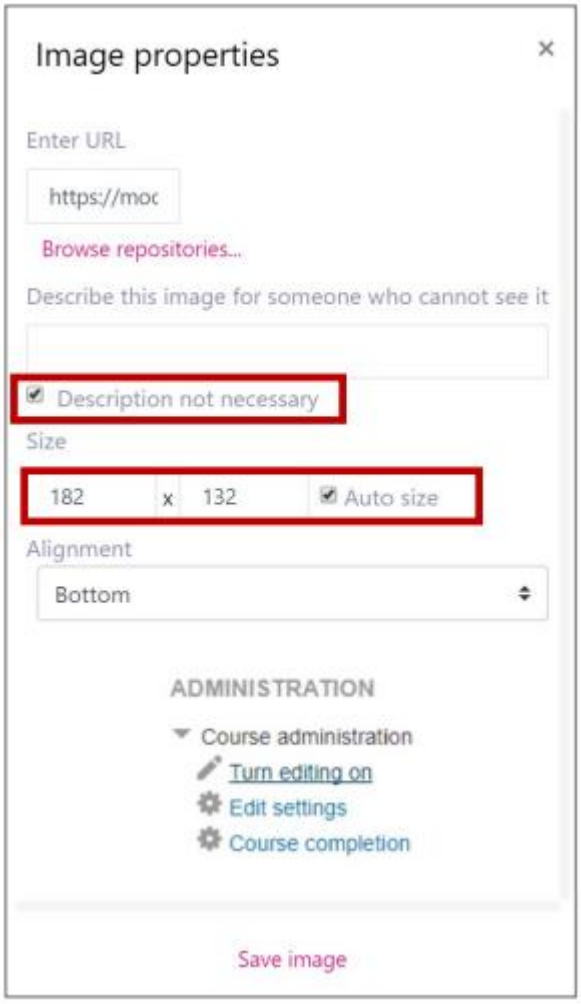


Please navigate to the location in your computer, from where you want to upload an image. Select it and back in Moodle, click on **Upload this file**. Dialog **Image properties** is shown again.

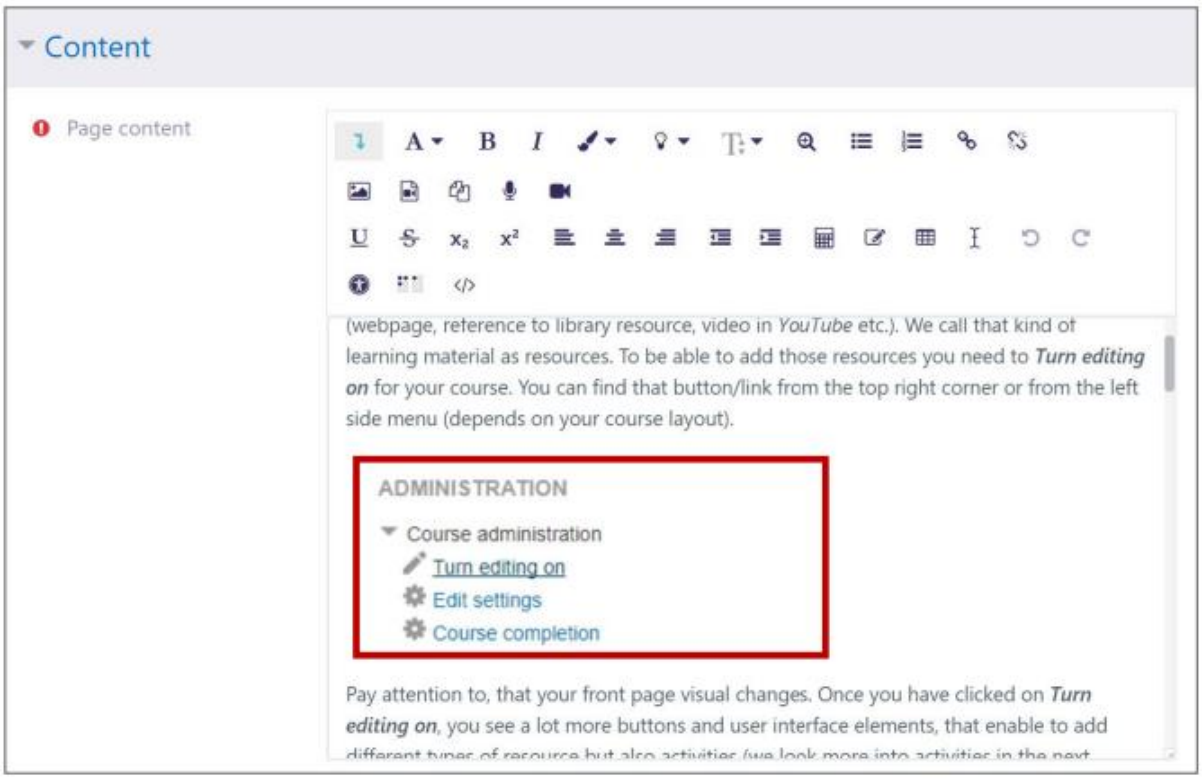
In this dialog it is important to pay attention to the following settings:

• **Description not necessary** - you can select this box if you want to add an image without an description

• **Size** - check that the first number is not too large, usually the max width of 800 pixels is enough, before overwriting this number (if it is more than 800), please ensure that you have selected the box **Auto size** first. This ensures that image cropping keeps the original aspect ratio. Once you overwrite the first value, and click in the following (height) box, this will change automatically.

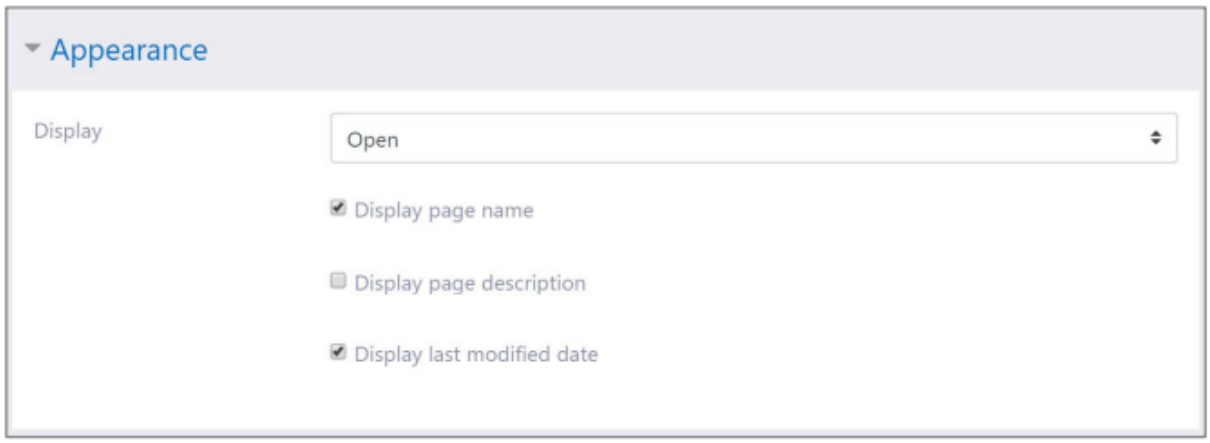


Once you have taken care of those edits, click on Save image and it will be added to your Moodle page (to the location of your mouse cursor, but if needed you can shift it or copy/paste to some other location).



You can continue to add some more text, images. You can also add tables, change text font, make text in bold or italic etc.

After working with the content, please also check the section: **Appearance**



For Moodle page, it can be presented in the same tab/window, because we keep the course layout components and top menu that enables to navigate back to the course front page or some other location. Therefore, we keep **Display = Open**. If you want to, you can set it up as a pop-up, and using the same width x height as always (like 1000 x 600).

Other settings are currently not important, so save your page by clicking: **Save and return to course**

You have successfully added a new page to your Moodle course that can be found from your course front page. If you want to edit its location, you can do that as with any other item on the front page (using cross-hair icon/symbol and holding down left mouse button while dragging).

Summary

You have successfully added a page to your Moodle course. You should be able to add any kind of page in the same manner. To be able to create a nice-looking page, you have to spend some time. You should always pay attention to its readability and general structure. Your images should have enough detail to understand, your text should shine out but do not overuse text colour tools and/or make everything in bold or italic. Once you plan to write longer texts with this tool, it is recommended to save/copy several times during the writing process. You can also copy/paste this text into your computer as well (just to have a backup copy).

If you need to fix or change some settings, you can edit settings by clicking on the Edit button (at the end of the row).

From the same menu you can hide the link (not visible to a student) or delete it (can't be undone). You can also indent (move) the current learning resource to the right/left. If you plan to add a similar type of content, you can first select **Duplicate** and then make modifications to the fresh copy. If you want to change the location of current item, you can do that by picking up a cross-hair icon from the front of the row and just sliding it up or down.

9.4. Add a resource: File

File settings

One of the most common way to add a resource to your course is by adding a file that may refer to conspectus, chapter of a book, slides etc. In general, we should always think about adding files in a way that they can be opened in any computer (ex. Windows, macOS, etc.). Therefore, please avoid uploading files in formats like native Word or PowerPoint etc. Our study guide should always note what are prerequisites to open course materials. We should not use formats where a student needs a commercial license to be able to see the material in its full glory. The most common format to upload conspectus/slides is a PDF. In terms of file type that we plan to upload, there is no big difference. Therefore, we do an example here based on a PDF file.

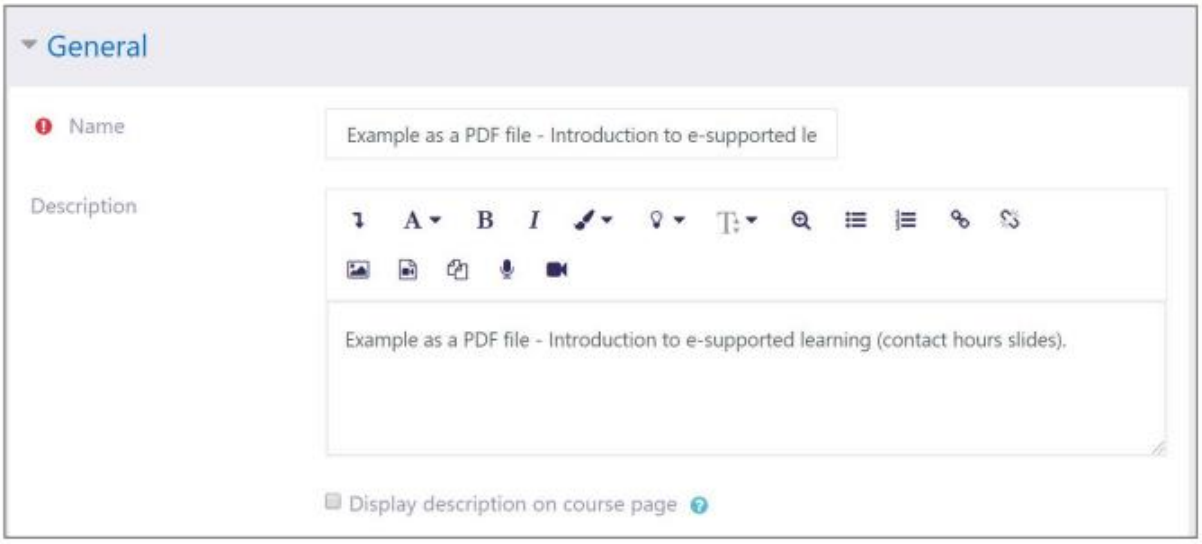
To add a page for your Moodle course, use: **Add an activity or resource**

From the pop-up, select **File**.

The Settings page is displayed. Let's look at general settings first. As you see, you must give a name to your resource. Once again, please be descriptive here and do not use just a name like **File1** or **Conspectus 1** etc.).

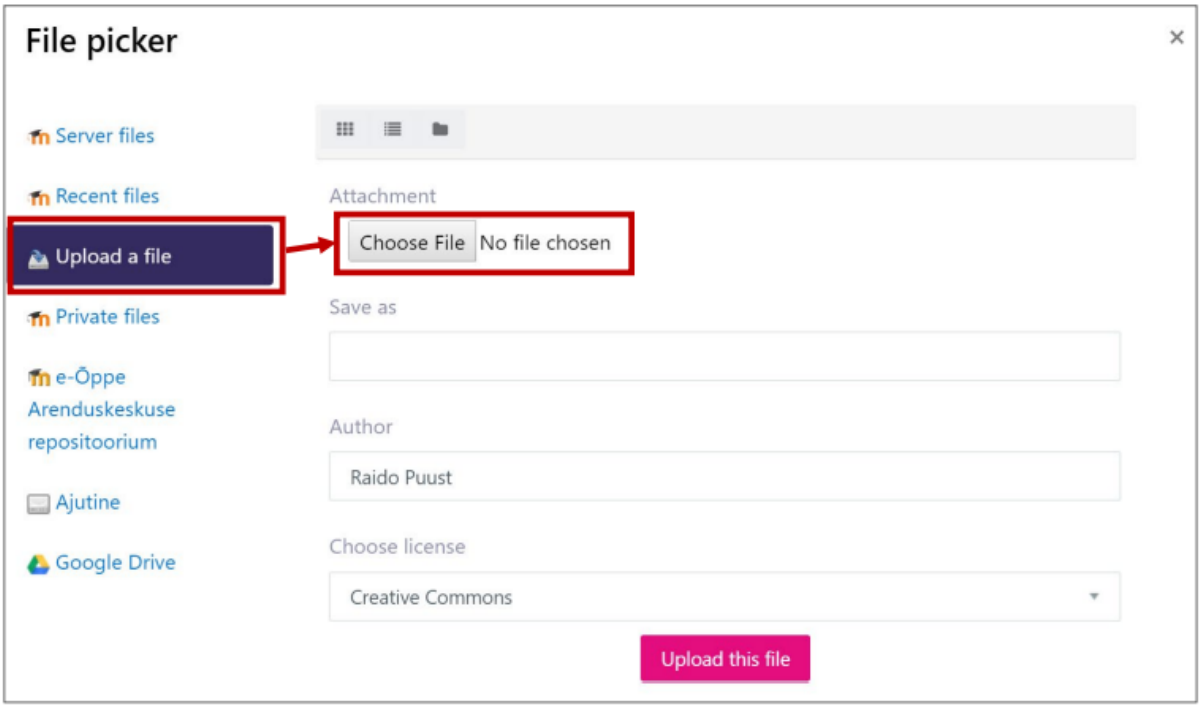
• **Name** - describe your file as clearly as possible (add a note, if it is slides or conspectus etc.).

• **Description** - this is not a mandatory field, but usually I copy/paste the name value here. It is possible that you can combine it with the option Display description on course page and then it will be shown on course front page as well (only description). But do not overuse this feature.

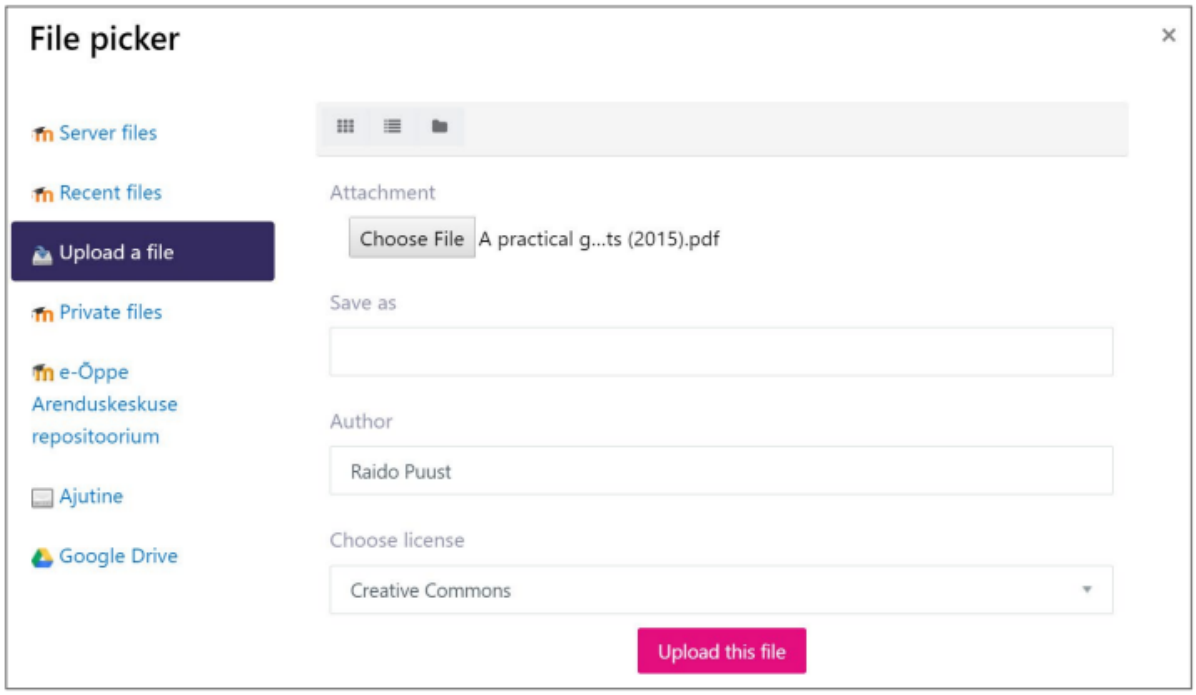


Let's move to the next section: **Content**. Here you can simply click on the blue arrow to be able to open the file picker dialog or by simply dragging a file from your computer to that blue arrow area. Let's look when file picker dialog is used.

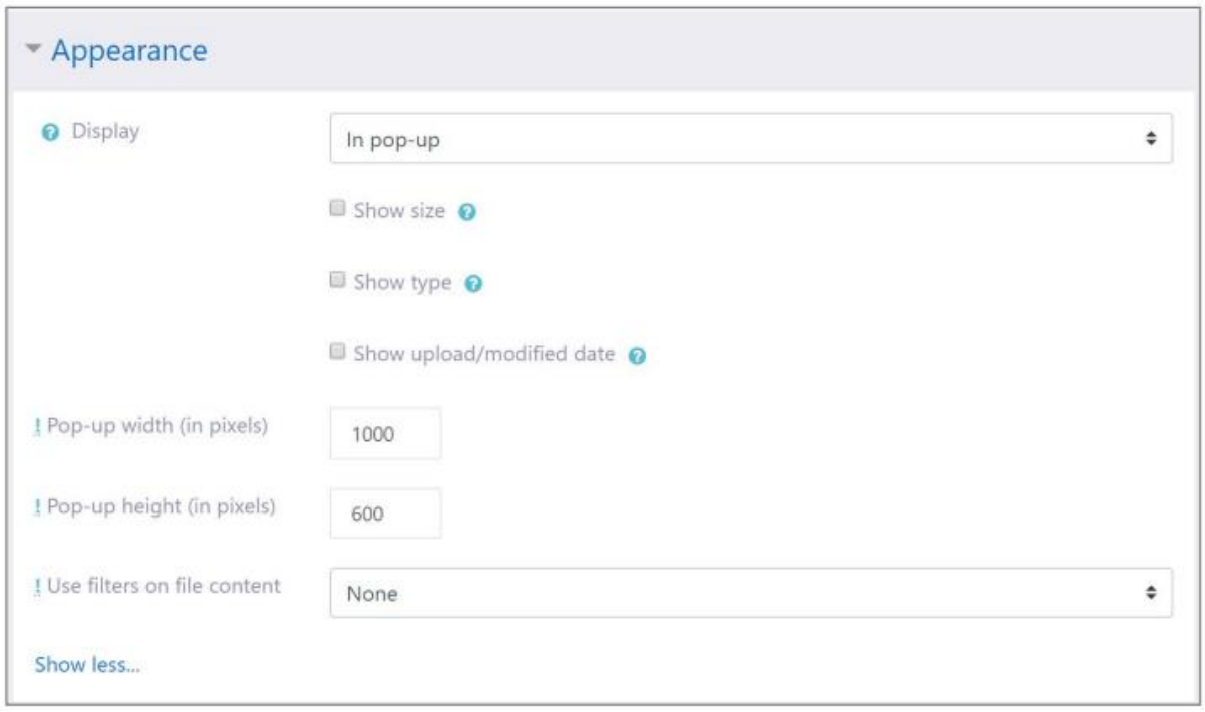
After clicking on the blue arrow, File picker dialog will open. Ensure that you first select **Upload a file** (from the left-hand side) and then click on the **Choose File** button.



Once you have clicked on **Browse** button, select a file from your computer and click on **Upload this file**.



You should now see the attached file in that box, and we can move forward to the next section: **Appearance**



In general, it is recommended that all conspectus (including slides) open in a separate tab or as a pop-up. In that case we are not directing students away from the Moodle learning environment. It is also important to note that all pop-ups are defined in the same manner.

Recommended settings therefore are:

• Display = In pop-up

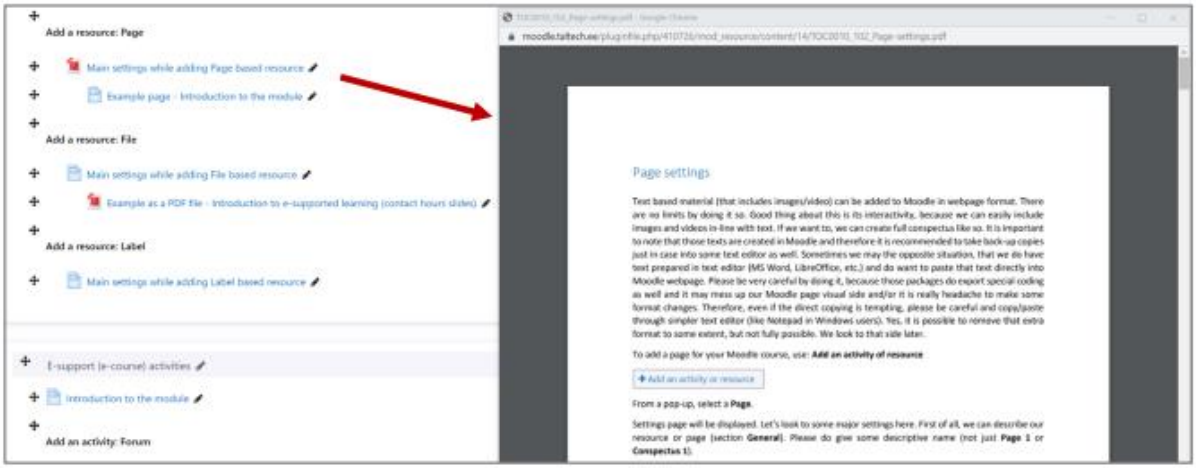
• Pop-up width (in pixels) = 1000

• Pop-up height (in pixels) = 600

Remark: Width / height should be chosen in a way that the text is readable once the pop-up opens and we do not need to make it larger as a first step.

Other settings are not currently important, and we can simply click on: **Save and return to course**

You will be returned to the course front page and by default your new link is added to the end of the section. Please check that the link is working.



Summary

You have successfully added a file to your Moodle course. You should be able to add any kind of file in the same manner. If you need to fix or change some settings, you can edit settings by clicking on the **Edit** button (at the end of the row).

From the same menu you can hide the link (not visible to a student) or delete it (can't be undone). You can also indent (move) the current learning resource to the right/left. If you plan to add a similar type of content, you can first select **Duplicate** and then make modifications to the fresh copy. If you want to change the location of current item, you can do that by picking up a cross-hair icon from the front of the row and just sliding it up or down.


Main settings while adding Page based resource
Edit
Example page - Introduction to the module
Edit
Edit
Add a resource: File
Main settings while adding File based resource
Edit
Example as a PDF file - Introduction to e-supported learning (contact hours slides)
Edit
Add a resource: Label
Edit settings
Move right
Move left
Hide
Duplicate
Assign roles
Delete
Main settings while adding Label based resource
E-support (e-course) activities
Introduction to the module

9.5. Add a resource: Label

Label settings

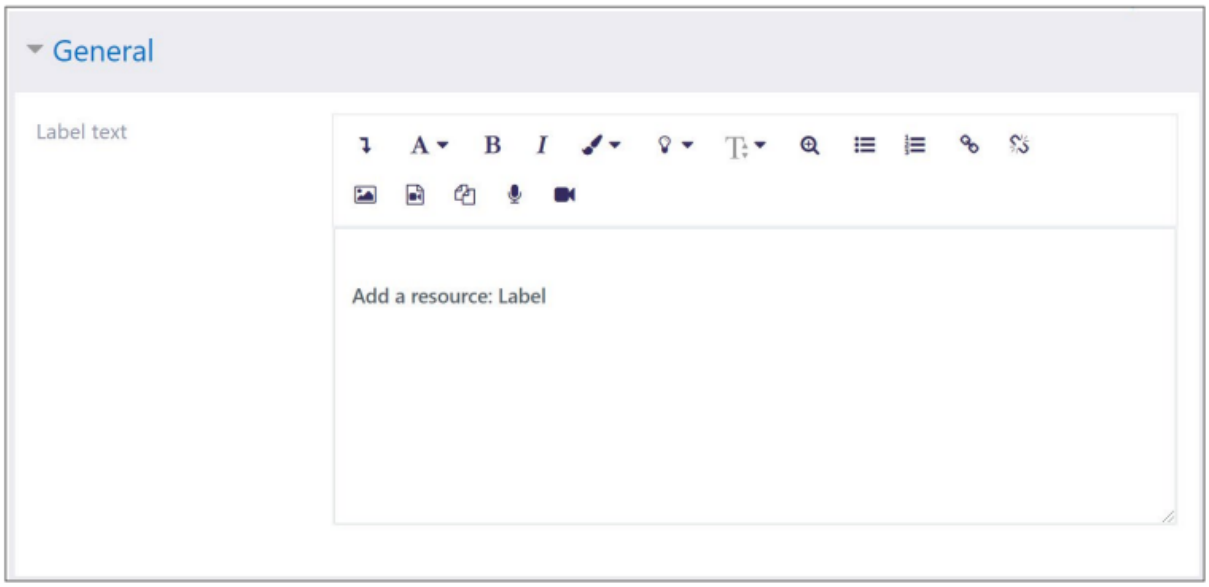
Moodle resource **Label** can be used to organize your section's content and to make things easier to find. Quite often it is used for adding subsections headings.

To add a label for your Moodle course, use: **Add an activity or resource**

From the pop-up, select **Label**.

General settings will be displayed and most important field to fill in, is label's text: **General > Label text**

You can add a subsection's heading into this box and all text editing tools are available to format it (including bold/italic, colour etc.). It is recommended to add an empty row just before the text itself, because otherwise this text might align too closely to the previous resource/activity. Use SHIFT+ENTER (Windows) to add an empty row.



Other settings are not currently important, and we can simply click on: **Save and return to course**

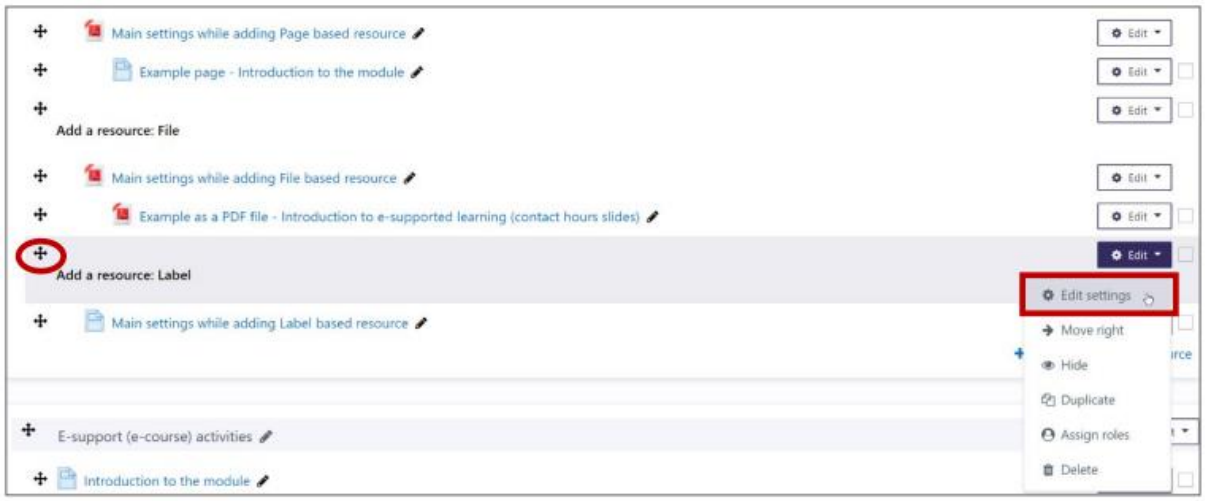
You will be returned to the course front page and by default your new label is added to the end of the section. Please check that the label is correctly written.

Summary

You have successfully added a label to your Moodle course. This is the easiest method to organize/structure your first page layout/content. You should be able to add any kind of label

(sectioning text) in the same manner. If you need to fix or change some settings, you can edit settings by clicking on the **Edit** button (at the end of the row).

From the same menu you can hide the link (not visible to a student) or delete it (can't be undone). You can also indent (move) the current learning resource to the right/left. If you plan to add a similar type of content, you can first select **Duplicate** and then make modifications to the fresh copy. If you want to change the location of current item, you can do that by picking up a cross-hair icon from the front of the row and just sliding it up or down.



10. E Support (e-course) activities

10.1. Introduction

Once course main settings are set and you have added some content (learning materials) to your course, you can move on and add elements that describe the learning process. E-supported learning is not just about sharing the learning content (material, files), but also a support of a learning process in between contact hours. Therefore, different types of activities that help to get involved in the learning process, are crucial part for e-supported learning, including the possibility to get answers to your questions (ex. through a forum), present assignments as file uploads and get feedback/grading accordingly (if needed, a reupload of an improved assignment), pass self-reflection quizzes etc. Before you can add activities to your course, you need to enable course editing mode.

In this module we mainly focus onto the following activities:

- Forum - enables to ask/answer questions in between contact hours;
- Assignment - enables to create an assignment link, in where student can upload their homework (ex. an essay, any type of file-based solution etc.) and teacher an evaluate (send feedback) accordingly;
- Quiz - enables to create self-reflection as well as graded quizzes;
- Gradebook - Moodle gradebook settings
- Feedback - enables to add a feedback form to gather feedback from students at the end of course or in between some activities, including questions that might help to get answers how to improve the course layout/delivery.

After finishing up this module, you can add different types of activities to your Moodle course.

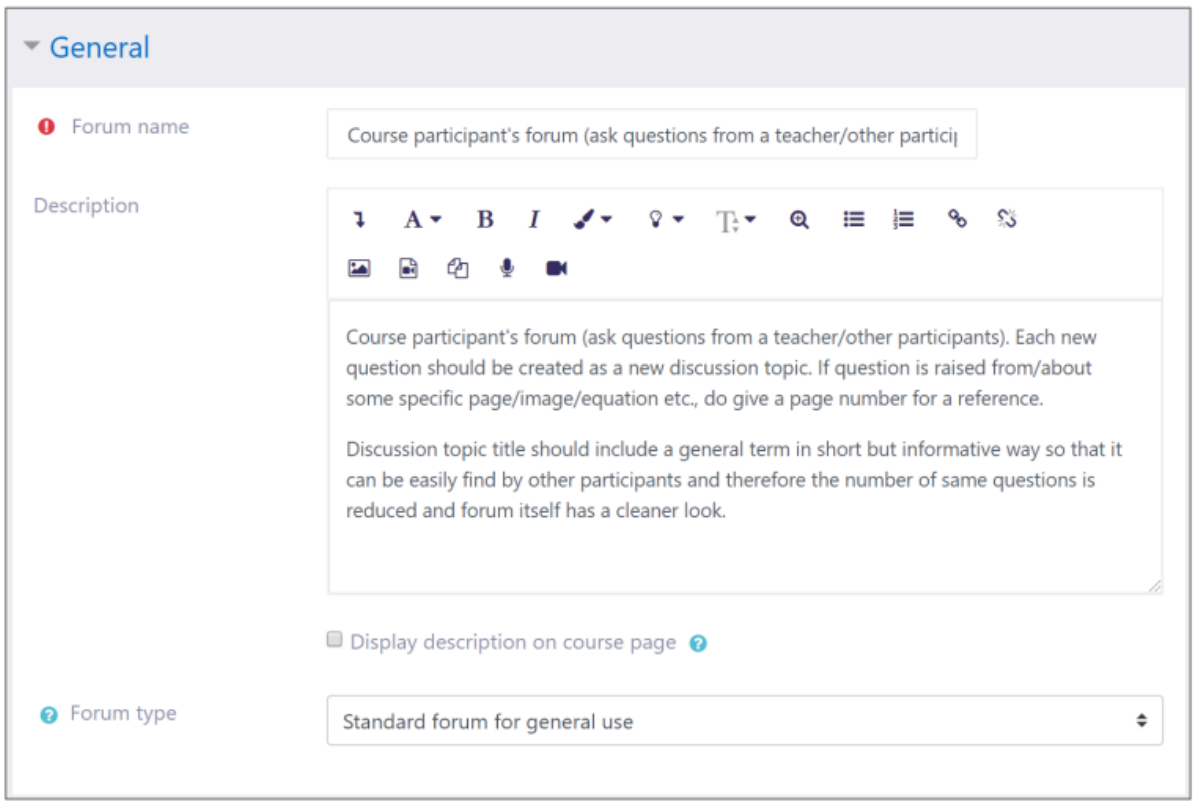
10.2. Add an activity: Forum

Moodle activity Forum can be used in various ways. The most common way is to define a possibility for students ask questions or answer to somebody's question. The course itself usually includes one forum that is meant for teacher's notes/announcements only. Quite often this is named so that it is understood by students. In general e-supported learning expects at least two different forums: one for teacher's announcements and the other for students. Of course, you can use a separate forum for each module as well, if you want to.

You add a forum by clicking:

From the opening pop-up select **Forum**. Once clicked, you see a new page, in where you can add different settings/information. Let's look how to set it up.

In the first section, **General**, you can give a name to your forum and description. Description is important, because in here you can describe how you expect to use this type of activity.

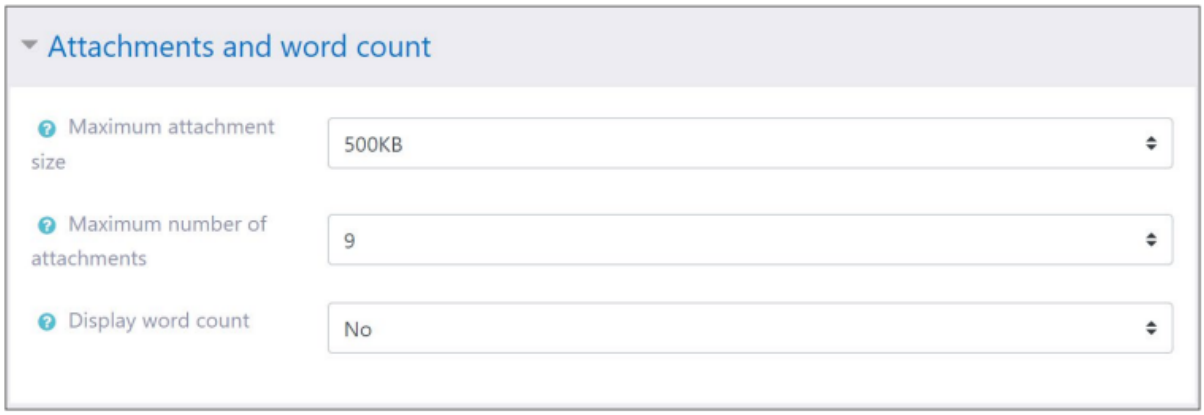


From the same section you also find a forum type selection box. Because we are creating a general forum (students can ask/answer), the most appropriate type will be: **Forum type > Standard forum for general use**

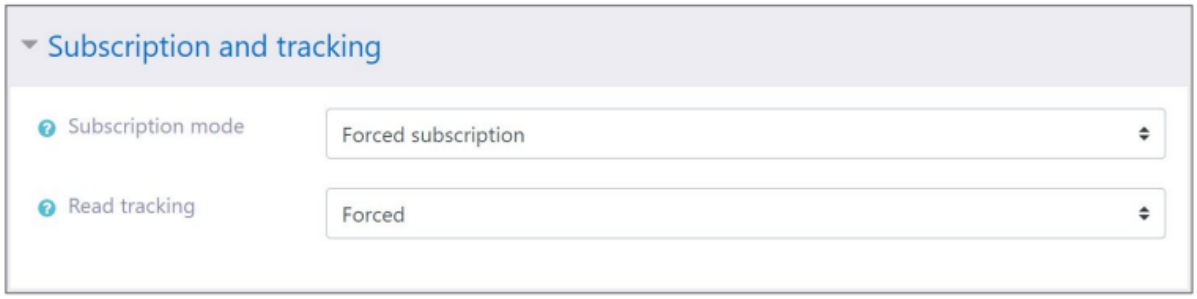
Remark: If you are interested about other forum types, you can click on question mark icon that shows some more information about that setting.

Next section, **Availability**, defines the dates when the activity is available. We do not change anything here, meaning that we do not limit the use of the forum in terms of dates.

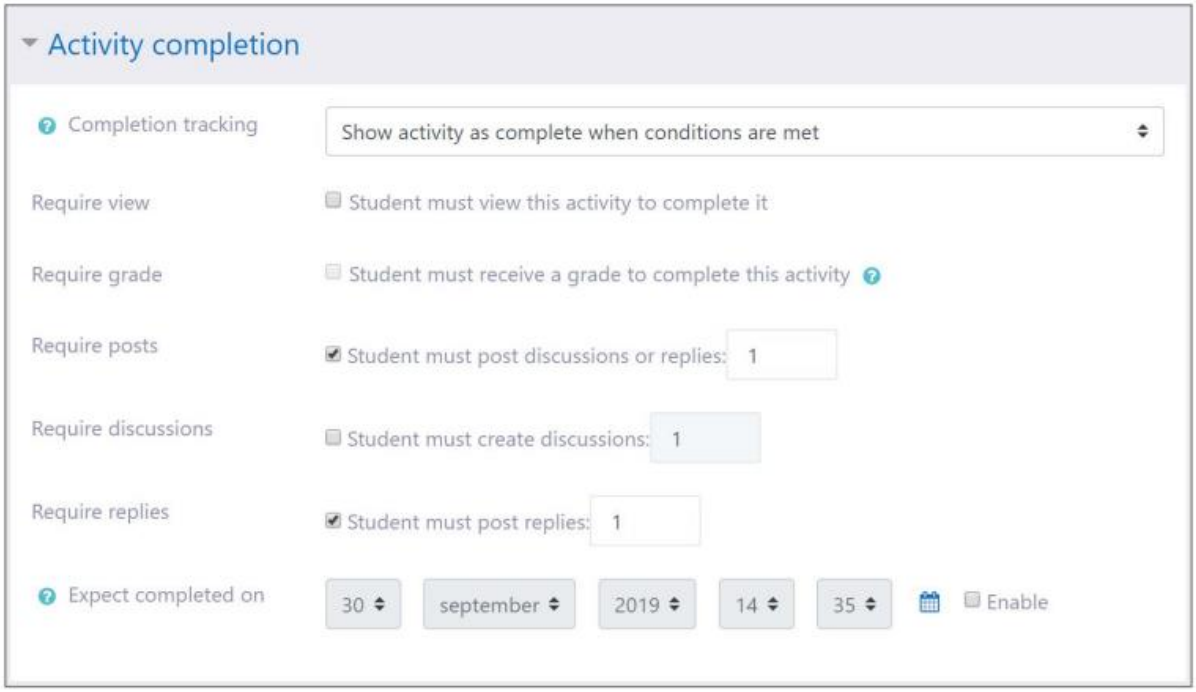
In the section, **Attachments and word count**, you can define, does a forum topic include also an attachment. In general, it is recommended to allow this setting at least to some extent, so that user can add a descriptive file with her/his question. Pay attention that this file is visible to all participants. Let's keep the default settings.



In the section, **Subscription and tracking**, we define how students are notified about new forum topics/posts. If the selection **Subscription mode = Forced subscription** is selected, it means that students are always notified, and they are not able to unsubscribe. There is also other common way to set. It is called **Auto subscription**. This, by default subscribes the participant, but the participant can turn those notifications off, if they want to do that.



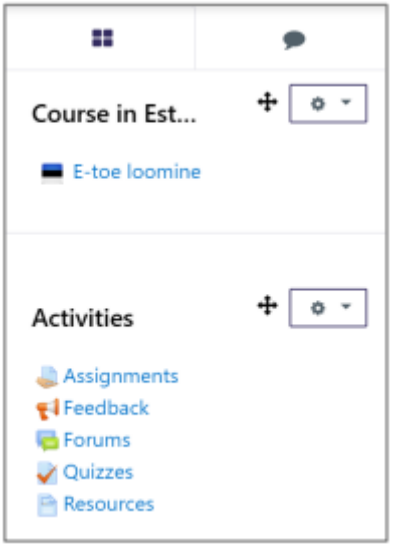
Section **Activity completion** is not activated by default. On the other hand, the forum is the easiest way to get all participants into the discussion. If we activate the activity completion setting, we can force students to ask questions (and give answers to other questions) before they can move forward in the course. This feature can be used for example in cases, when they must ask questions about material content they read. Therefore, it can be used to prepare flipped classroom in where students are well prepared before they attend to contact hours. We talk about that in later guidelines.



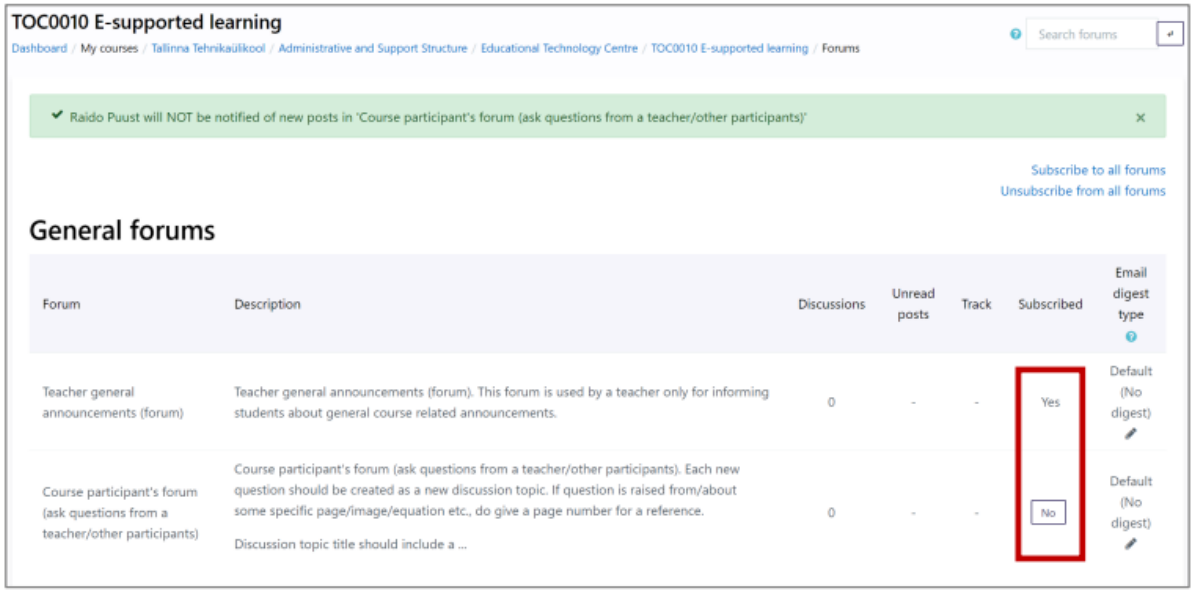
We do not need to tune up any other parameters/settings, just hit **Save and return to course** button.

You are back on the course front page. The result may look like this.

We have mentioned before that forums can be used (by the teacher) to remind students some important activities that are soon to come. We also mentioned that forums can be set up differently, in terms of subscription type. Student can tune her/his preferences on the forums main page. If we have added activities as a block into our course (explained in an earlier guideline) we can quickly click on Forums link.



New page is displayed where we see how we are subscribed to the forums and if we can change that. Please keep in mind that you as a teacher can also control how to get those notifications. And if you forget to check that step after resetting your course for a new semester, it may happen that you notice too late that you have not answered to some of the questions (because you were not subscribed, and just occasionally you are not checking those forums - can be organized also like so).



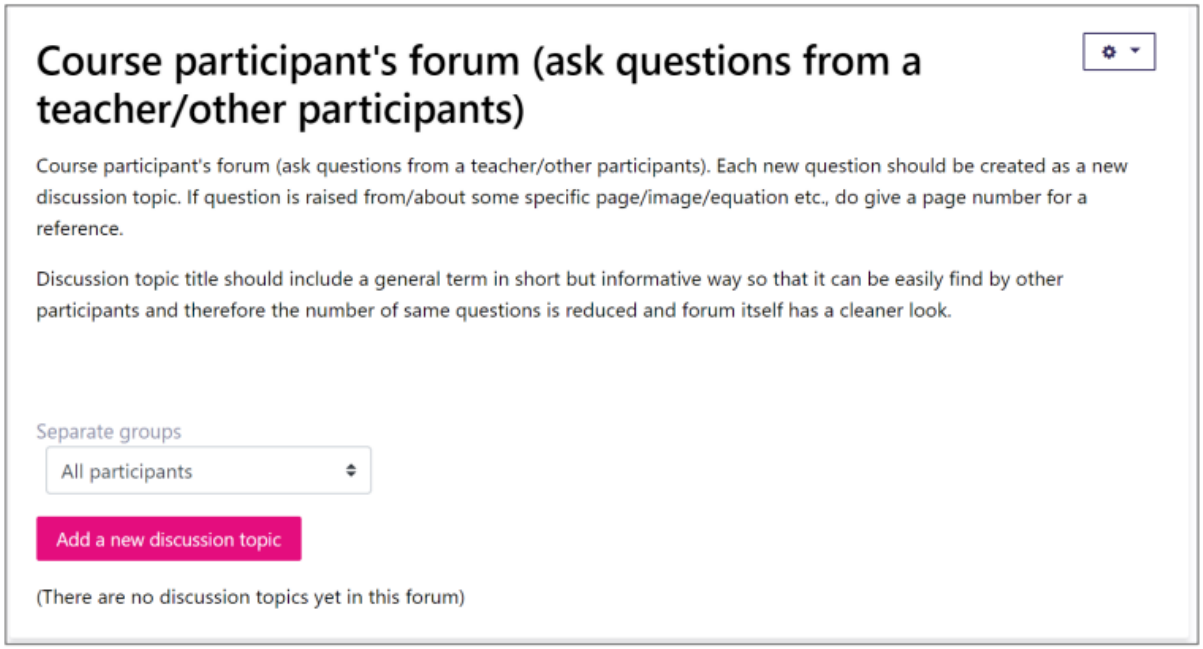
From this page you can easily recheck (as well as student) what is happening in the course forums (especially when there are more than one). How many new discussions there are, that are unread by me? To which forums am I subscribed, and in where I can change that specific setting (from Yes to No or No to Yes). If the subscription setting is Forced subscription, it cannot be changed, but for example if it was defined as an Auto subscribed, it is possible to change it.

Remark: It is good to think about those settings carefully, how we set up forums and which settings we do let to change. Just remember, that student can do same changes as we as teachers

(subscribe, unsubscribe - if it is allowed). We do want to keep the discussions going, therefore my recommendation is to enable subscriptions as much as possible.

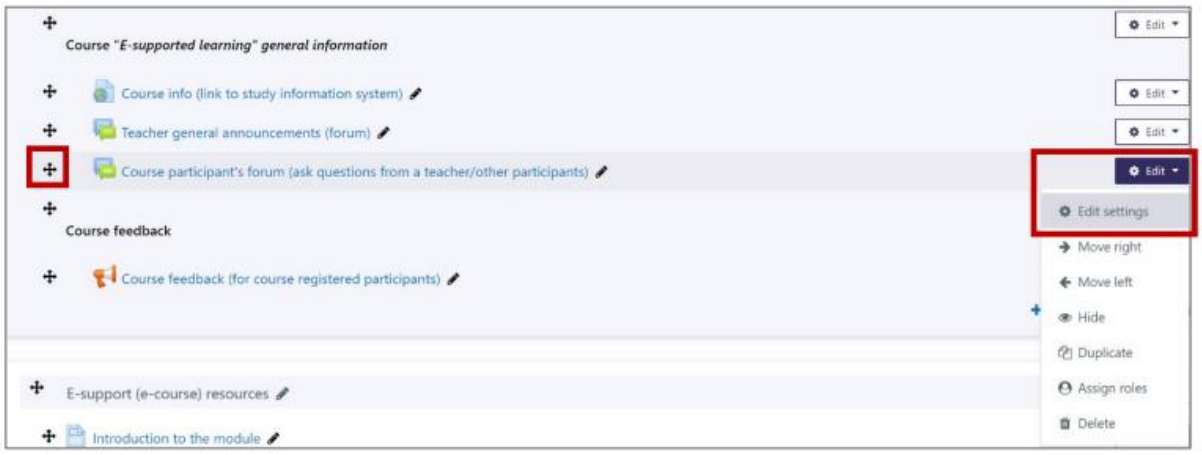
Remark: If you are afraid that by automatic subscription you will get too many emails, then you can define a filter that delivers some specific messages to some specific mailbox folder and in that way you are not notified about each new email or post in live (you can also make it so that you get just one email per day from one specific forum).

Once you have added a new forum to your course, let's come back to the first part we also discussed already. If you click on a forum link, you will see the general introduction about that forum with included description that defines how to use that specific forum. If you do not add this description, you may end up in quite a mess in terms of how new topics are created by students. Of course, there are always situations that topics are created not following those rules, but at least you have something to point out and make a remark about that.



Once we move forward by describing different activities that can be created in Moodle, it is important that those have some description. This a major difference from resources where you mentioned that it is not so important. But with activities it is just the opposite. We can help students to merge into the learning process and it makes things a lot easier for us as well if we can quickly refer to that description or additional guideline, how it should be used. E-supported learning does mean supporting learning.

Summary You have successfully added a new forum to your course to engage the discussions in between contact hours. If you need to fix or change some settings, you can edit settings by clicking on an **Edit** button (at the end of the row).



From the same menu you can hide the link (not visible to a student) or delete it (can't be undone). You can also indent (move) the current learning resource to the right/left. If you plan to add a similar type of content, you can first select **Duplicate** and then make modifications to the fresh copy. If you want to change the location of current item, you can do that by picking up a cross-hair icon from the front of the row and just sliding it up or down.

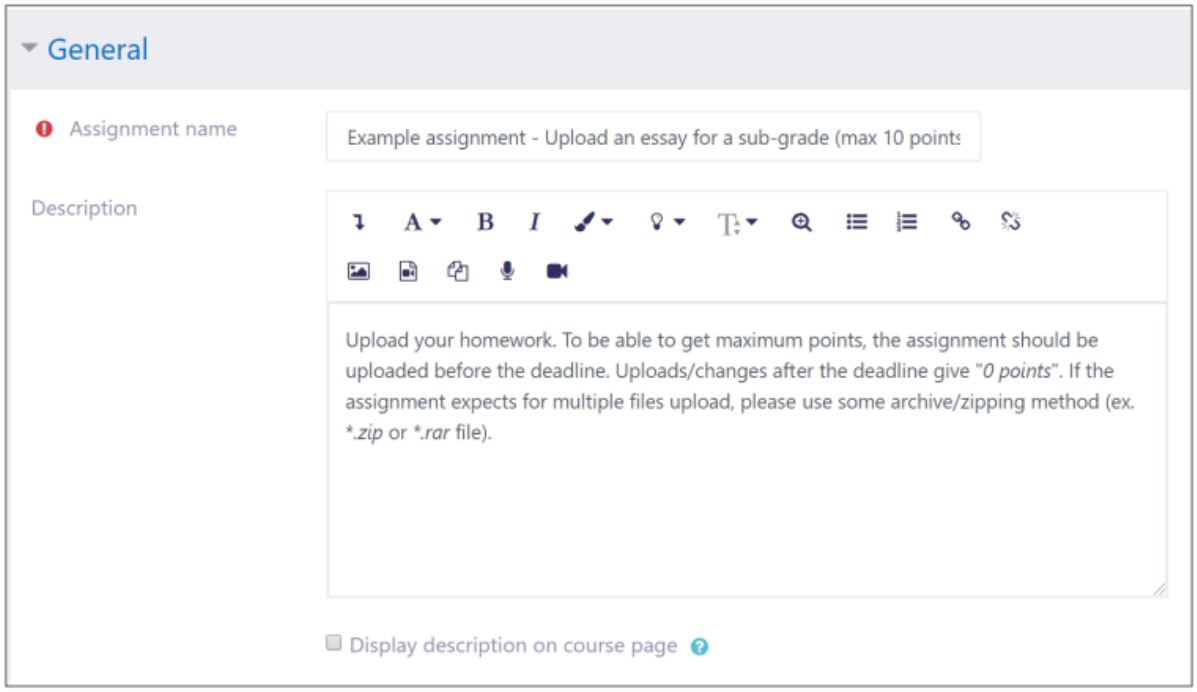
10.3. Add an activity - Assignment

Moodle activity Assignment can be used to make a portal where student can upload her/his homework. Although we usually describe it as a file-based homework, there are possibilities that student writes a report to a special assignment area itself. But the assignment can be used to present/upload a labs report, an essay or what-ever calculation or program result/file that was assigned to a student.

You add an assignment by clicking:

From the opening pop-up select **Assignment**. Once clicked, you see a new page, where you can add different settings/information. Let's look how to set it up.

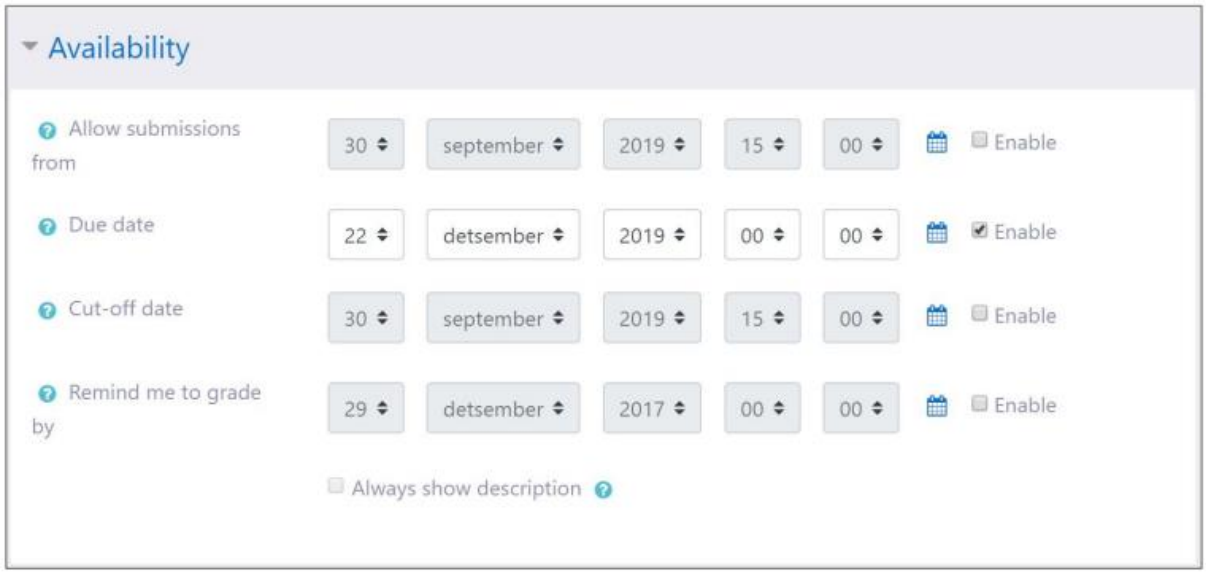
General settings are shown first. With each resource/activity we need to be extra careful how we name our content (it simply should be descriptive). Then comes the description area itself, where we describe how this assignment should be presented, and if there are some special guidelines in other form, we simply refer to it (maybe it was given also in a study guide, then we refer to that document).



Assignment name may also include a notification how many points it gives (if it falls into graded category). Try to avoid names like **Exercise 1** , **Homework 12**, etc. Just like with other activities, it is important to describe the process how the presentation should be made. Field Description is given for that and we should not underestimate that.

In the section **Availability** we define what is the submission period (date, time). We can also define cut-off date, but in case it is required as a prerequisite, we probably do not want to pick that option, otherwise we need to think, how we can get that homework from student if she/he can't upload it because the submission deadline doesn't allow to do it. Is there any alternative?

Do we really want to get those in paper form then? Or maybe it is a strict rule and if student misses that deadline, she/he will be automatically "removed" from the course? Before using those strict rules, be sure to describe those in study guide. My general recommendation here is, if the student who misses the deadline, can still participate in the course (to present other homework, etc.) then I would not define that cut-off date. If the due date has arrived, we can always see that some homework was uploaded after that deadline and we can apply those evaluation criteria that was defined in those course main documents. For example, she/he gets less points when the homework arrives later.



Next section, **Submission types** I recommend setting up the following parameters:

• **File submissions** – enables to attach files as an assignment.

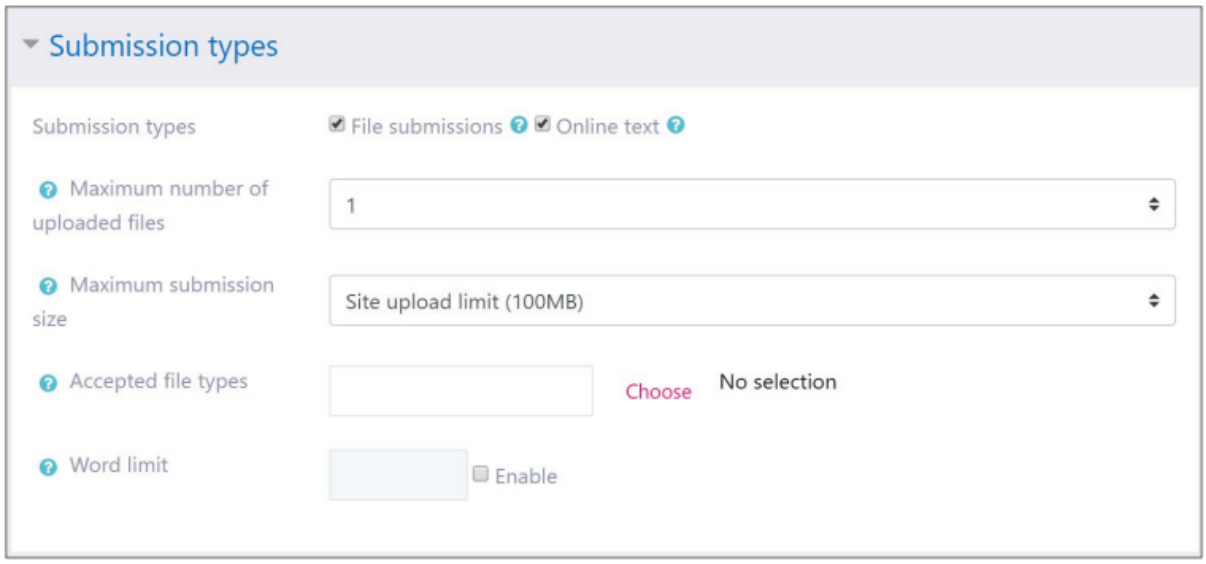
• **Online text** - it enables to include some text with your submission (for example, student can include the general process how she/he did the assignment/exercise - it can be also used as a assignment itself, meaning that all answers are given to that window and no files are uploaded). This can be also used as a reference area.

• **Maximum number of uploaded files** = 1

Remark: If the submission requires to upload multiple files, those needs to be archived first (creating *.zip or *.rar file, and this is also mentioned in our description). You can allow multiple file uploads as well, but in some cases, it makes things easier to upload and download if those are archived/zipped (getting smaller files). Of course, if the submission expects just one file, students do not need to archive it first.

• **Maximum submission size** = 100MB

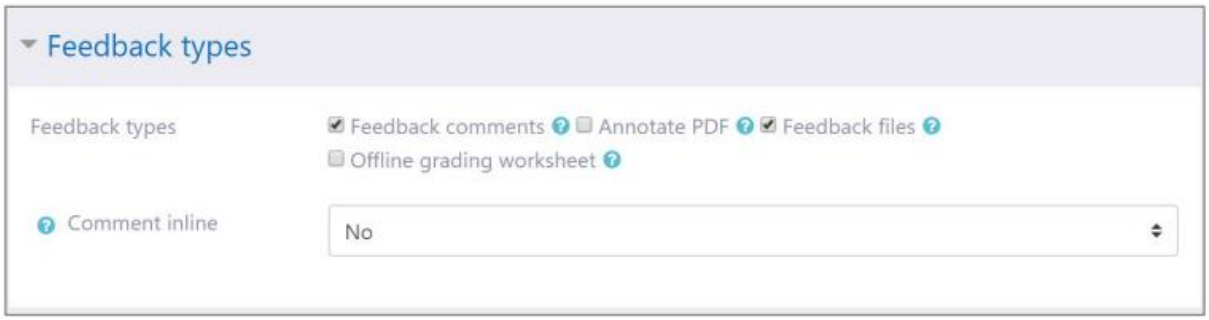
Remark: We can limit that size, if we want to force to get smaller files and/or make students think about other possibilities how to share those files and in what format.



In the section **Feedback types**, we define how I as a teacher want to give feedback to student's submission. It is recommended to pick at least:

• **Feedback comments** - extra area to leave comments about a submission.

• **Feedback files**- enables to upload comments as a file itself (including cases where a teacher would like to attach images for clarification).



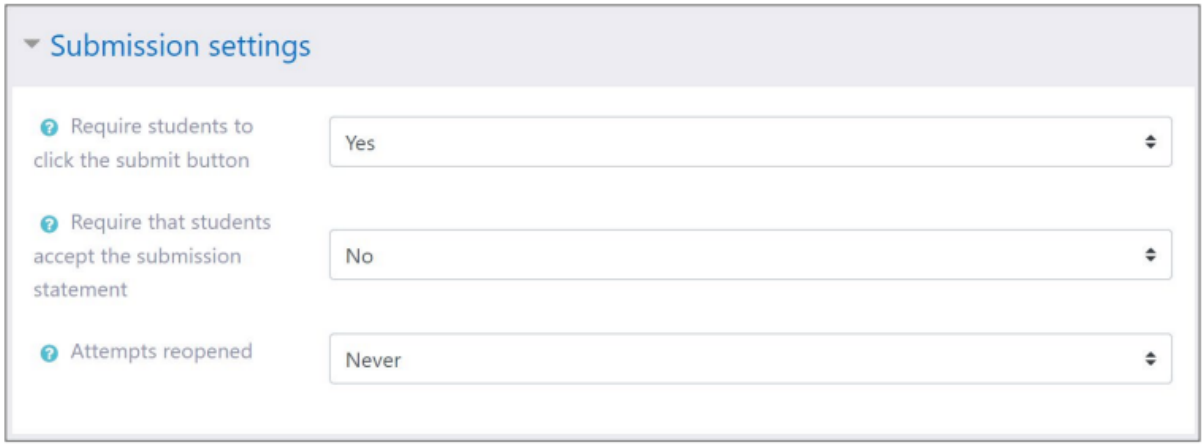
In section **Submission settings** more important selections are:

• **Require students to click submit button** = Yes

Remark: It means that after student adds a file, it is draft from her/his point of view. They can do changes, re-upload the file. But they need to submit (do that extra click) so that it will be locked and sent out as a submission. Then also teacher gets notification that new submission has arrived and ready for evaluation (or giving feedback). Sometimes this setting confuses students, as they may not see that button. This is something that we can define in our general description or in study guide.

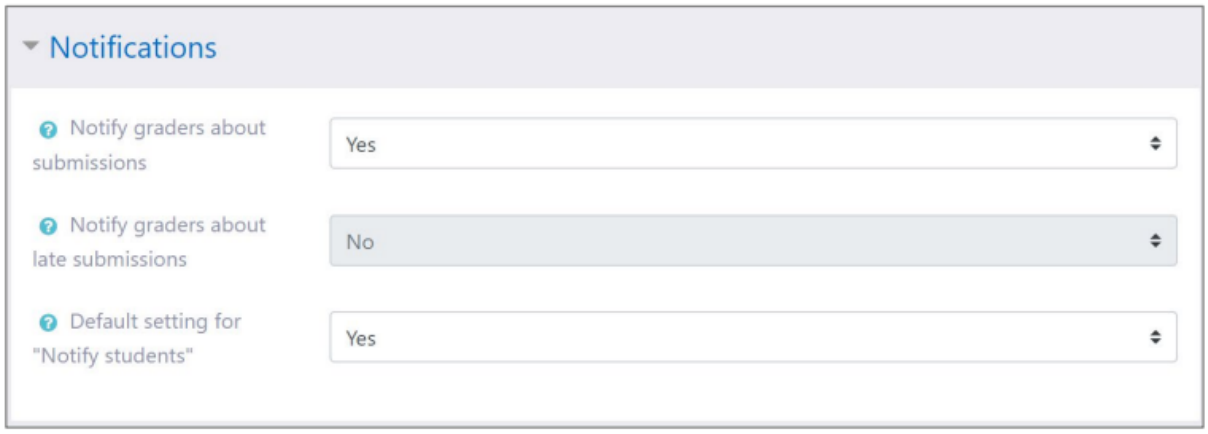
• **Attempts reopened** = Never

Remark: This means that after submission confirmation (check the previous remark), student can't edit her/his submission before it gets a feedback from a teacher and therefore may be reopened by a teacher.



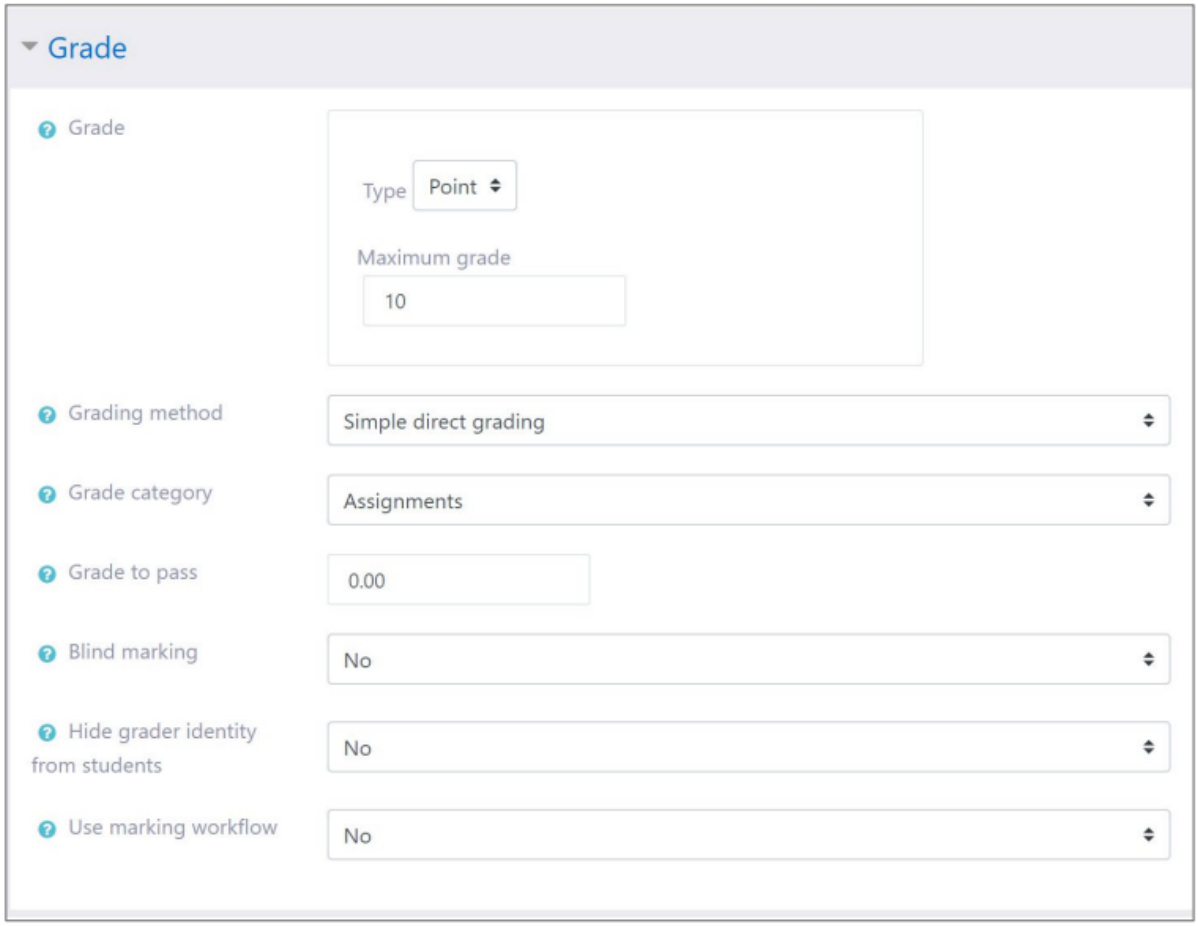
In section **Group submission settings**, we can force that group-based homework is submitted as a group submission, meaning that if one student from a certain group uploads the homework, then others do not need to do it. Also, if a teacher gives a comment/feedback or grades the submission, it will go out for those students who belong to the same group. This helps to grade homework, but we look at it in more detail in future guidelines. Right now, we just keep it turned off (**Students submit in groups** = No).

In section **Notifications** it is a wise move to think about the first setting: **Notify graders about submissions**. If we have large student groups and we do not grade homework on daily basis or "on the fly", it makes sense to keep this setting as No. But if this submission is part of a continuous learning process and students are not able to continue before it gets a green light, I recommend keeping it as Yes. In that case, a teacher is notified about each submission and can react (in positive sense) if she/he wants to check it as soon as possible or maybe a bit later but still according to her/his promises in the study guide (giving feedback within 24h, or...).



In section **Grade** we define how the submission is graded (by points, or simply passed/failed notification). By doing that we also define the sub-grade from the course total score. I do recommend inputting the value that has a real meaning from course total points. So, for example, if this assignment can give 10% of total grade, I input here **Maximum points** = 10.

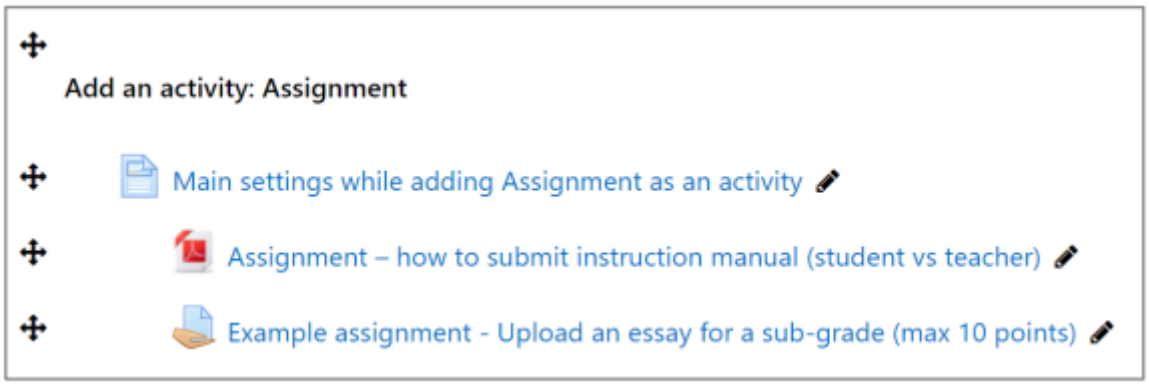
Remark: If the assignment is passed/failed type, we need to pick **Type = Scale**. Other settings can be then tuned in the gradebook (see later section).



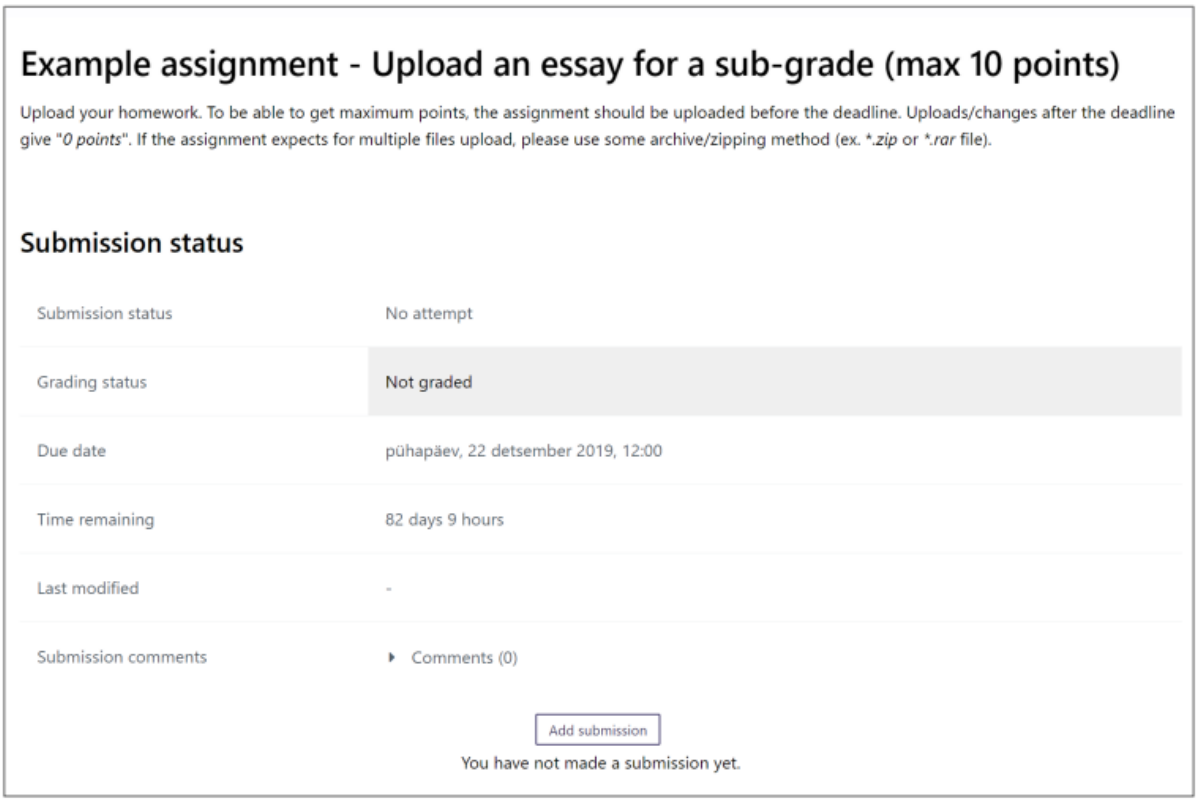
Just like we mentioned it in forums settings, we can add an activity completion setting to each of our assignments. This means that before the teacher has evaluated this assignment, student can't move forward (present the next assignment or open some other topic, etc.). Of course, this setting means high expectations from the teacher as well. Because once set up, we as teachers need to ensure that we check homework regularly, according to the note in study guide. From the positive side, if we build up the course like so, all students can learn in her/his own pace. We take another look at this kind of learning process in future guidelines.

We do not need to tune up any other parameters/settings, just hit **Save and return to course** button.

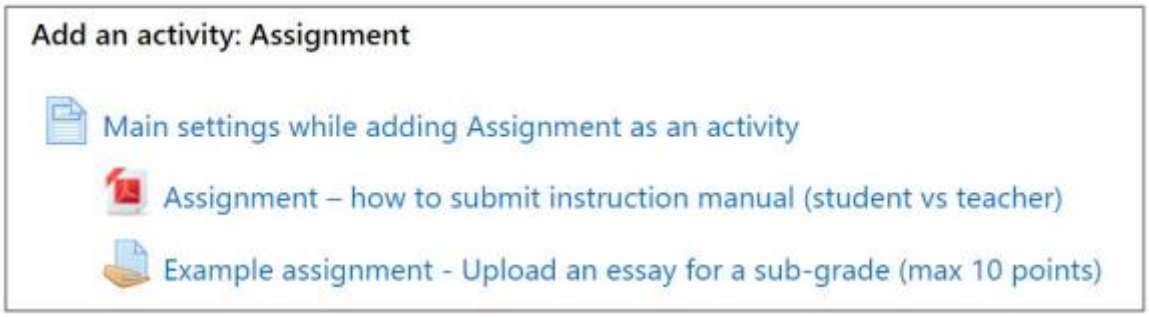
You are back on the course front page. The result may look like this.



Once you click on that link, a new page is opened, where we see the description of the assignment and a button called Add submission (in student view).



Because teacher and student views are a bit different, then it is important that we also prepare guidelines how students see the assignment page, and how she/he should act to submit the homework. We can use **Student** role for that to grab some user interface snapshots and do a simple guideline that we share just before the submission link (or add it to the general section, because there are other guidelines as well that are recommended to be prepared). Also remember that we may use different visual styles of our course, or maybe we change it at some point. By doing it, quite often we need to fix our guidelines as well. Therefore, please be careful and update all your guidelines according to your course changes. For example, an example guideline is added just before the assignment link.



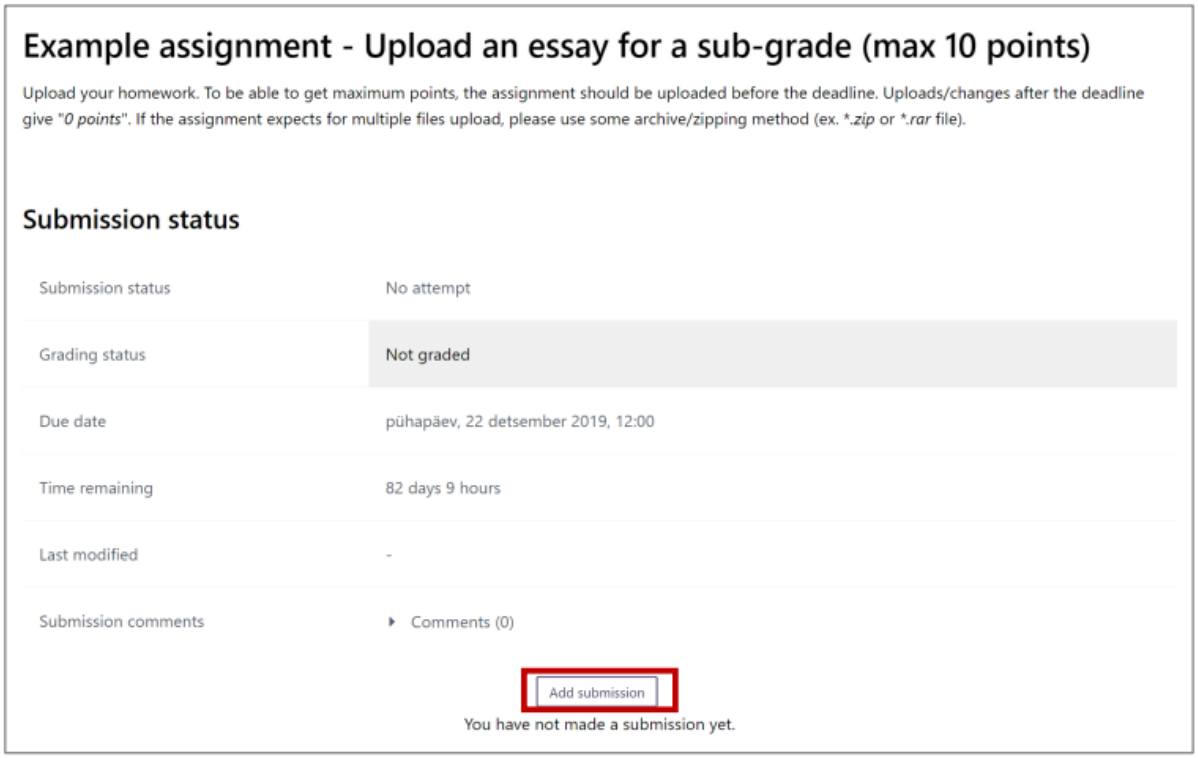
Summary

You have successfully defined a new assignment for your course that enables students to upload their homework, where teacher is giving individual feedback with grading like passed/failed or some sub-points. If you need to fix or change some settings, you can edit settings by clicking on the **Edit** button (at the end of the row).

From the same menu you can hide the link (not visible to a student) or delete it (can't be undone). You can also indent (move) the current learning resource to the right/left. If you plan to add a similar type of content, you can first select **Duplicate** and then make modifications to the fresh copy. If you want to change the location of current item, you can do that by picking up a cross-hair icon from the front of the row and just slide it up or down.

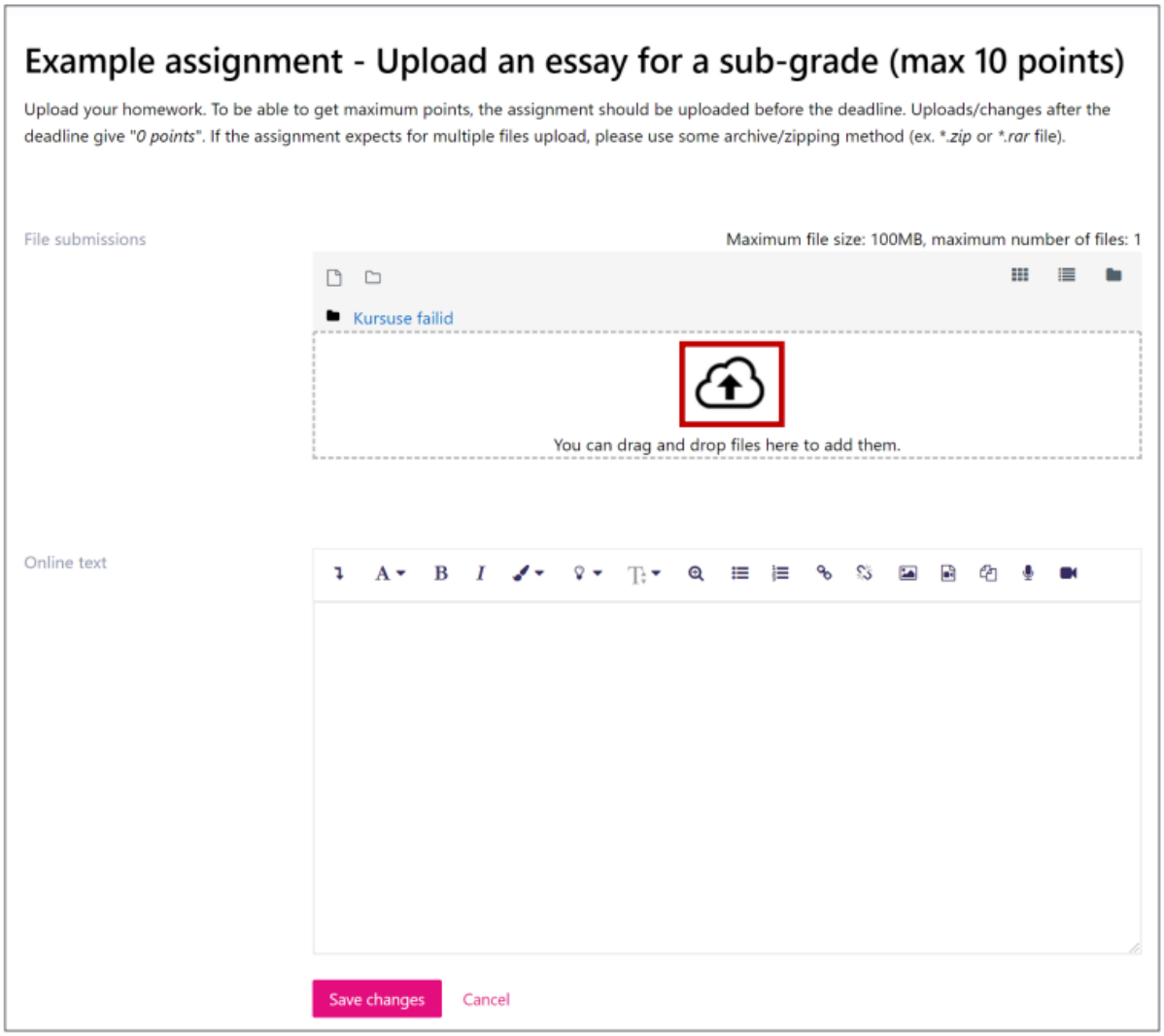
Assignment – instruction material (student vs teacher)

This guideline plays through a typical assignment uploaded by a student after clicking on appropriate link (made by a teacher). For example, once the student clicks on a link: Example assignment - **Upload an essay for a sub-grade (max 10 points)**, the following page is shown:

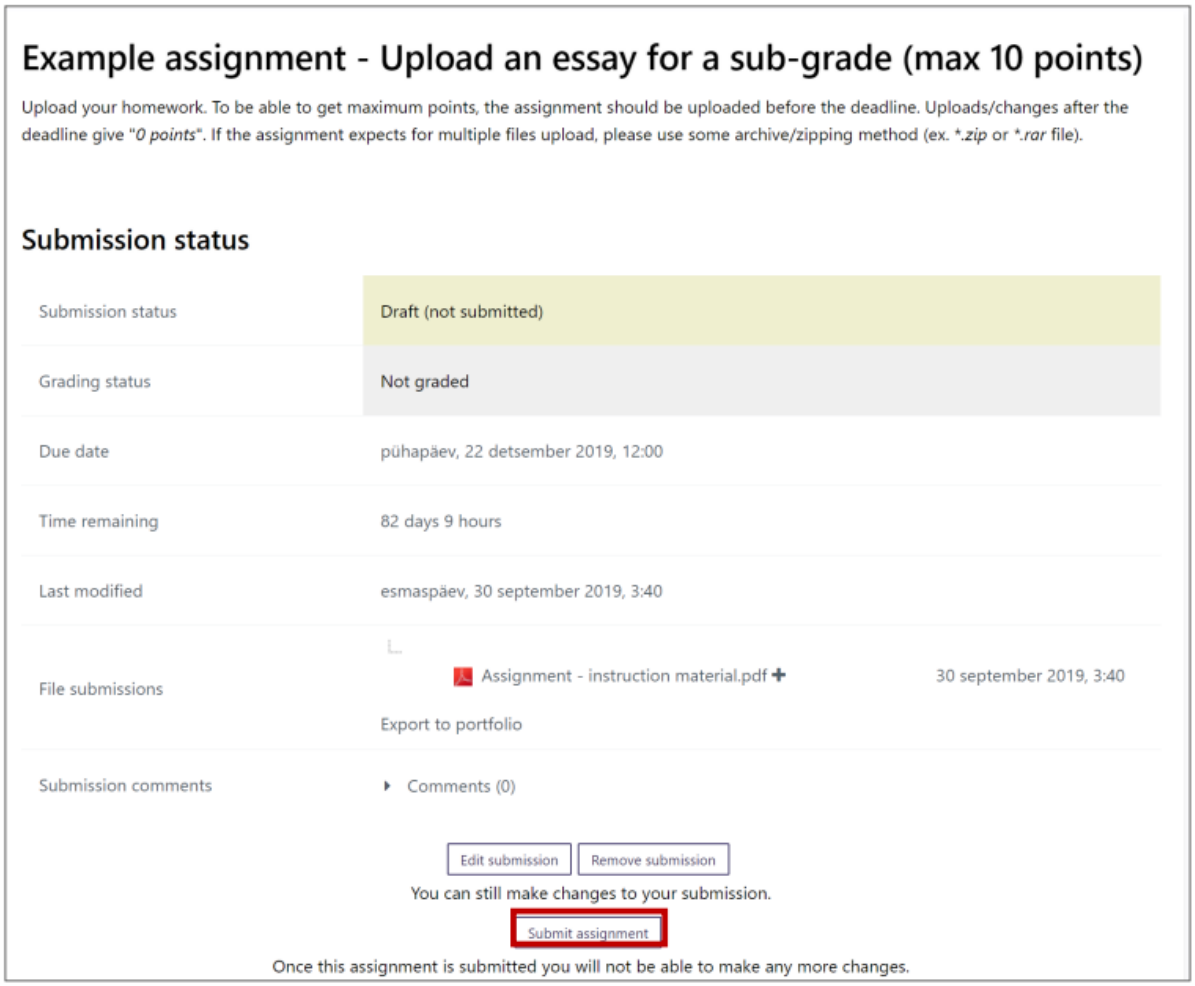


1) Click the button: **Add submission**

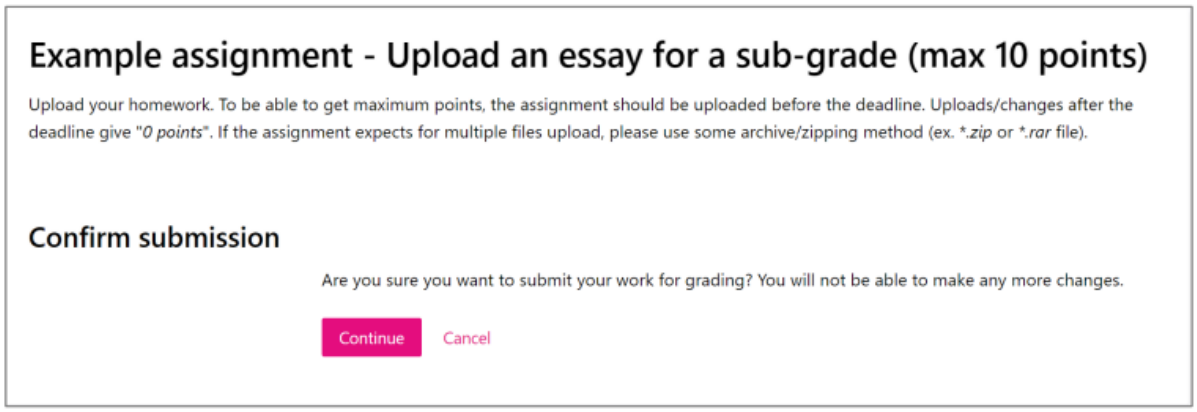
The following page is displayed. Just drag your submission file onto the arrow. You can also click on that arrow and select a file from your computer through dialogs. Then click on: **Save changes**



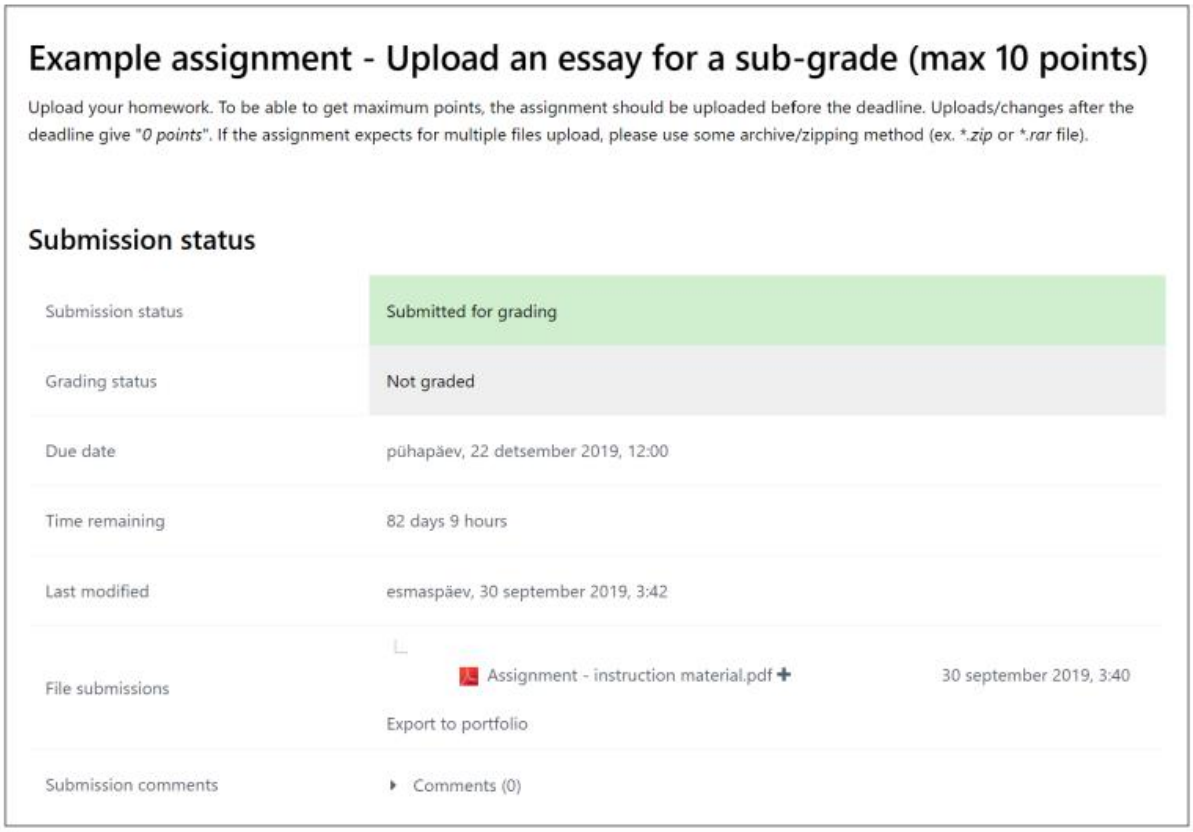
2) Confirm your submission by clicking on the button: **Submit assignment**



3) Confirm by clicking: **Continue**



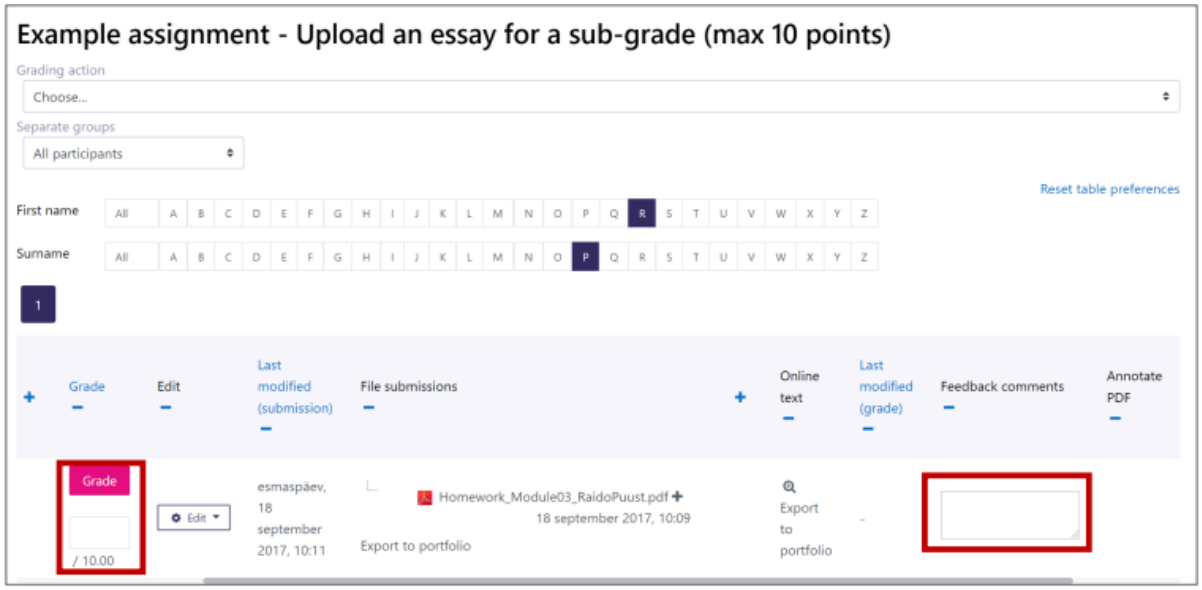
4) You get the status of your submission and you see that it is not yet graded, or if any feedback is given.



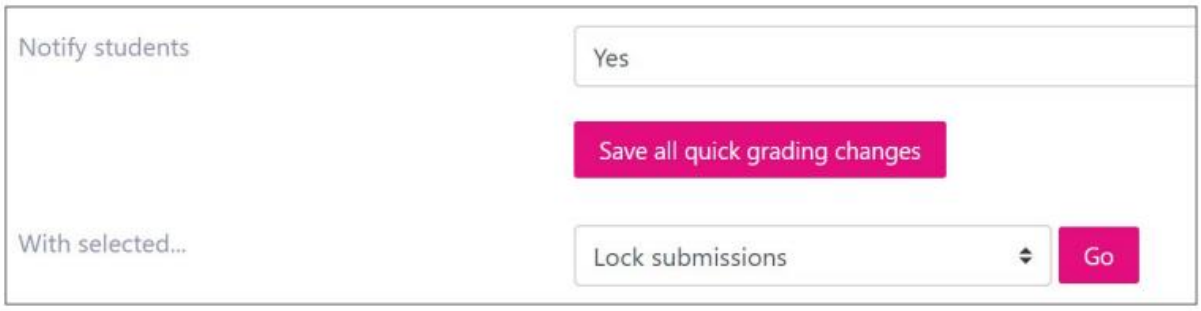
5) Wait, until teacher gives feedback. If the submission has not been graded during the time that is mentioned in the study guide, please contact the teacher.

Teacher's part (this information is only important for the teacher)

Once student has submitted the homework, teacher gets an email that new submission has been made, with the link to Moodle that enables easily to check the submission and give feedback or grade the work. Each submission can be constructively commented and marked with points or sent back to student to ask to make some changes and resubmit.



Once you click on **Save all quick grading changes**, all your comments and evaluations are sent back to the student.



If student should make changes to her/his work and resubmit, please ensure that before leaving this page, select for that student an option: **Edit > Revert the submission to draft**

10.4. Add an activity – Quiz

Quiz settings

Moodle activity Quiz can be used to create different self-assessments and/or graded type of assessments. The quiz obviously consists of questions and before we use Quiz as an activity, it makes sense to build up at least some questions first. Once we have defined those questions and divided them into several categories (based on topic/week/module etc.) we can define Moodle Quiz activity that pulls a certain amount of random questions from the question bank. Once this question bank is updated (questions added) our Quiz activity still works (no need to make changes), it simply pulls different questions or has more choices to do that on the fly.

Although the next workflow is not mandatory to follow (meaning that you can do it also in the opposite way), I do recommend getting the best experience from the workflows in Moodle Quiz logic. Therefore, in the next guideline we follow three basic steps:

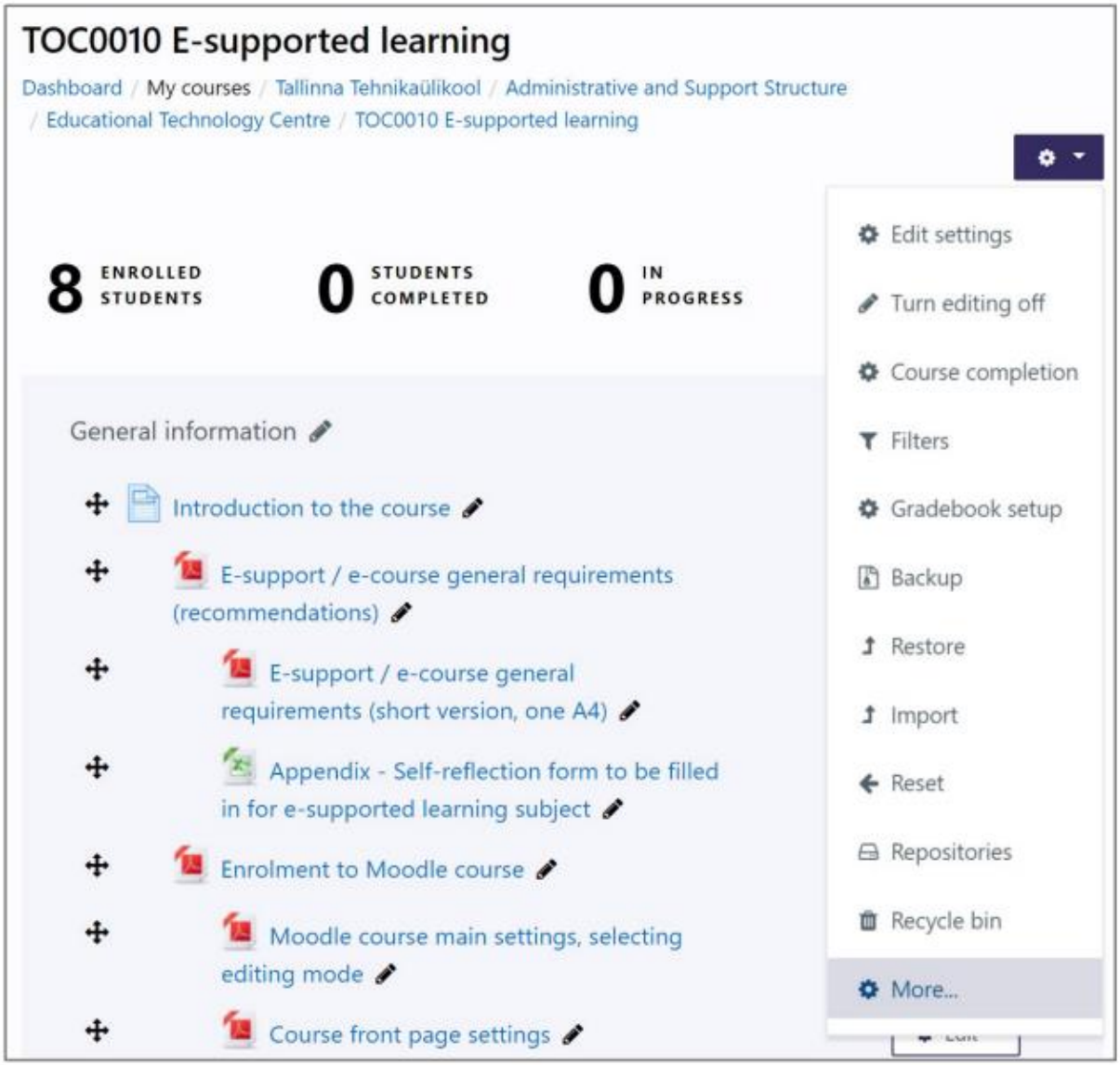
• Build some categories to where you arrange your questions, it makes things easier if you plan to pull different questions with different Quiz links.

• Create questions into those categories.

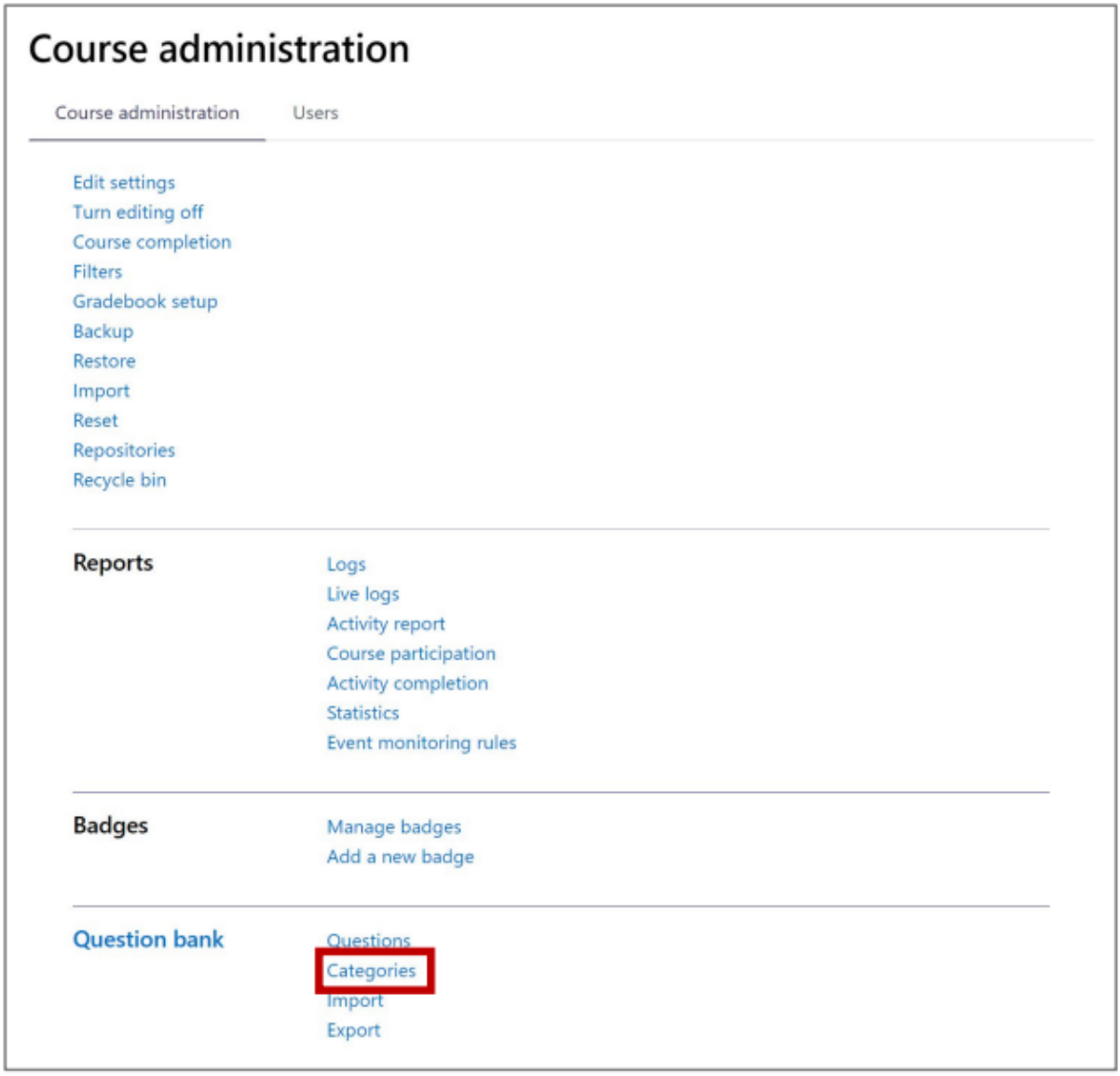
• Use an activity Quiz to create a form that pulls questions from the question bank (you define various settings, including how the feedback is given and how many questions there are in each Quiz element).

Adding questions to question bank

You can find question bank and an option to create categories from the main settings. As question bank is not visible in the menu, select **More…**

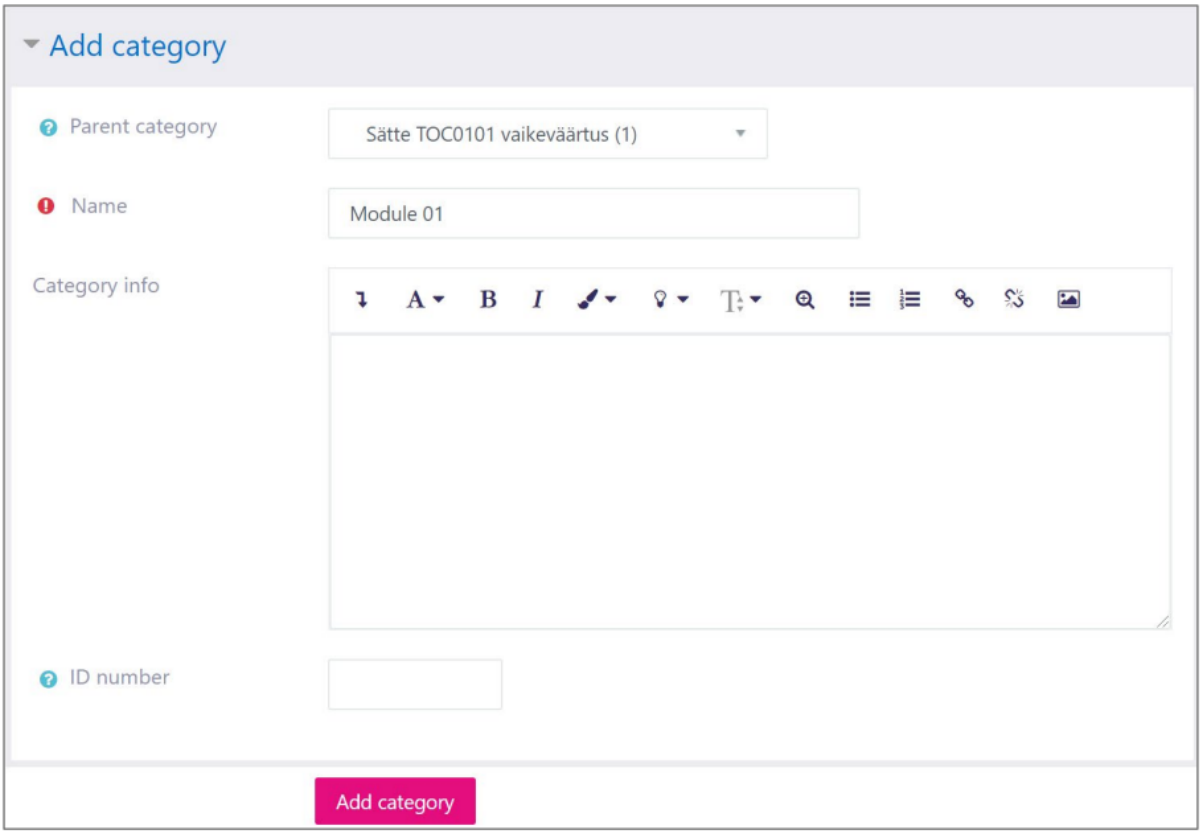


Select **Categories**.



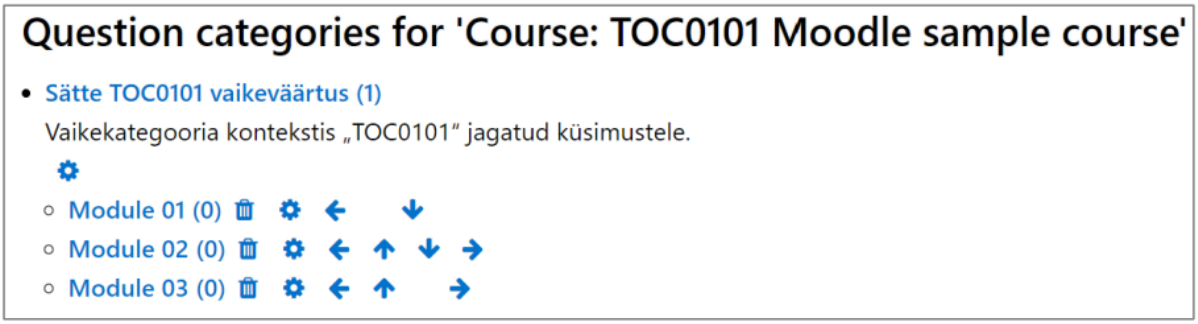
New page is opened, where, if you scroll down, you can find **Add category** section. Just include a name for your new category.

Remark: By giving a name to your category, you can use a module notation or topic/week notation. It is up to you, how it makes sense for you as a teacher. This is not important from student perspective. Once you have added a Name, just hit **Add category**.



New category is added to your course question bank.

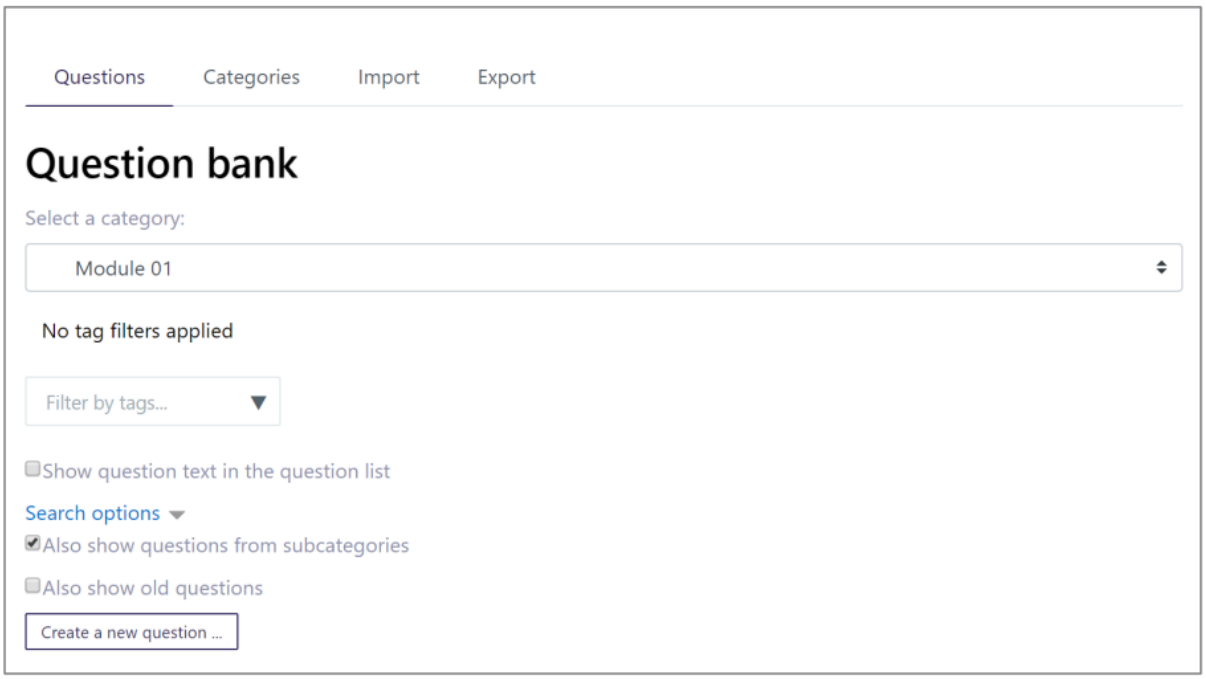
Add additional two categories. For example: **Module 02**, **Module 03**. In the end your question bank should look like as follows (if you created the same number of categories).



Remark: It is not mandatory to create those categories. You can also do those later, but for me it helps to plan and put questions directly into their correct category. You can change category names later as well as which questions belong to what category.

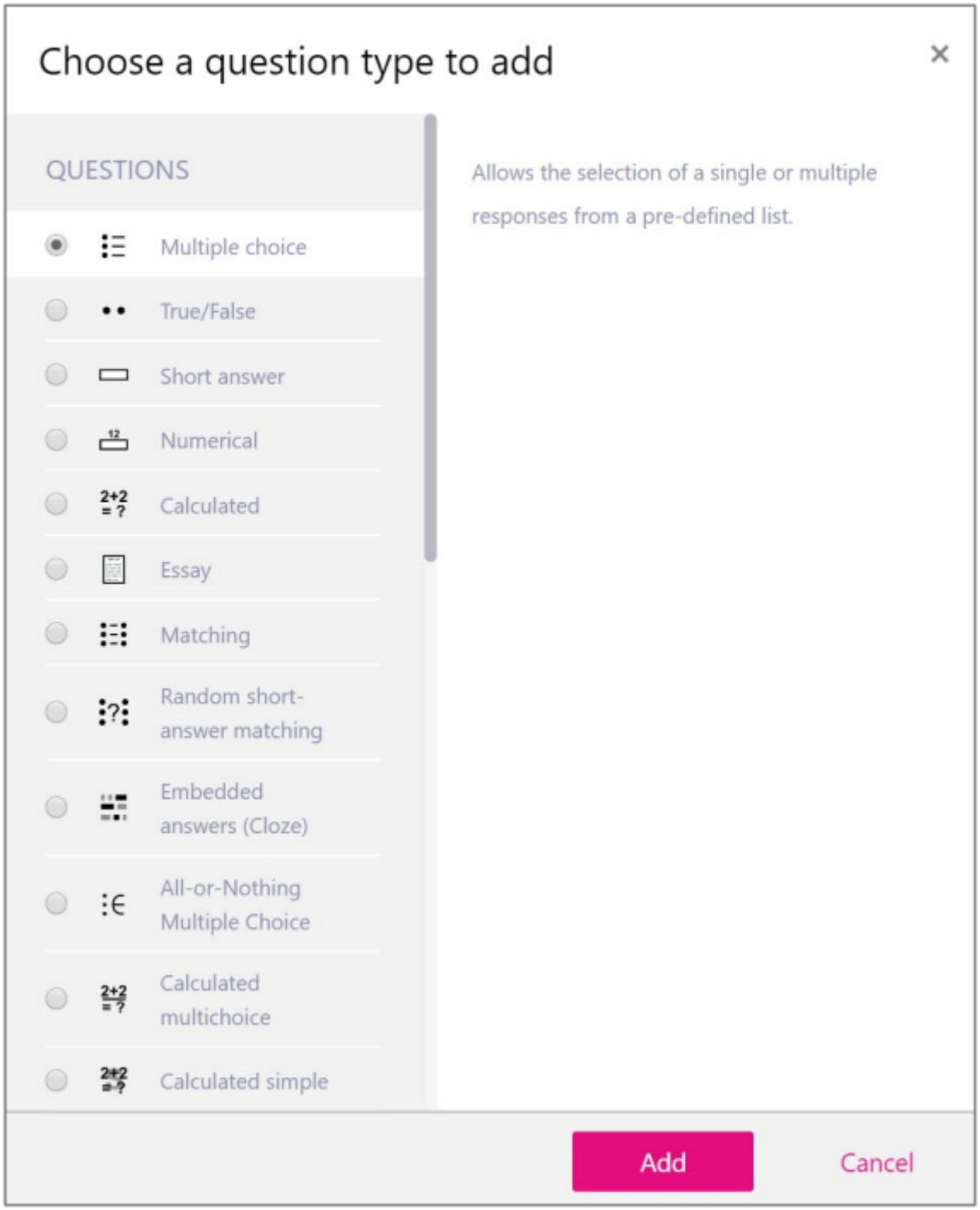
Once you have finished with categories, you can see that its name ends with (0) mark. This small number indicates that currently you have 0 questions in that category. Once you click on that number you will start adding questions to this category. You can also click on the main course administration menu link **Questions**.

If you clicked on the number (0), you should see the following page (you are in the right category).



To create a new question into this category you select: **Create a new question...**

Pop-up is displayed, from where you can select the question type you want to create. Let's start by adding a **Multiple choice** question, select that row and click on **Add**.

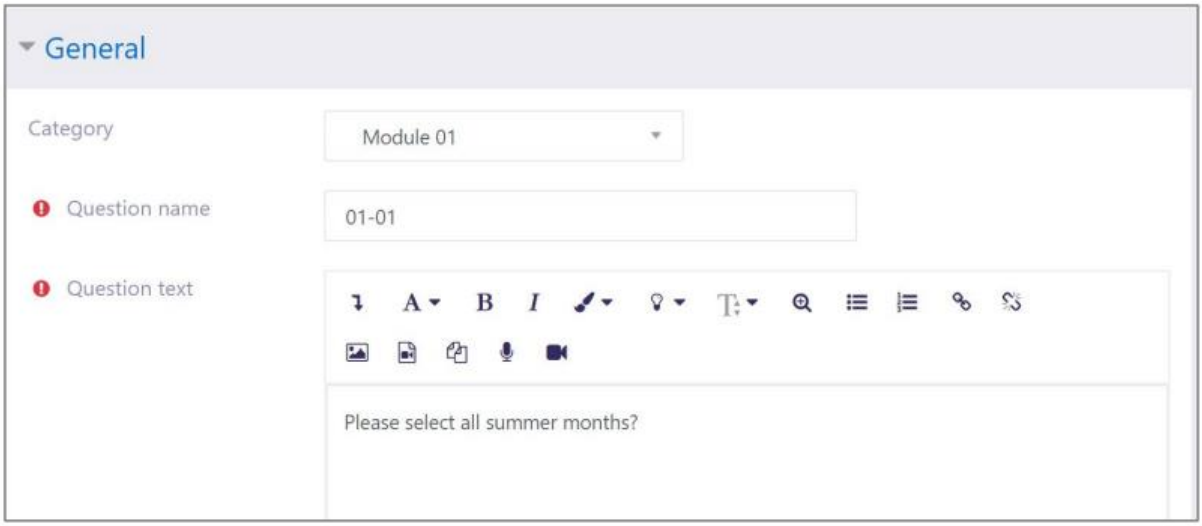


You are now on a question definition page. Let's look at some major settings you can do here.

In the first section, **General**, we give a name to our question and include a question text itself.

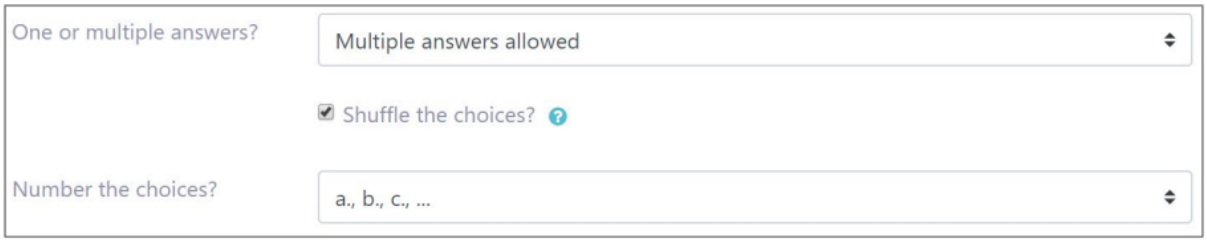
• Question name - I prefer to use some strict rule here that makes sense for me, because this is not shown to students. Therefore, I name my questions as short as possible, but include a category number (01), as well as question number (01). It simply doesn't make sense to give a long name here.

• Question text - Add question text that will be displayed to students. Please pay attention to spelling as well as its clearness!



Remark: We will create a really simple question here.

Let's check the next important part in **General** section. You can define does your question expects only one right answer (no more can be selected) or you want to build it up so, that multiple options are available. In here we select **Multiple answers allowed**. Depending on your question text, you may or may not wish to add an additional remark, how many answers are correct. You can also select **Shuffle the choices**, it will simply change the order of your answers and this is always good to be selected. Let's move forward by remembering that we defined a question that may have multiple correct answers.

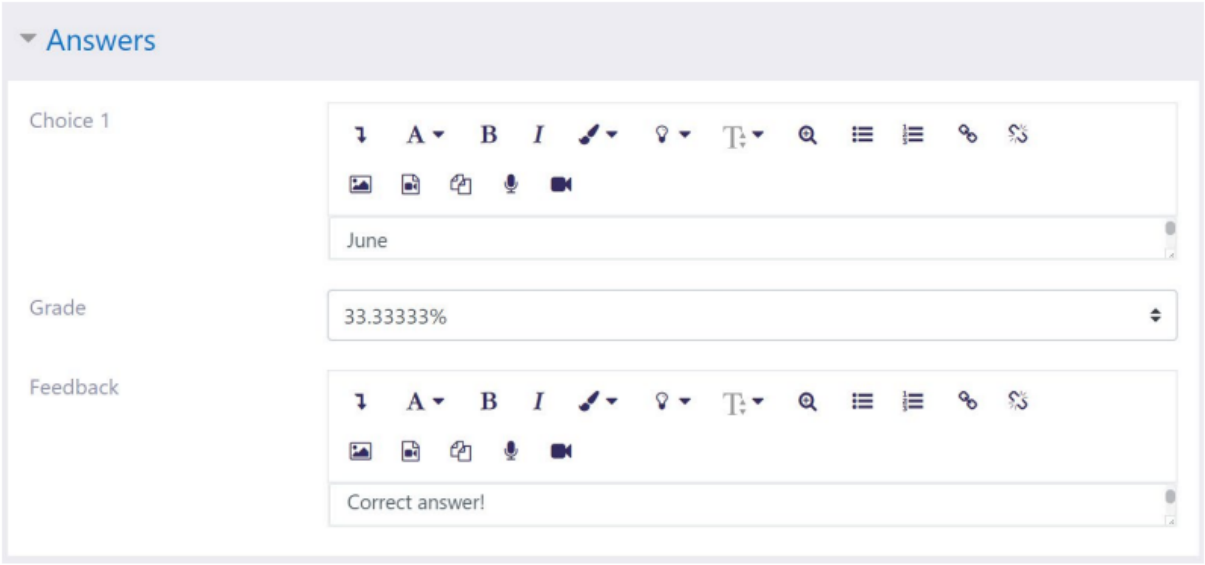


In the Answers section we define correct and wrong answers and their respective weights. By default, you see 5 possible choices, you do not have to fill them all, if you want to give less options. But you can also increase the number of choices by adding **Blanks for 3 more choices** (button below) that includes 3 more box areas, from which you may fill in only 1 or 2 (to get 6 or 7 choices).

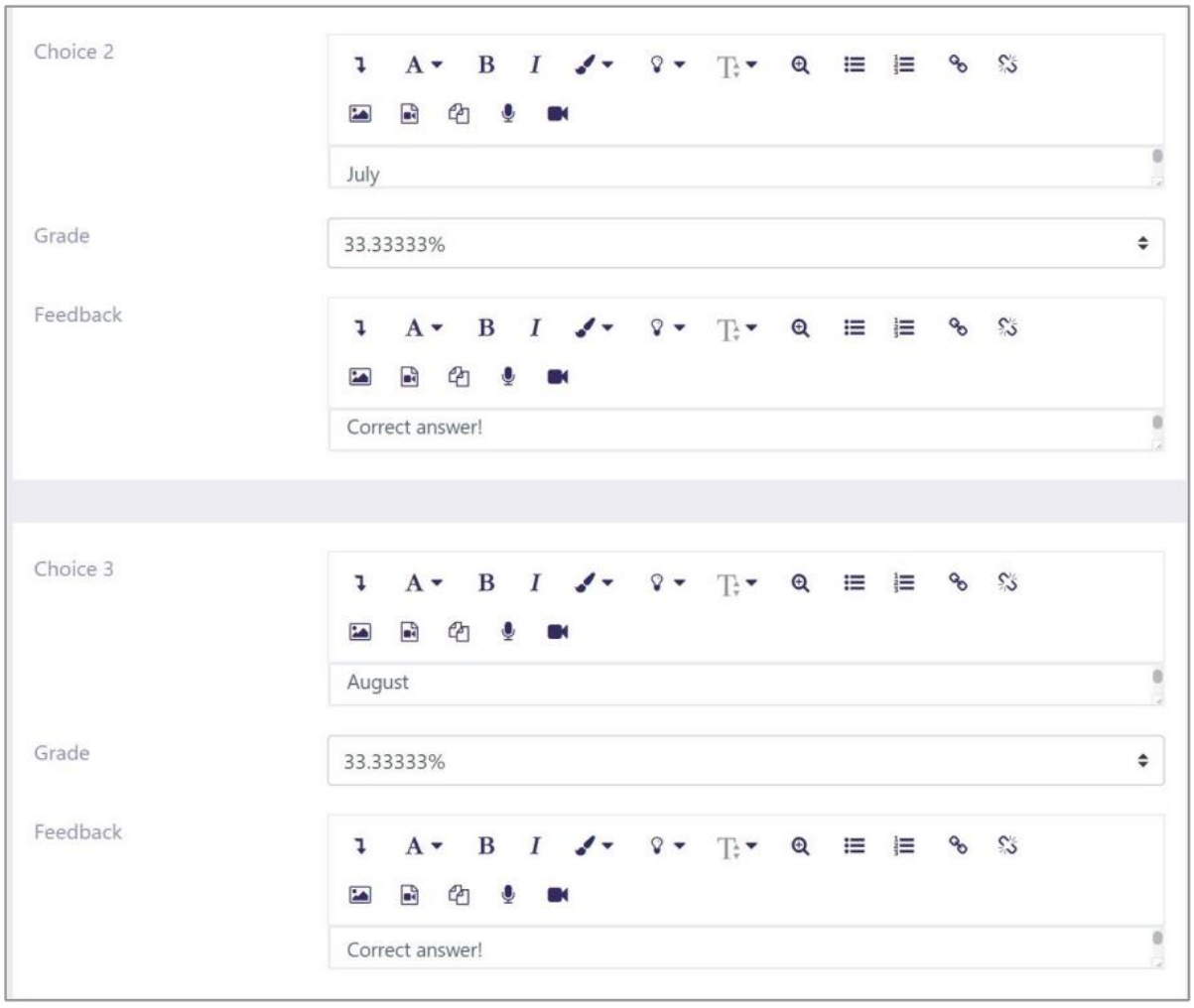
• **Choice 1** - you add a displayed answer here

• **Grade** - in here you note the weight from all correct answers (because we plan to have 3 correct answers, the correct weight will be 33% per one correct answer).

• **Feedback** - it is recommended to add some standard text here, like **Correct answer**! This feedback can be shown to the student at the end of the attempt.

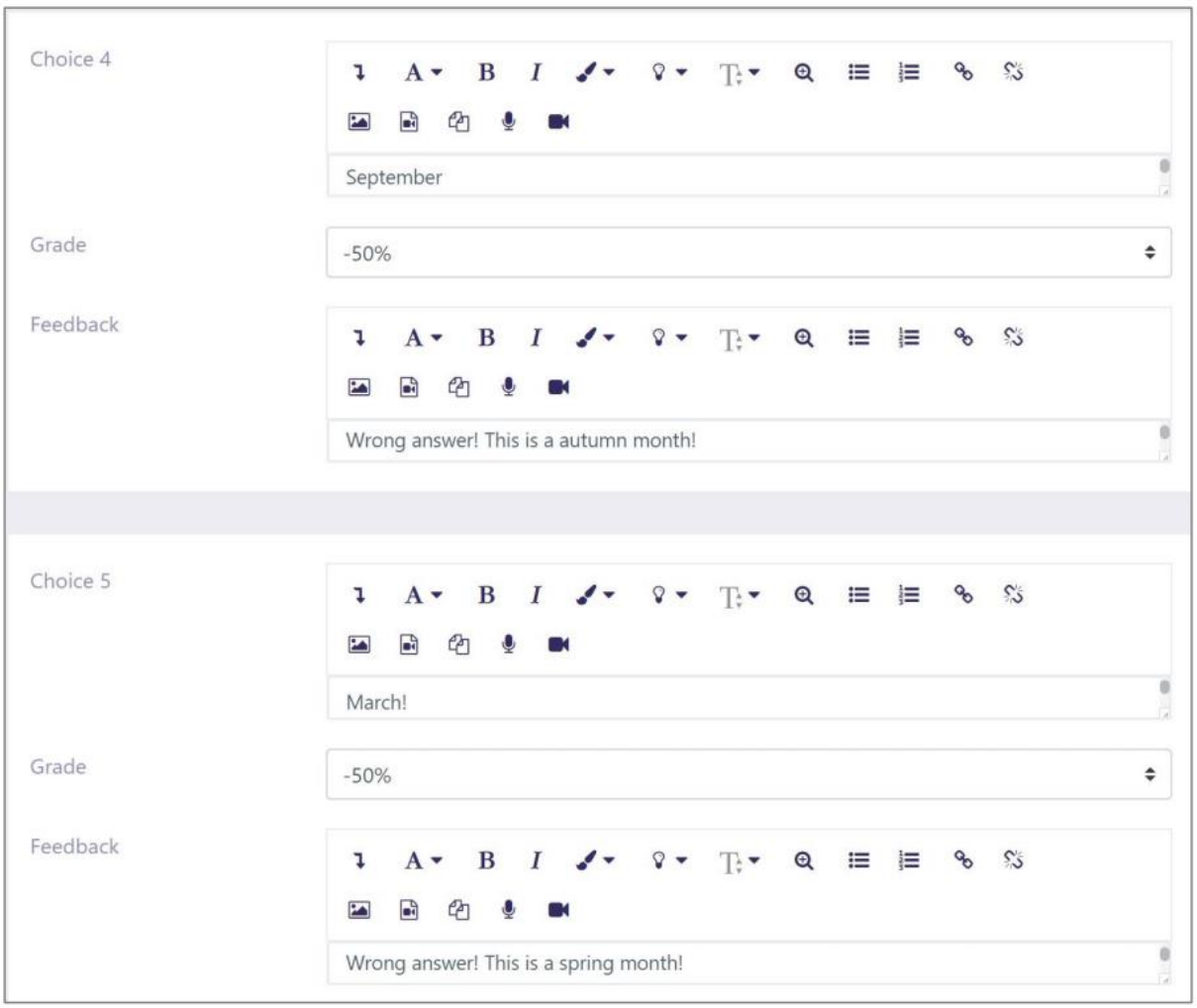


It doesn't matter in what order you add correct/wrong options, because those will be shuffled anyway (we just selected that option beforehand). Let's just fill in all other options as well.



Let's concentrate now on wrong or misleading options. Just like with correct answers we add a weight also to wrong answers, but those are negative numbers, because if the student selects also wrong answers, we do not want to give her/him maximum number of points. All in all, the

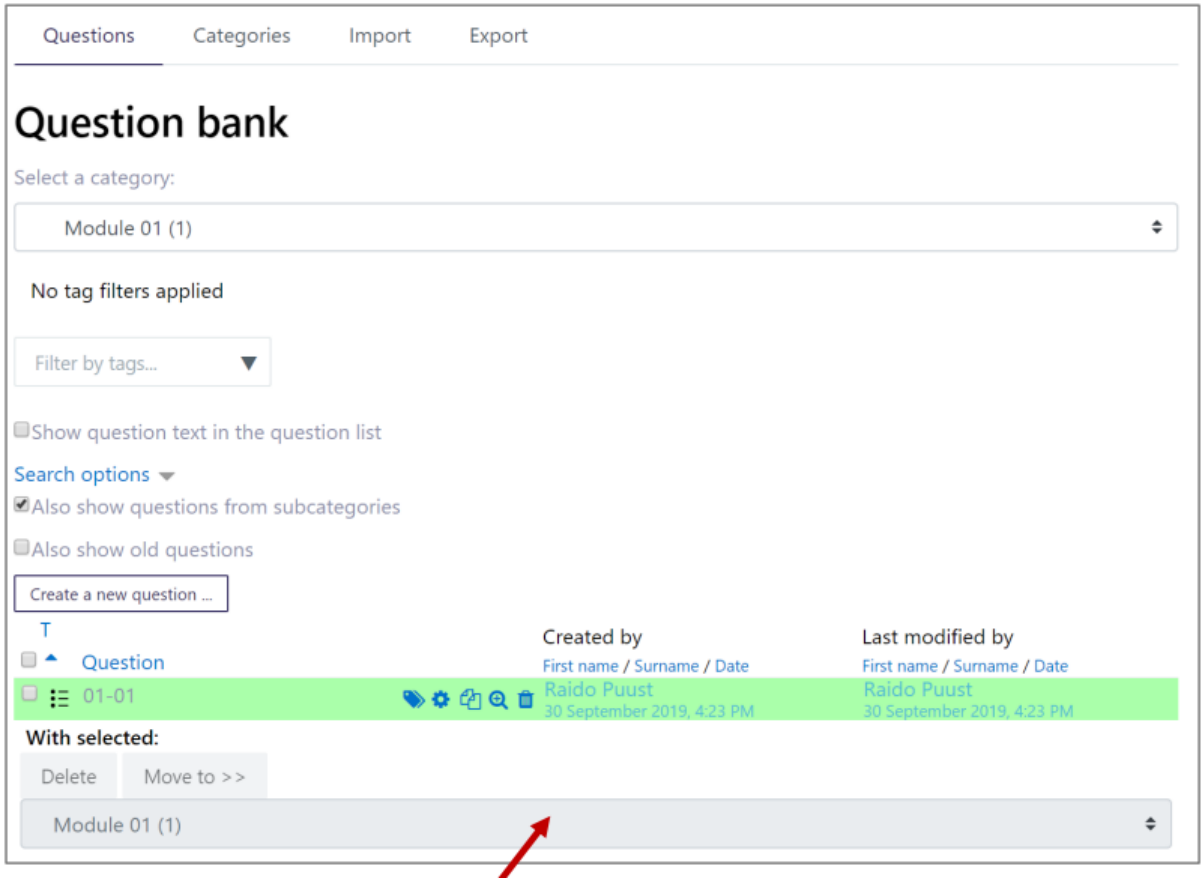
total count of wrong answers is -100%, and if we add 2 wrong options, each of those does have -50%. Let's fill in the tables.



If you do not want to reduce the credit once wrong selection is made, you can select in here also an option None. But please remember that in this case student can select all options and still get the maximum credit.

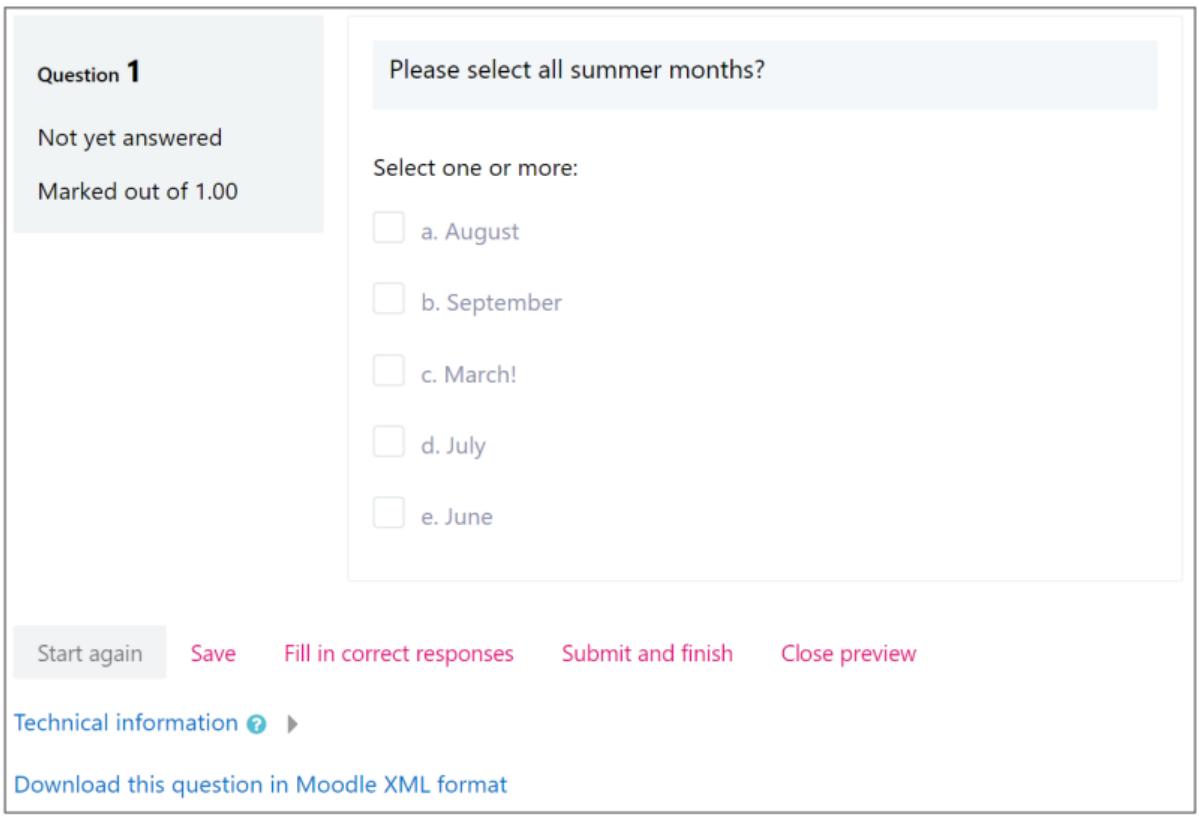
Remark: If the total amount of correct answers is 100% (it should be, otherwise Moodle warns you) and total amount of wrong answers is -100%, then let's do some sample calculations how Moodle calculates those Credit points. If only one correct answer is selected and one wrong as well, the credit is calculated: 33% - 50% = 0.17 points (we have a default grade/mark = 1, this can be change later and is not needed here to be changed). If we use such grading, it should be noted in our study guide as well as in the quiz description. It is important to note that such grading, if multiple questions are pushed to students, can reduce the overall weight of totally correct answers as well (you can get minus result from one question that affects all other questions as well). We can also make a general mark/instruction to student that sometimes it is wise to select only 1 out of 3 possible, because if this 1 is sure for 100% we get points at least for that, and not reducing it by selecting a doubtful option as well. In that way we can build up very unique quizzes.

All other sections are kept as is. Let's simply hit a button **Save changes**. Once we have created a new question, in can be seen also in our question bank.



It is recommended to check your question and if it is set up correctly. For that you can click on a small magnifier icon (see last image).

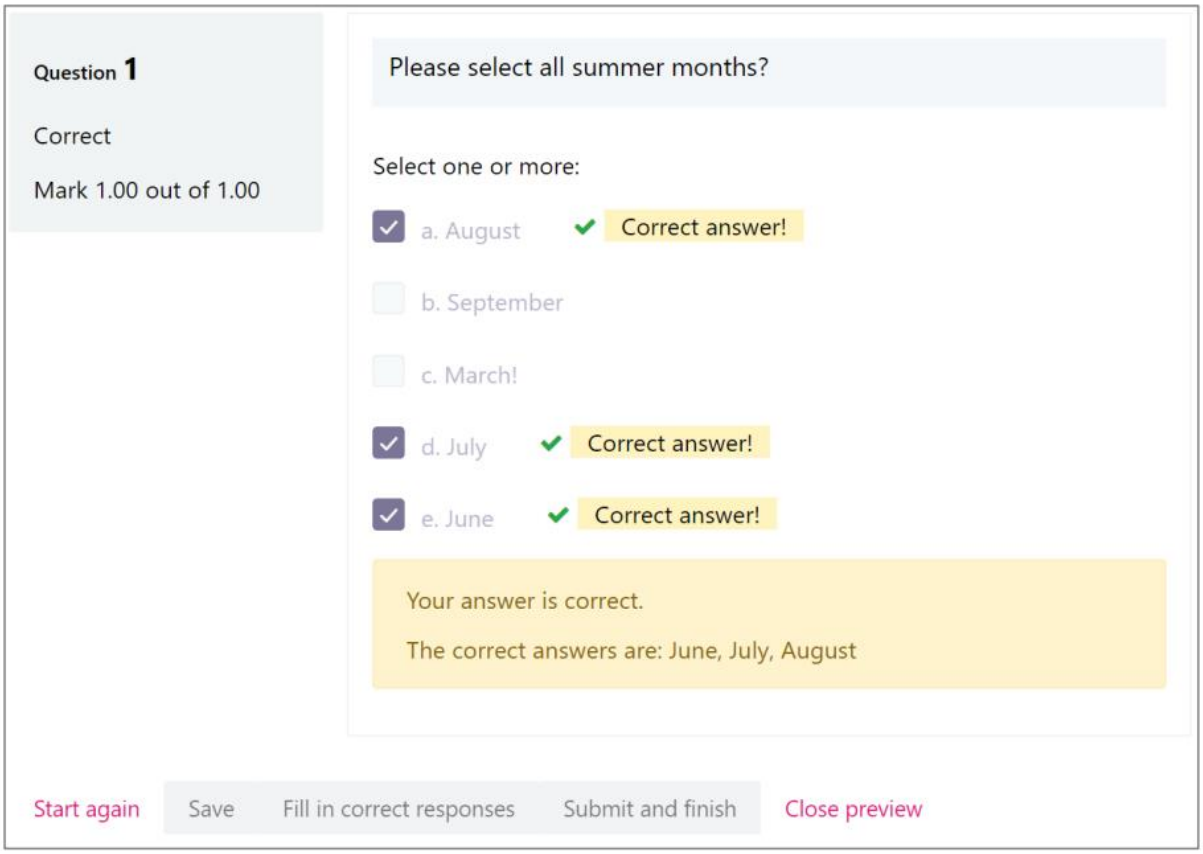
New pop-up appears. This is the view, how student sees it (expect those settings after question text and also no question number is given like so). The settings after the question enables us to check how the question feedback is given (do we let to show correct answer or just a final score.. those are just for our preview, we tune that globally in later step).



If you scroll down, in this small pop-up, you find **Display options** section. Just ensure that **Marks = Show mark and max**.

Remark: This is a required step to see the final calculation if you have defined minus weight values as well. This is only for your check-up, not for question setting itself.

Go back to the top of this pop-up and practice with answering to your first question. See, how it works and calculates. Once you have selected your options, click on button **Submit and finish**.



You will see the summary, how did you do. On the top left you can also see how many points you earned. If you pick some wrong answers, you see less that one credit here.

You can close the preview window. You are back in the question bank. Just in the same way you have to check all of your questions.

Adding a Quiz activity

Once you have created your questions, you can define an activity that starts to grab those questions from the question bank. You can define it beforehand, and then add questions, but in this guideline, we simply use that order.

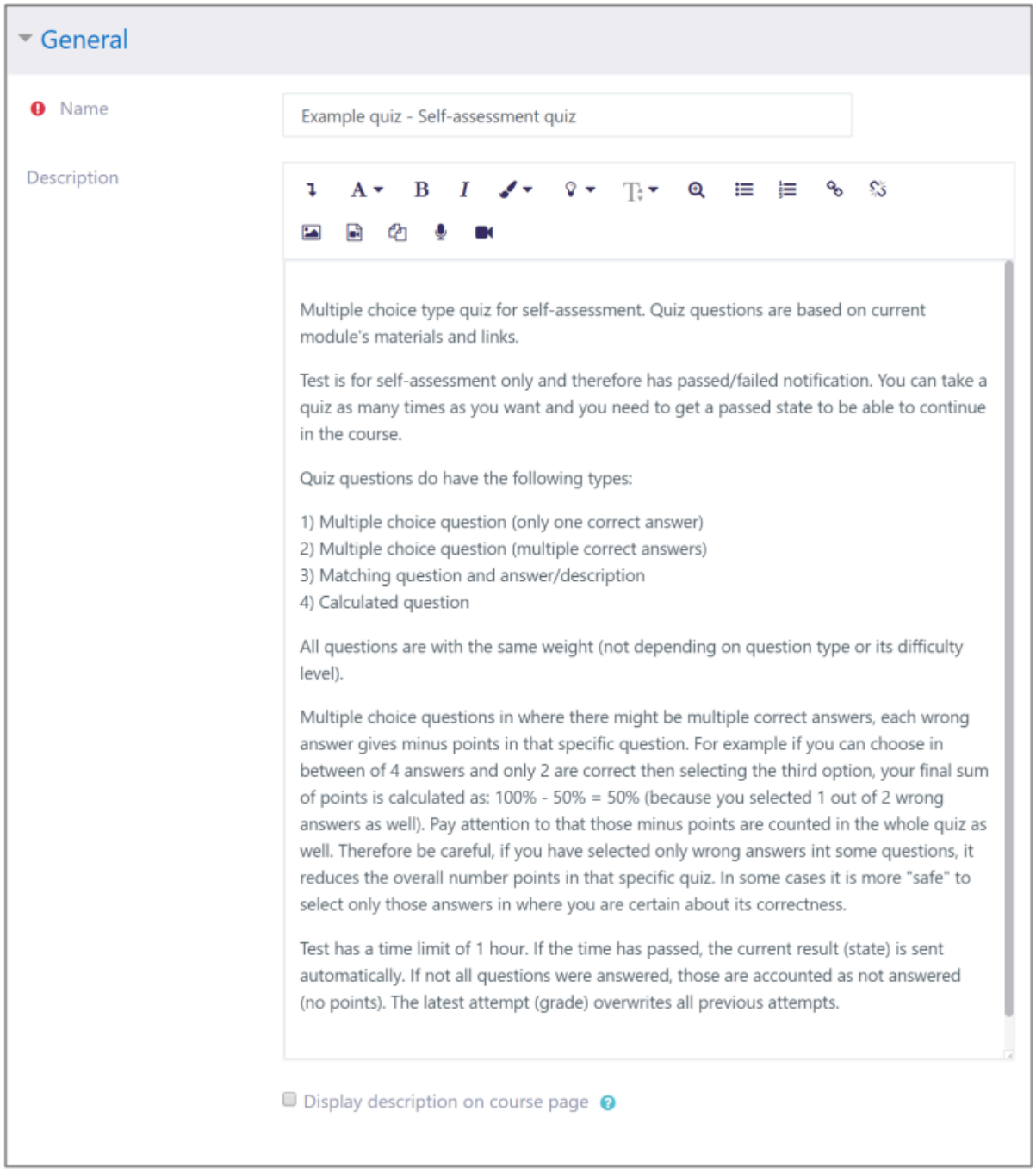
You add a quiz by clicking:

From the opening pop-up select **Quiz**. Once clicked, you see a new page, where you can add different settings/information. Let's look how to set it up.

First section is **General**, where you focus onto the following parameters:

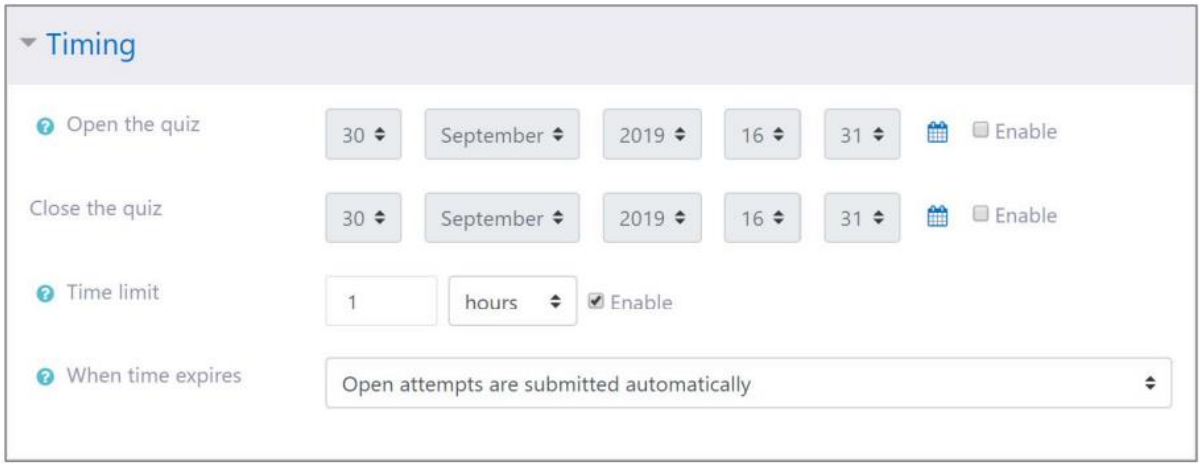
• **Name** - This name is displayed on your course front page, therefore please describe your test (you can also include the number of points it gives or is it passed/failed type or simply self-assessment test)

• **Description** - Quiz nature should be described here. Please also add, how the grading is done, does it have some time limit. This information is shown before the test attempt can be started.

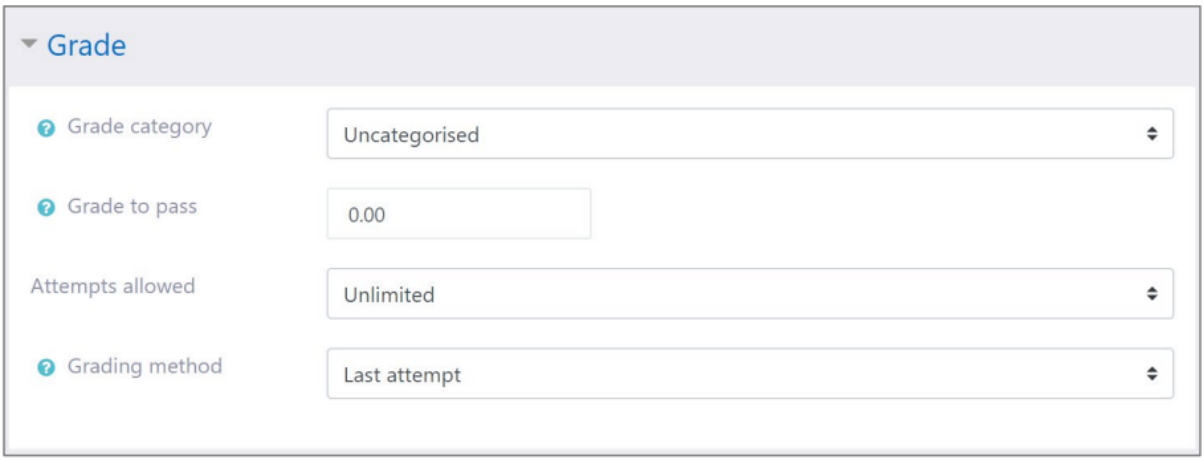


Next section is **Timing**. We can open the quiz from certain date/time and close it also at certain date/time. Just like with assignment, if you use close date, please ensure some backup plan for those, who miss the deadline!

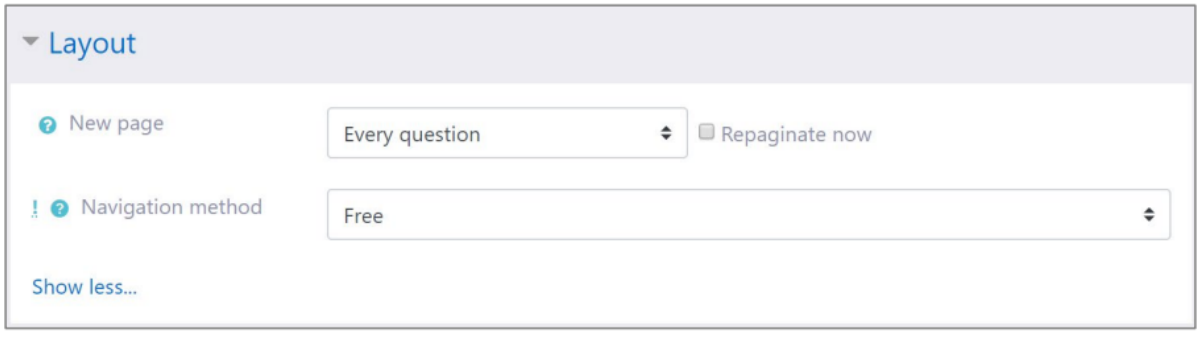
It makes sense to add a time limit for test attempt. This is also true for self-assessment tests. We can keep here some bigger value, if it is not important but at least the test attempt will be ended automatically even if the student has not finished it. Therefore, the setting **When time expires = Open attempts are submitted automatically** is also good to select.



In section **Grade** we can define; how many attempts the quiz can have and what happens once multiple attempts are made. In here we keep the settings like: **Attempts allowed = Unlimited** and **Grading method = Last attempt**. This is good for self-assessment tests as well.

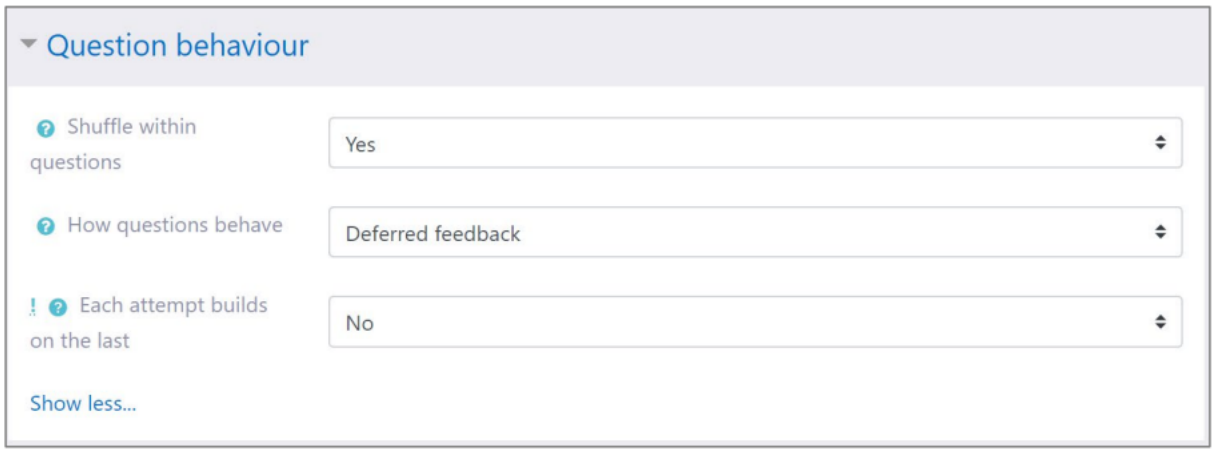


In section **Layout** we can define, if all questions are shown one at a time or we want to show them on one page. Let's check **New page = Every question** and **Navigation method = Free**. The last setting defines that we can freely go back to the previous question and double check our answer.

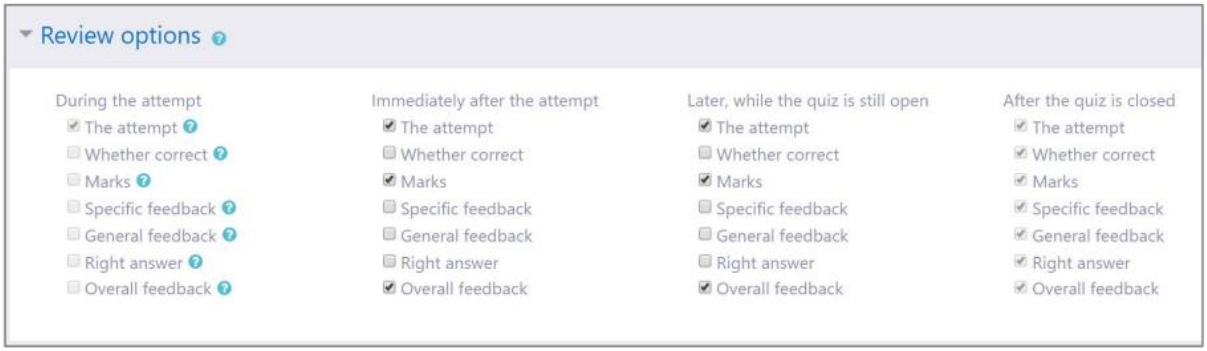


In the section **Question behaviour** we can define, if questions order is shuffled (typically we do want to keep it so). Also, we can decide if student is able to check her/his answer after selecting or inputting an answer. This behaviour can be combined with a type of grading that each new attempt/selection reduces the maximum number of points that this question can give.

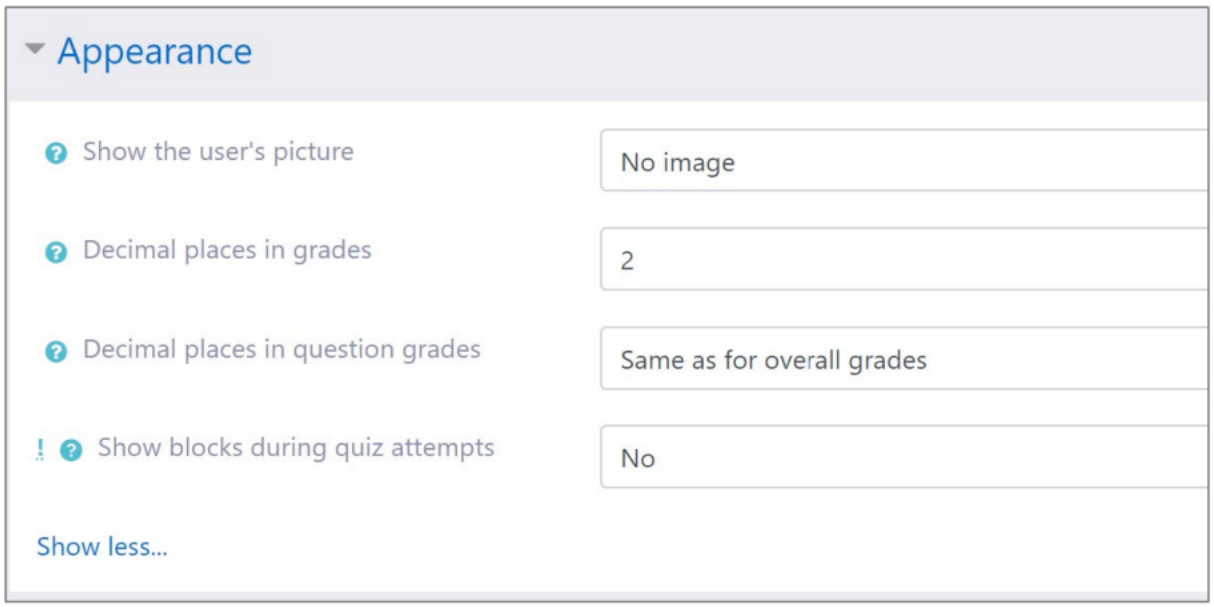
By default, we usually select **How questions behave = Deferred feedback**. This option lets us see the result after the quiz attempt (no mid-check possible).



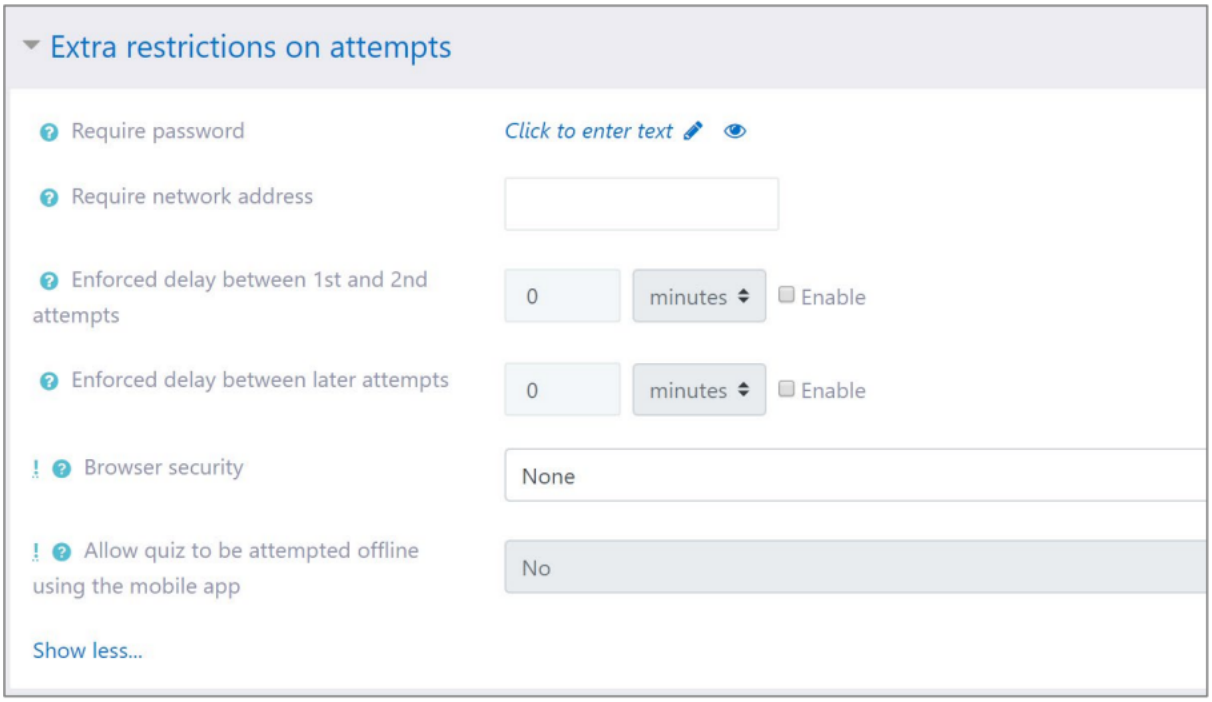
Section **Review options** is divided into several columns. Each of those is defining what happens or what is shown during or after the quiz attempt. If we want to offer equal possibilities to all, we can turn off the correct answer display and show only general information after the test attempt (this also minimizes quiz copying behaviour). We select **Marks** in each column, but **Whether correct** and **Specific feedback** only in the last column. You can see more specific descriptions if you click on the question icon (first column).



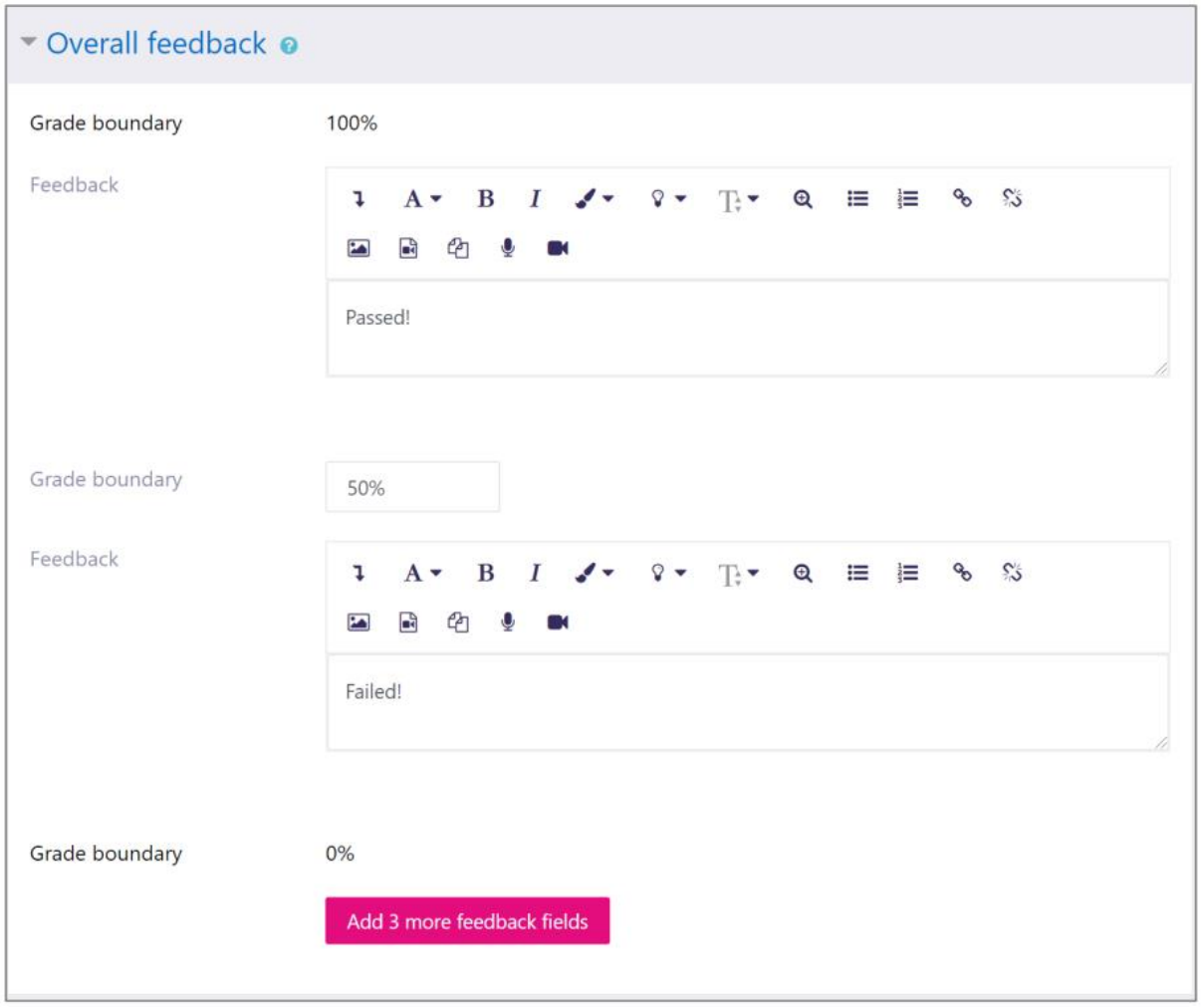
In section Appearance we keep the default selections here. Note that **Decimal places in grades** = 2.



In section **Extra restrictions on attempts** we can add some extra limitations. If for example a quiz can be taken several times, we can define some extra time that should be passed, before new attempt can be taken.

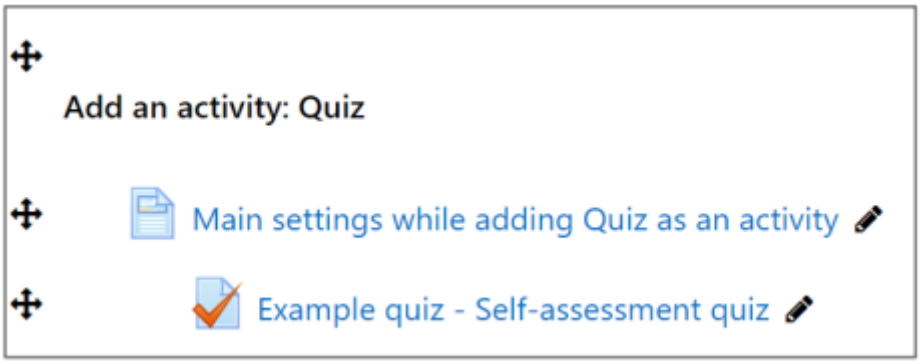


From section **Overall feedback** you can add text-based feedback to some specific grading boundary. For example, from which boundary the test is passed. This is important if you want to tie this with the next activity in your course (meaning that you must get a certain score, before you can move forward in the course).



Other settings are not currently important. Of course, you can restrict the access to quiz before some other activity has been completed and define some completion settings also for this quiz as well that can be taken as the boundary for the next activity (for example, you have passed the quiz, before you can upload your homework). Click on **Save and return to course**.

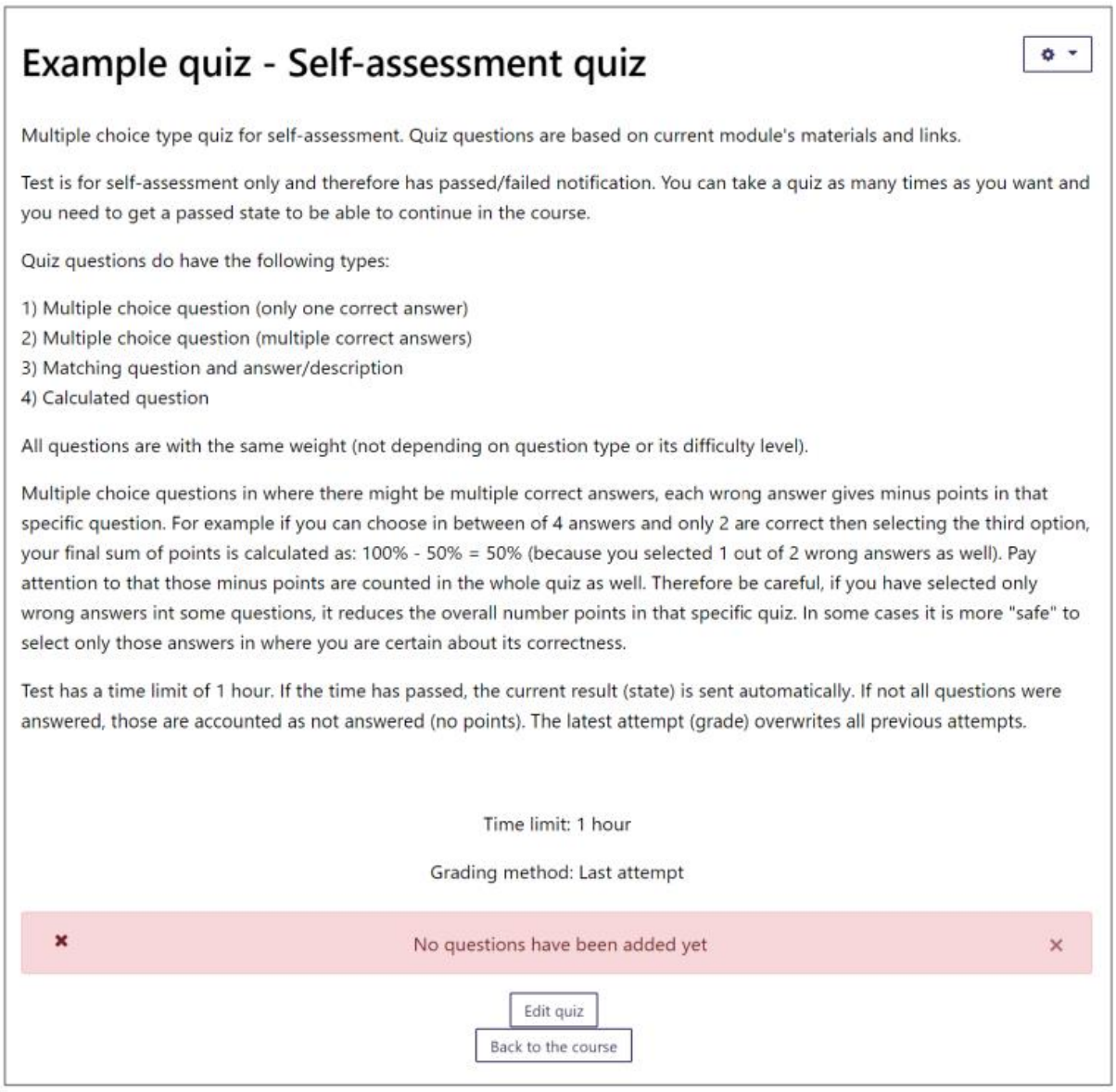
You are back on the front page. The result may look like this.



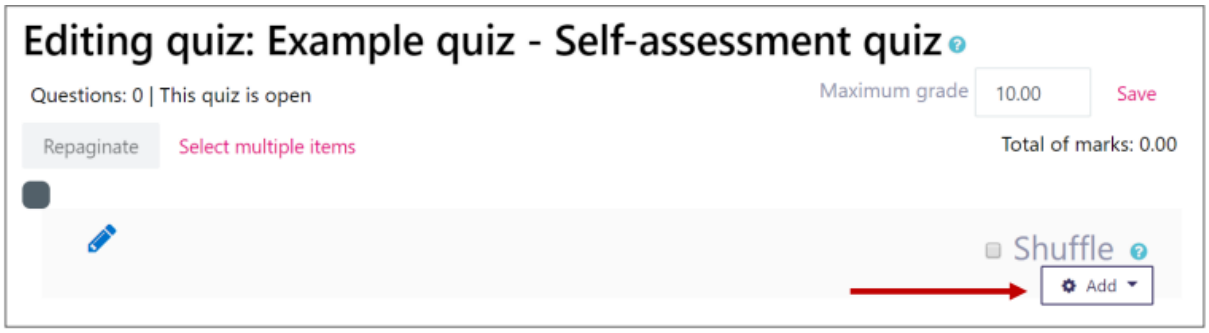
We have a quiz as an activity link and a question bank from where this quiz can pull questions. Because we may have various quiz links, we need to define how the questions are pulled for each quiz link.

Adding questions to a Quiz activity

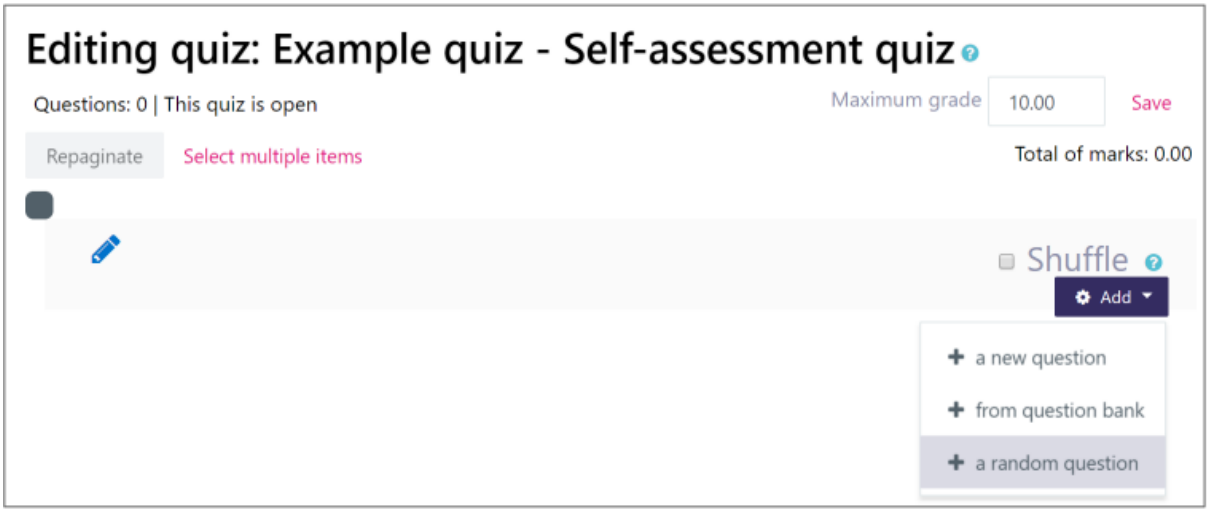
Click on the quiz link that was added to your course front page. You will see the introductory text that will also be shown to students and it informs about quiz behaviour. You should also see a notification that this quiz doesn't have questions yet. Click on **Edit quiz** (you can find that selection also from the course administration block).



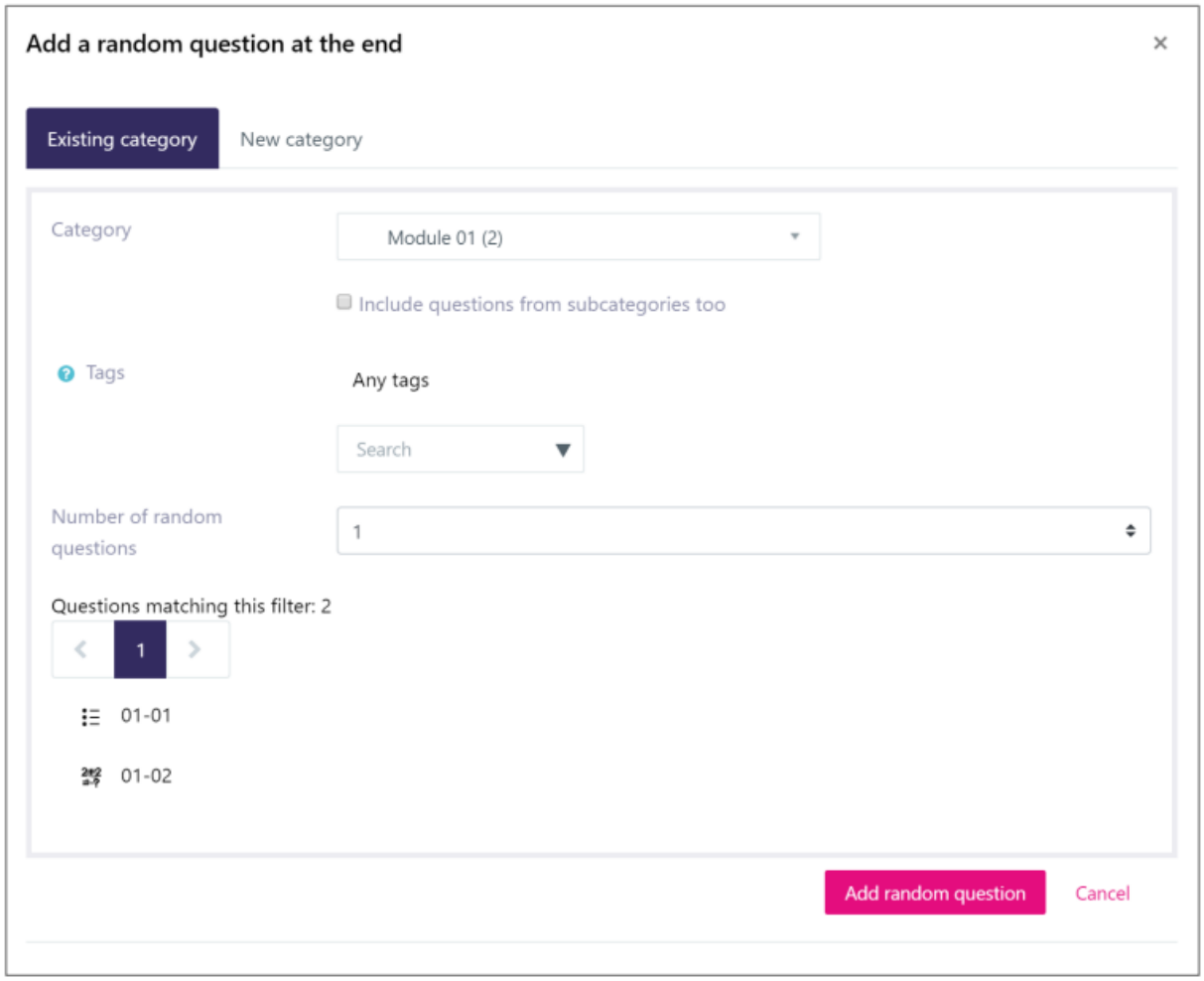
New page opens, concentrate onto right hand side. Click on the link called **Add**



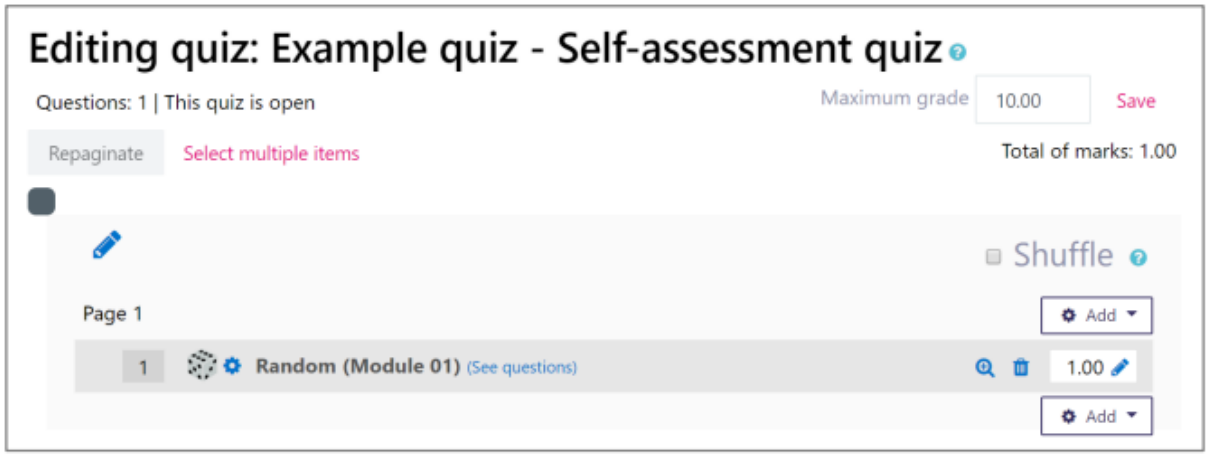
Now select: **a random question**



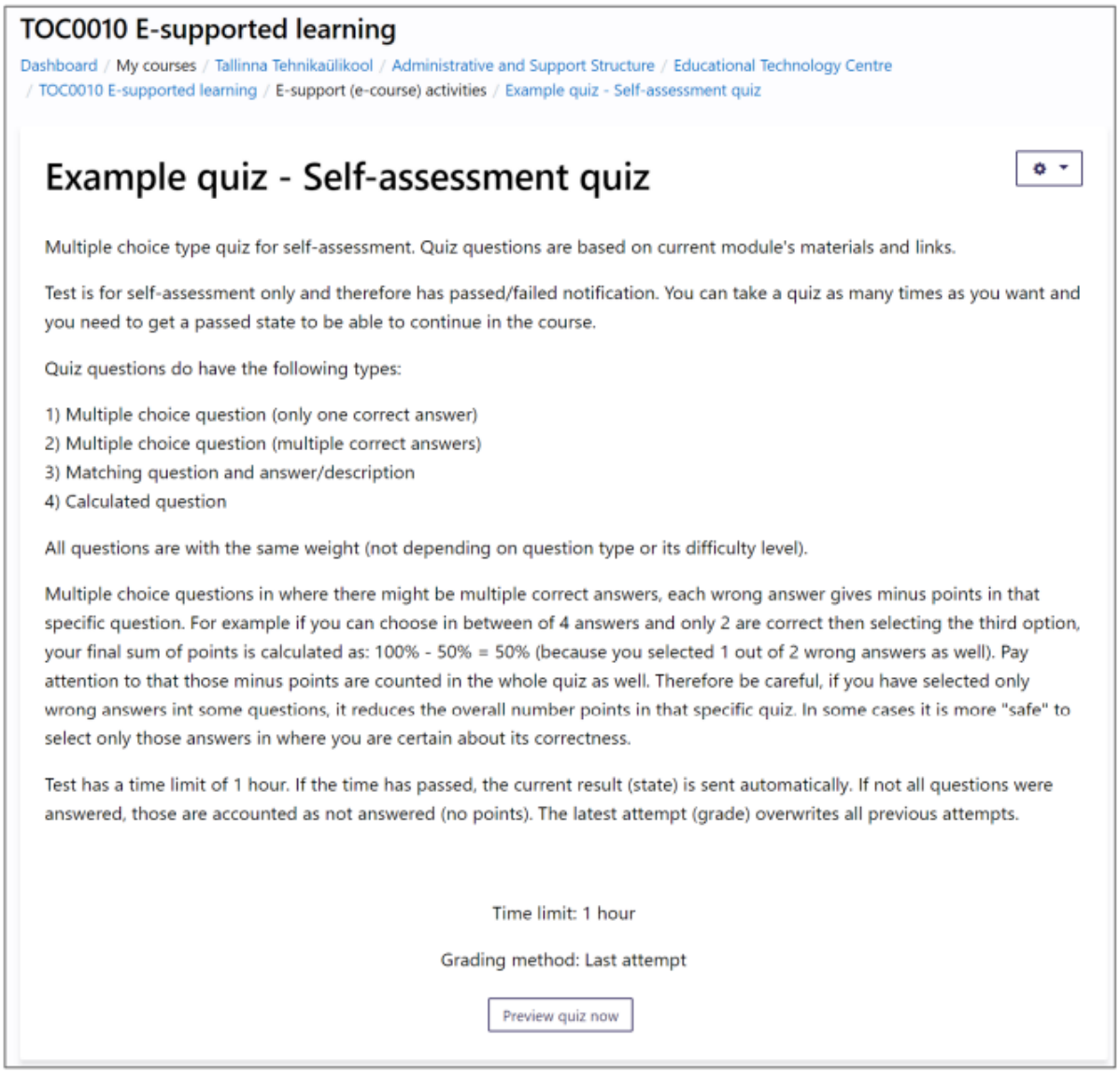
New pop-up opens, select a category, from where you want to pull questions and then enter the number, how many questions should be randomly taken. We created only 1 question, but if you would have let's say 20 different questions, you may want to use 10 as the random number. Click on: **Add random question**.



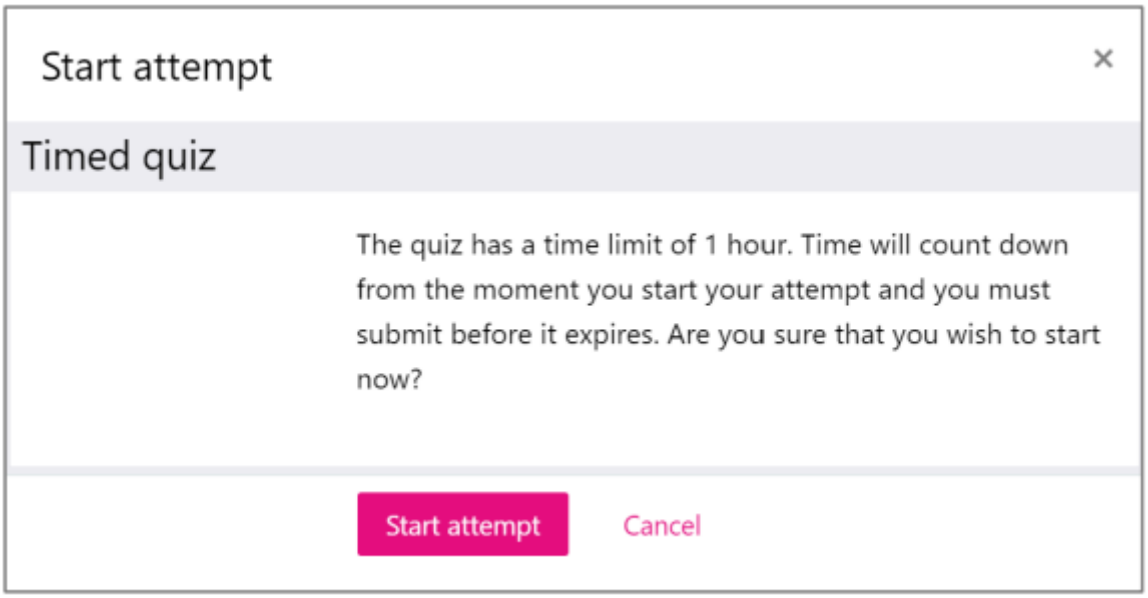
You will be taken to the previously seen page. That is it. You do not need to do anything else. All described additional steps are optional but important to consider. For example, you can change the maximum number of points that this quiz can give in the context of the full course. I usually recommend thinking about it like a real number or percentage. So, if your quiz gives 5% from final grade, you simply write: **Maximum grade** = 5, if it gives 10%, then you write: **Maximum grade** = 10. All question's own points (we used 1 point for all) will be automatically scaled up or down. This makes your gradebook setup a lot easier.



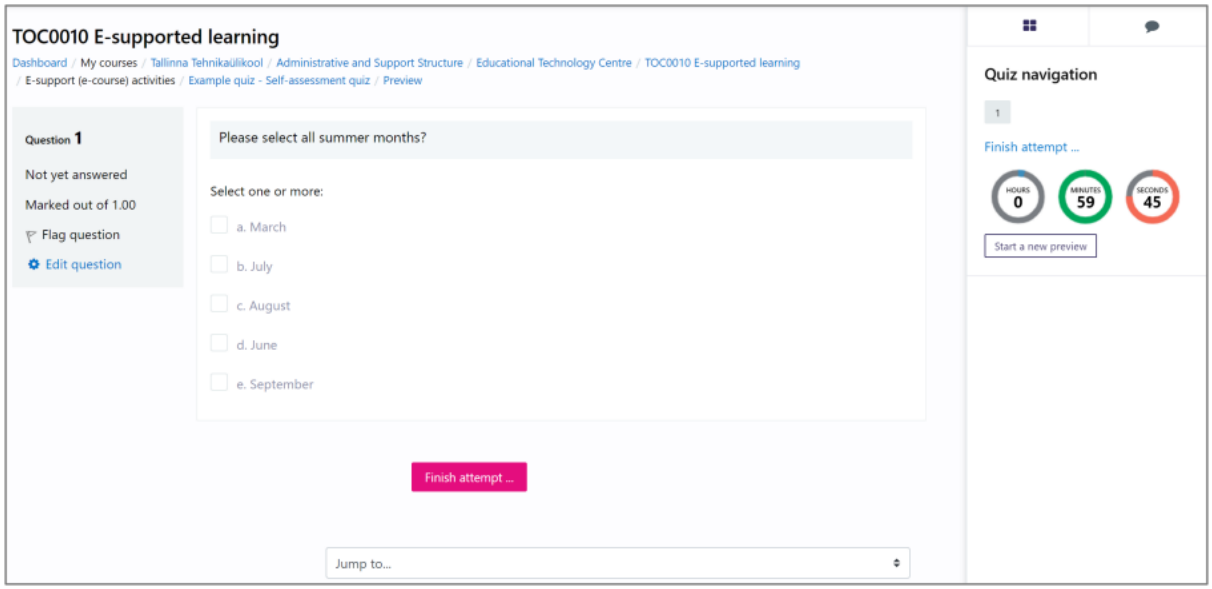
Your quiz is set up and ready to be tested. Go back to the course front page. Click on the quiz link again. You should see the following screen, where you have the option: **Preview quiz now**. You can find that same option also from the course administration block (Preview).



A notification will be shown to ask it over, do you really want to do it (similar dialog is also shown to students). Please note that after student clicks on **Start attempt**, it means that the attempt starts and if it can be done only once, then this is it (no possibilities to get that attempt back, even if the student doesn't like to answer those questions or if the student clicked it "accidentally").



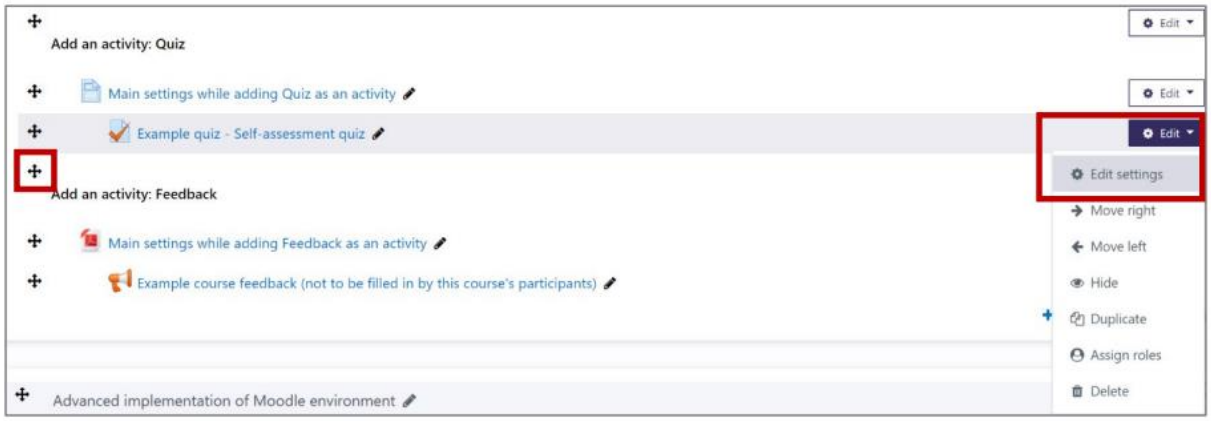
The Quiz is shown, the presentation style depends on the course style.



Please ensure that the quiz works as expected. You can answer to your quiz and submit your answer to see the result. By that you have successfully created your first quiz, it can be a self-assessment quiz or also a graded activity.

Summary

You have successfully created your first quiz that can be a self-assessment quiz or also a graded activity. If you need to fix or change some settings, you can edit settings by clicking on the **Edit** button (at the end of the row).

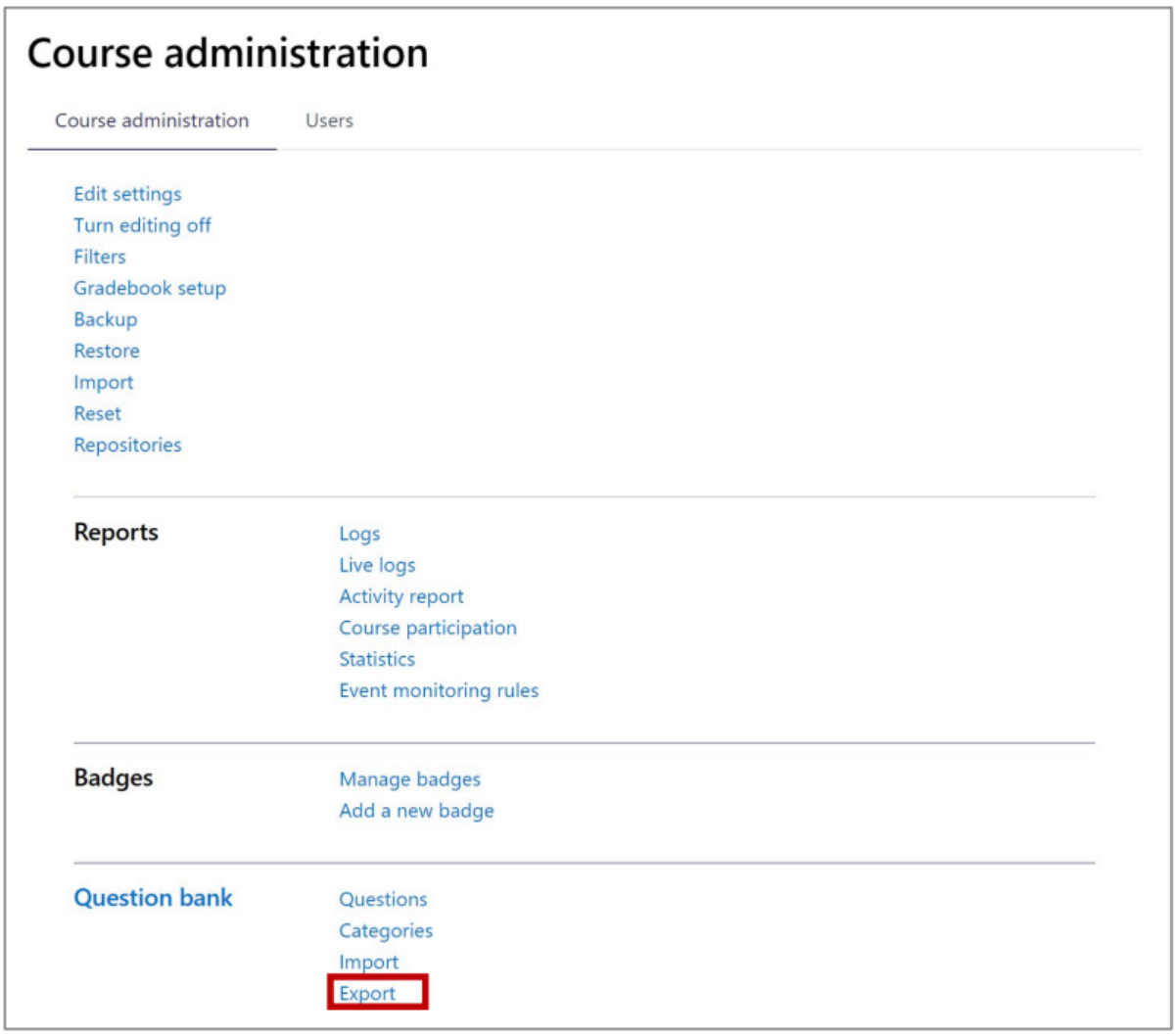


From the same menu you can hide the link (not visible to the student) or delete it (can't be undone). You can also indent (move) the current learning resource to the right/left. If you plan to add a similar type of content, you can first select **Duplicate** and then make modifications to the fresh copy. If you want to change the location of current item, you can do that by picking up a cross-hair icon from the front of the row and just sliding it up or down.

Questions export/import from one course to another

Sometimes you may need to share quiz questions in between courses. If those questions are in **Question bank**, it is easy to do that.

1. Navigate to **Question bank** section and select **Export**.



2. New page, called Export questions to file comes up.

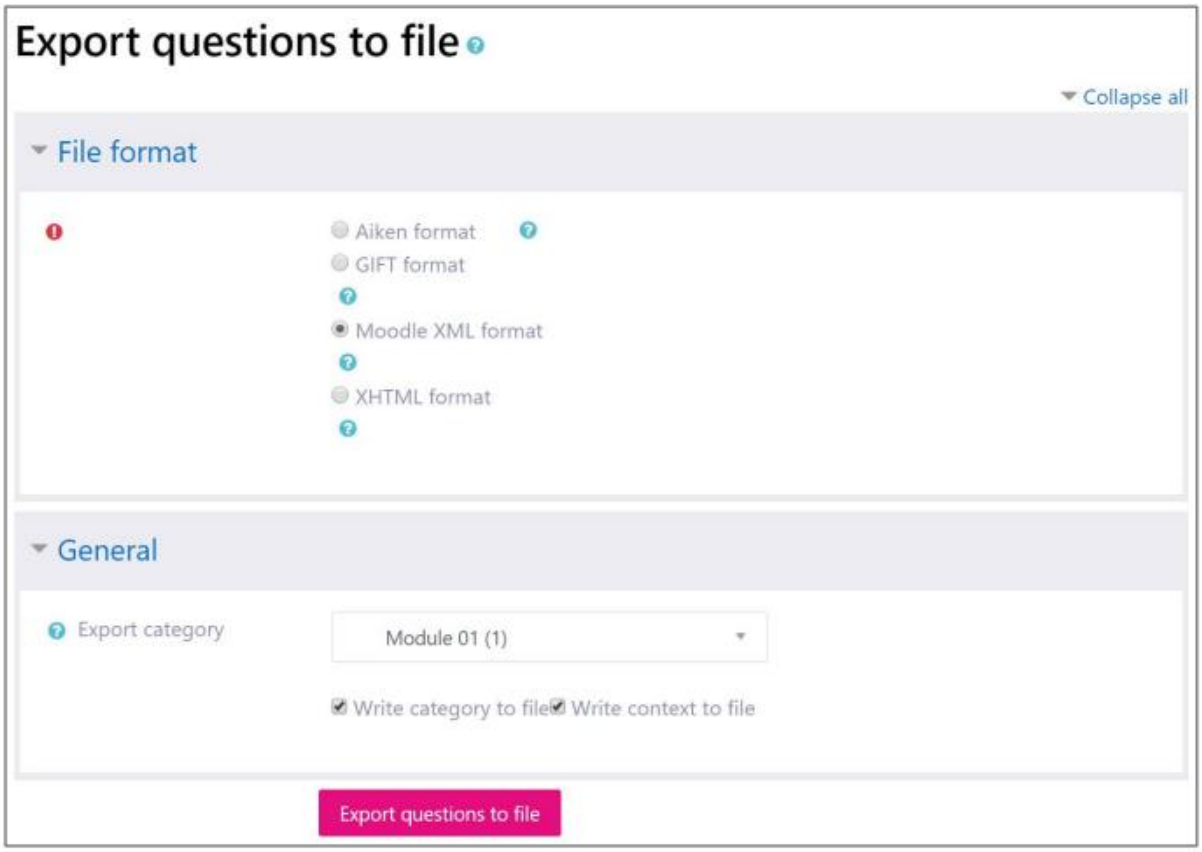
a. Select: **File format** > **Moodle XML format**

b. Select **Export category** > …

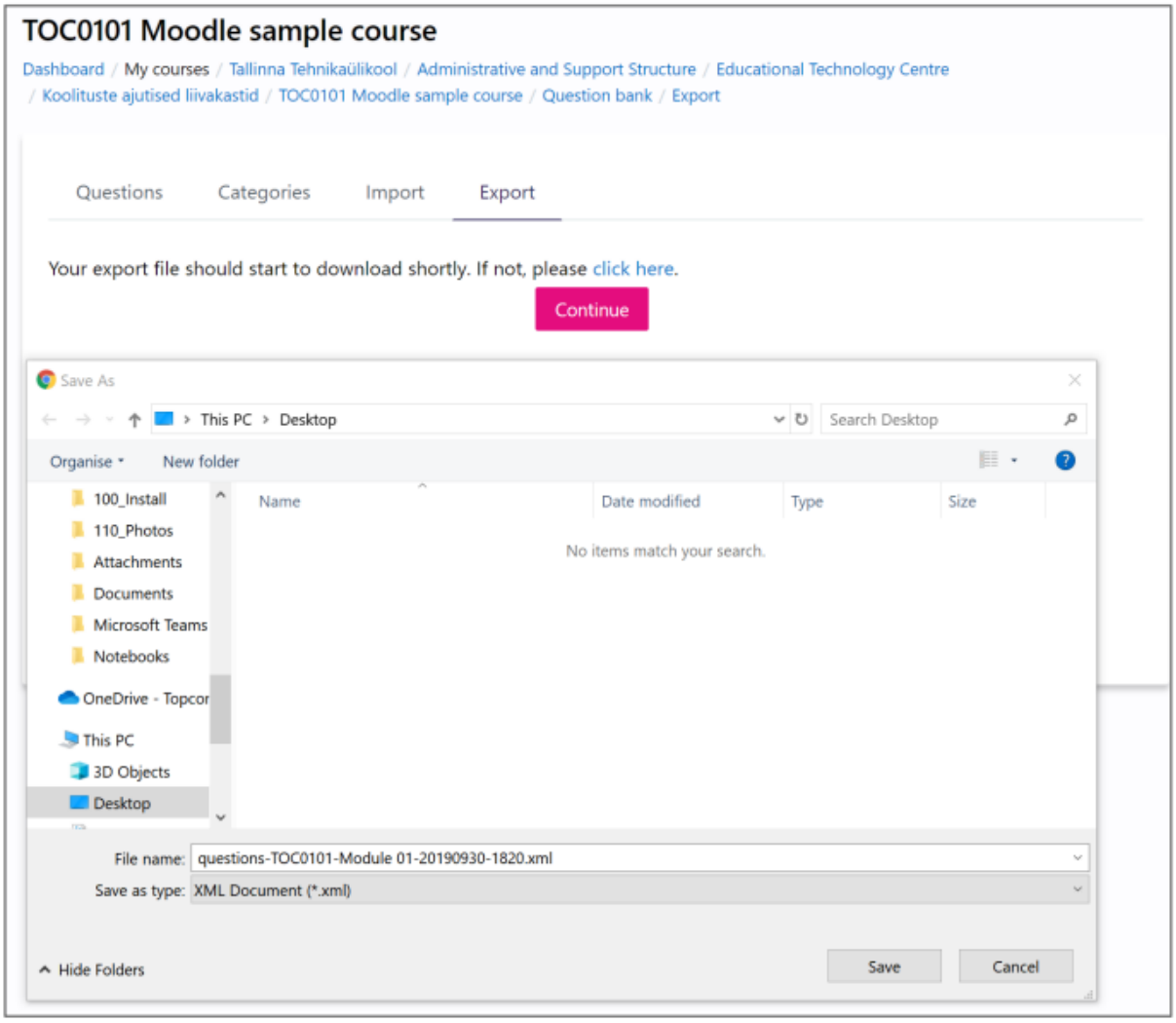
c. Pay attention that **Write category to file** and **Write context to file** are also selected.

Note: On the image below, you can see that a special category called **Module 01 (1)** is selected. If your questions are not divided into categories, you have less freedom to filter what you want to export. Therefore, it is suggested that if that is the case, please do that before the export.

3. Click on **Export questions to file**.



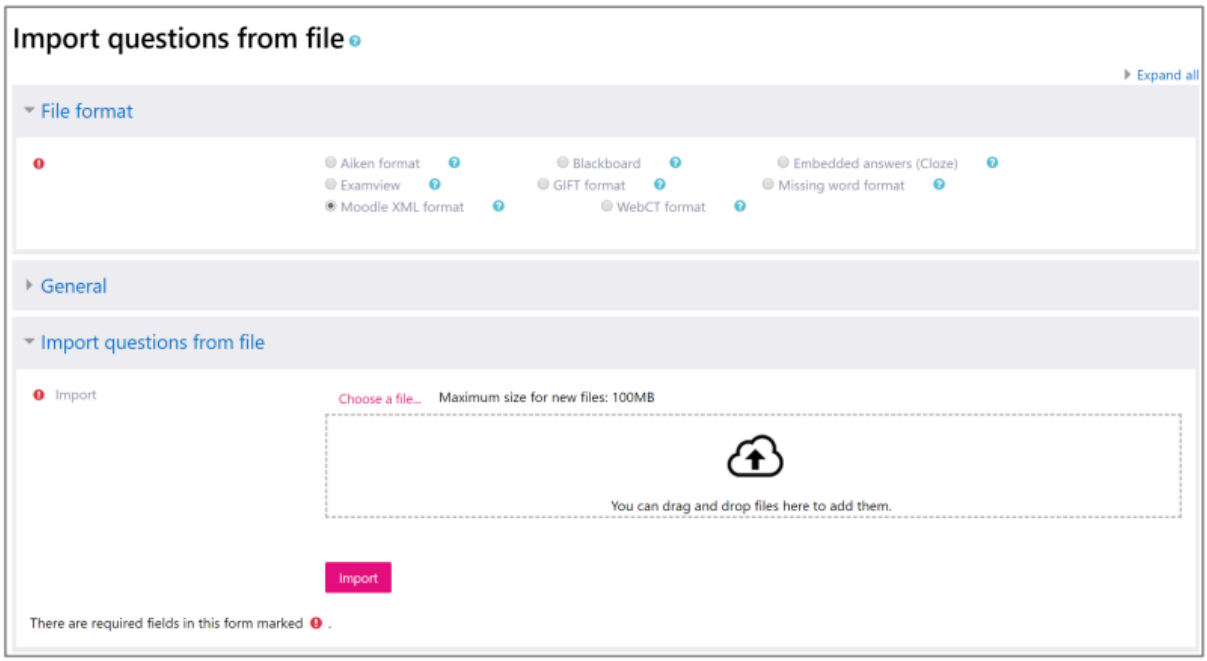
4. Dialog **Save As** comes up. Select the location into where you want to locally save the exported file. Currently the **Desktop** is selected. Click **Save**



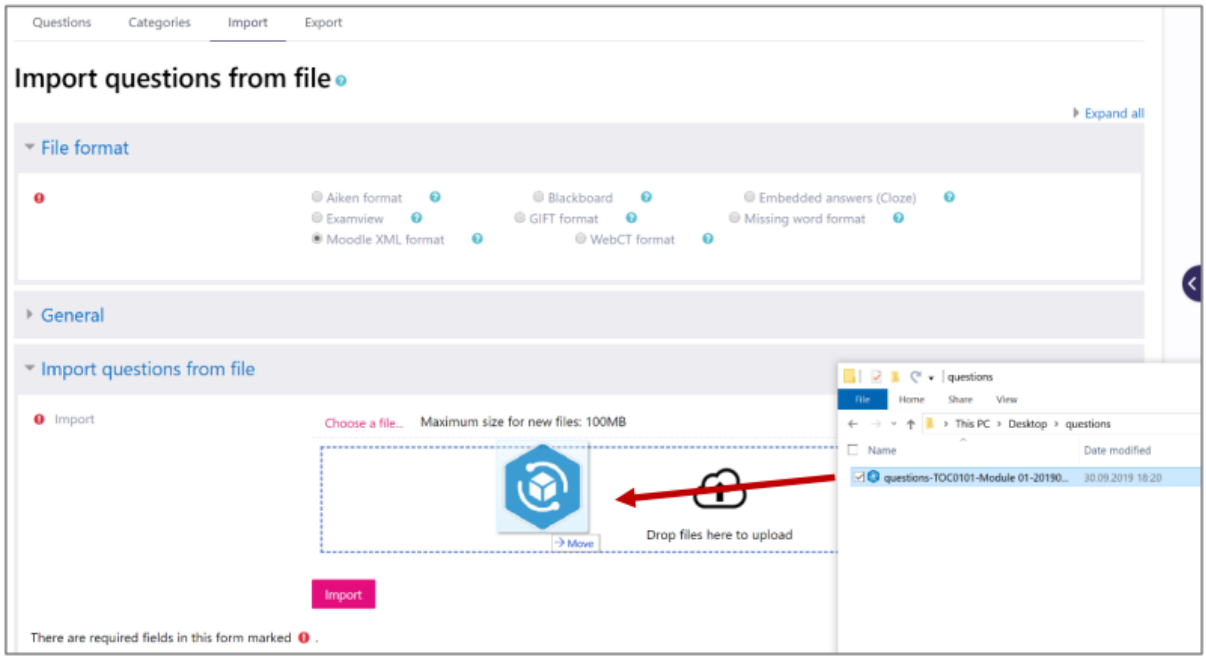
5. Select another course, from where you want to import those questions that you previously exported. Once again, from the section **Question bank** > select **Import**. Dialog opens:

a. **File format > Moodle XML format**.

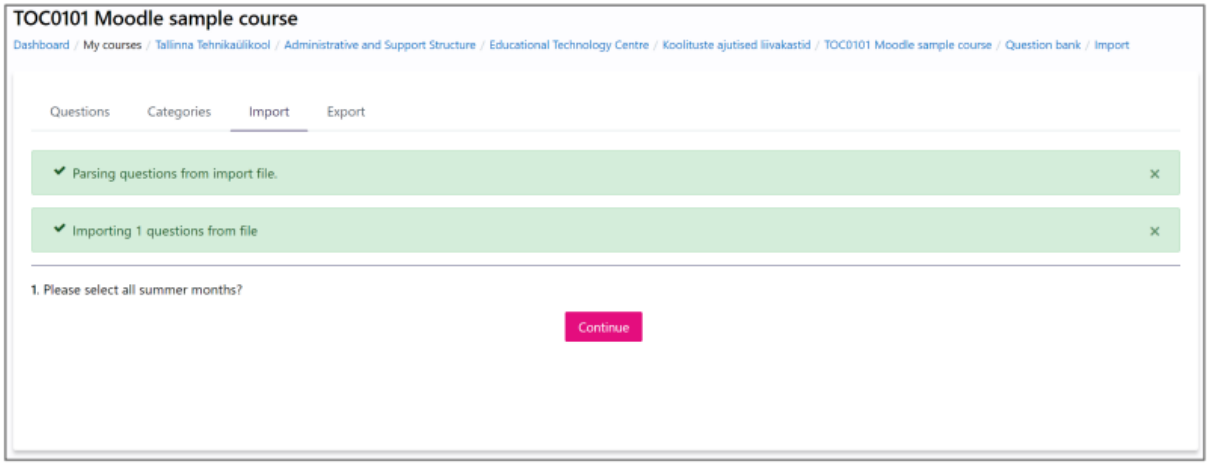
b. Open section **General** and check that you have selected the correct category into which you want to import those questions. On the other hand, please recall that we wrote the category into the export file and therefore this helps us to import those questions into the same category also. There is a special selection box **Get category from file** for that reason.



c. Navigate to the folder into where you export your questions (find that *.xml file). Just drag and drop that file into the box (shown below). Alternatively, you can click on **Choose a file**… and navigate and pick that same file from your PC.



d. Click on **Import**.



e. You get a preview of questions that will be imported. Confirm by clicking on **Continue**.

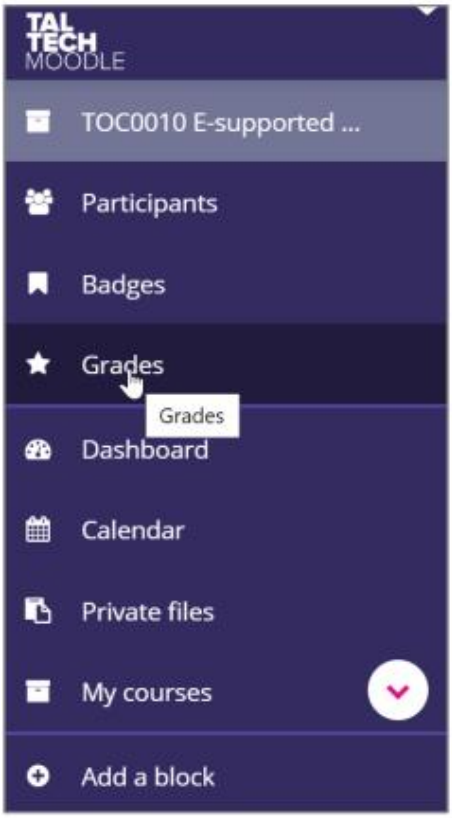
6. If you now investigate your **Questions bank**, you should see a category called **Module 01** (or any other name that you have used) with all the questions from the previous course. You have a possibility to relocate those questions into some other categories.

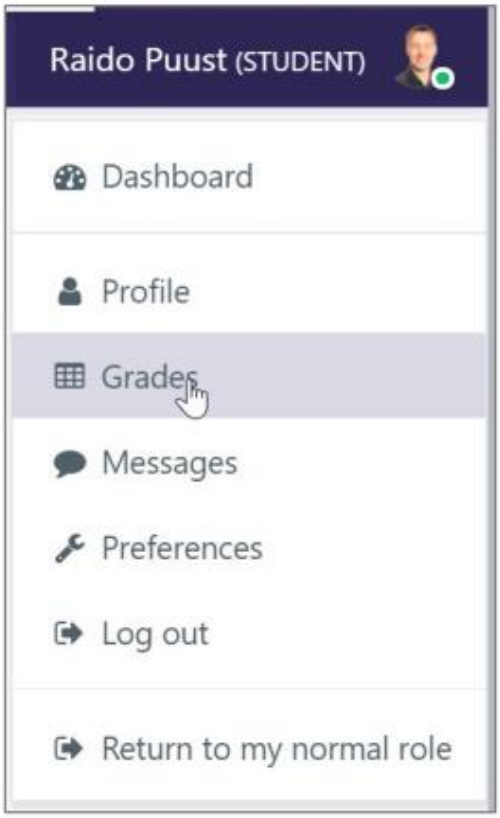
Summary

With this we have successfully completed the export/import workflows in terms of adding questions from one course to another. But please remember that if you now want to create a quiz based on those questions, you need to create **Quiz** activity first, choose the settings for your quiz and add questions from imported categories. Please refer to the guidelines that explain the basic workflows for that.

10.5. Grade book main settings

Grades or **gradebook** is visible by default in teacher as well as in student view. It can be accessed from the main administration block. The following images show various locations, from where the Grades can be accessed.

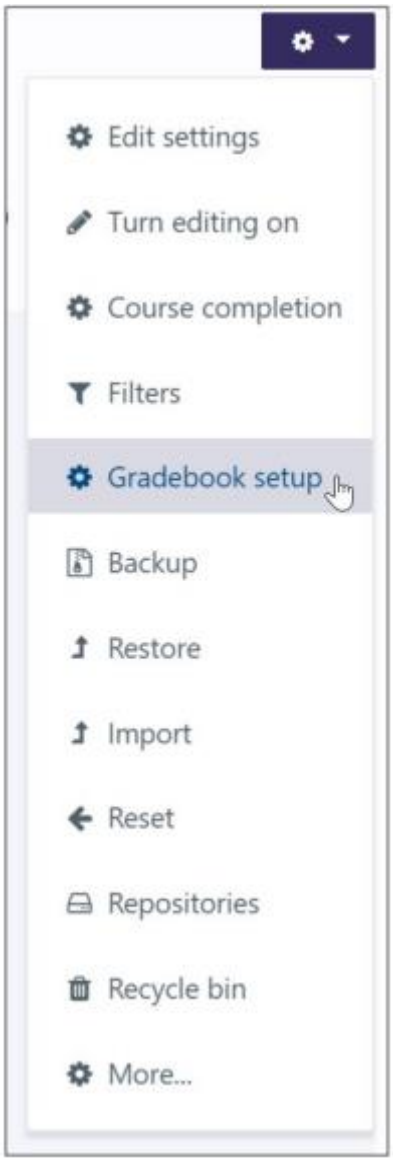




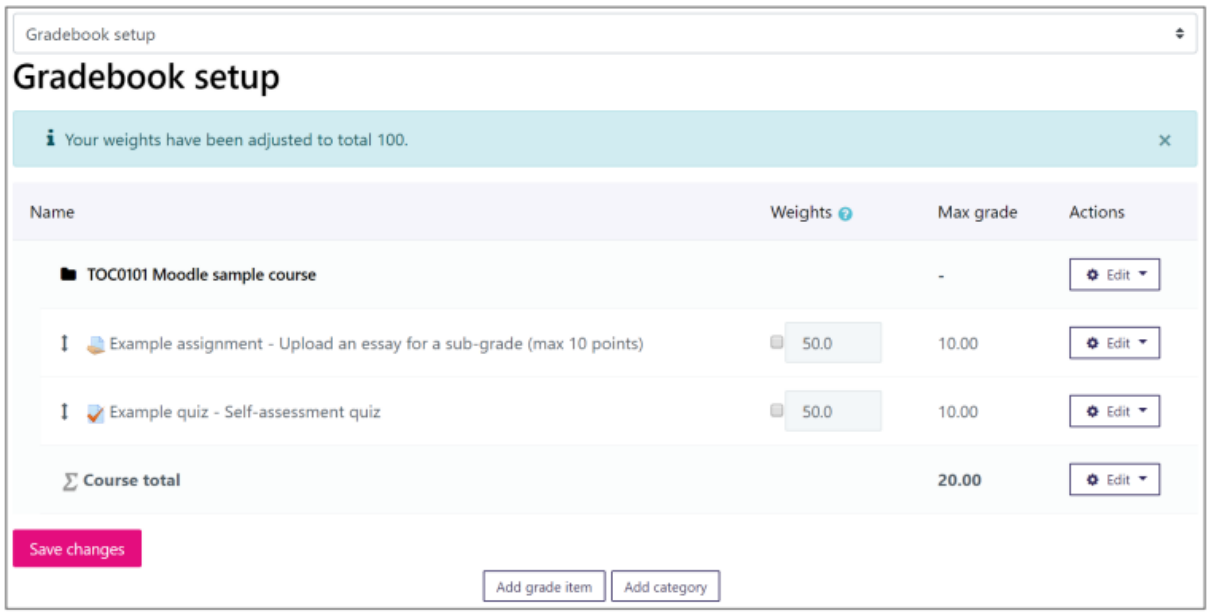
You can hide gradebook link from the course main settings. By default, it is activated (**Administration > Edit settings > Appearance**)

Teacher should ensure that once student clicks on a gradebook (or grades), it shows the information in an unambiguous manner. It doesn't mean that all grading should happen in Moodle (ex. contact hours / exams etc.), but it should clearly show what part can be passed in e-learning and what parts are marked/graded/passed in contact hours. Also, those weights should be correctly defined, according to the evaluation criteria and study guide.

All Moodle activities that include some form of sub-grade (point) feature, go automatically into gradebook (ex. quizzes, assignments, etc.). But we may not want to include all those activities as giving sub-grades. As a teacher we can set up our gradebook from: **Administration > Gradebook setup**



You will see the gradebook setup page with all graded items. By default, those are all in one, main category.



Please note, that currently our course gives 20 points. It doesn't have to be 100 points, but this should be explained in the study guide. For example, maybe a classroom exam gives 80 points. It is crucial that when you add different assignments / quizzes, you define those with correct points at the very first step (you can easily change that later, but once done, it is done). So, if an assignment gives 10% of final grade, you define it as 10 points or 10%, and this appears also in the gradebook.

But what if we want to show quizzes in a way that those do not give points but belong into šelf-assessment type? In that case, if we look back to our current gradebook setup, the sum of points should be 10 and not 20 points. How we can change it so that quizzes do not give points?

It is quite easy. You do not need to change quiz itself, also you may still want to show some points during the quiz attempt, you simply do not want to account those into final grading.

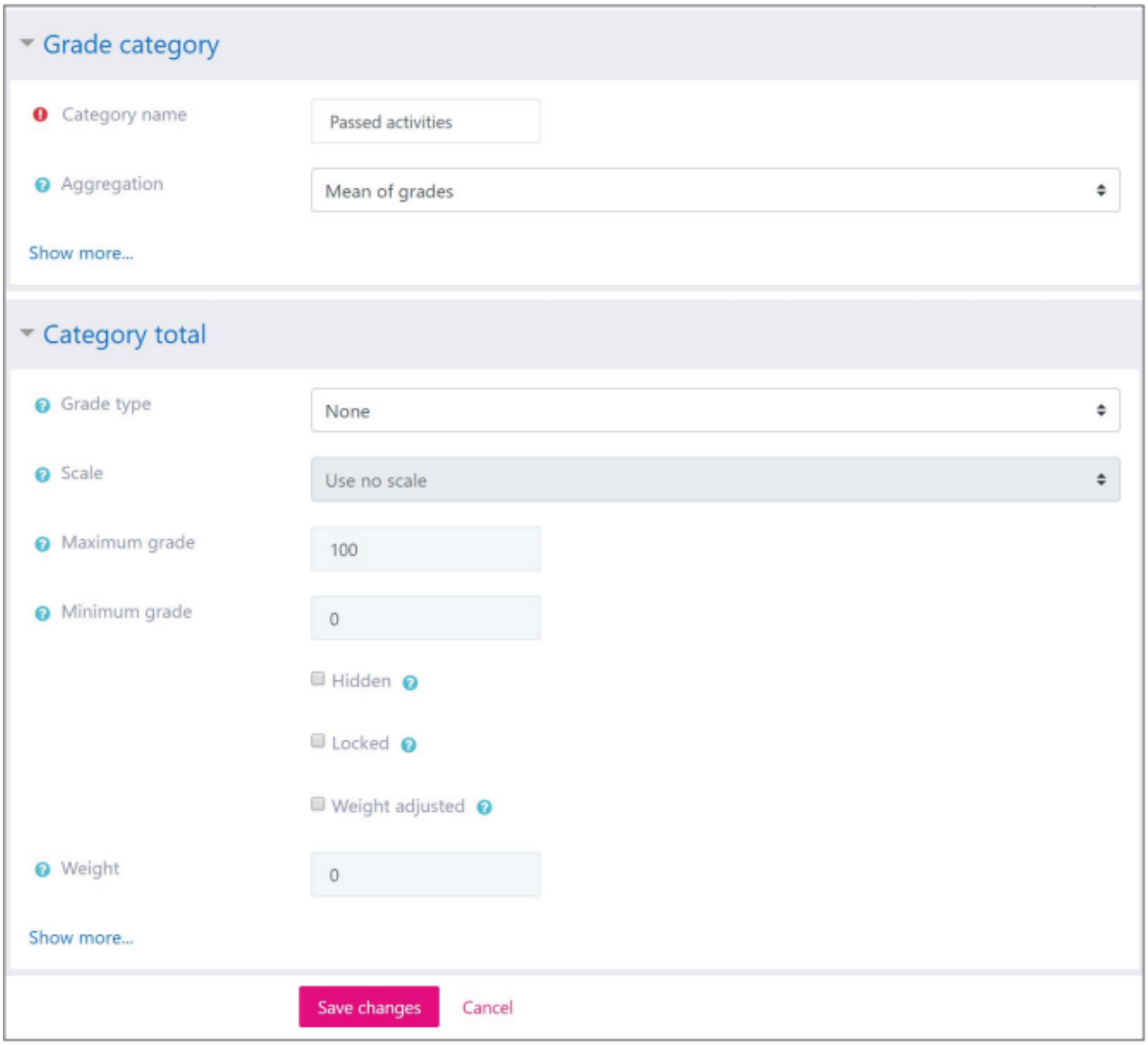
First, you create a new category. Click on **Add category** button.

New page is displayed where we do the following changes:

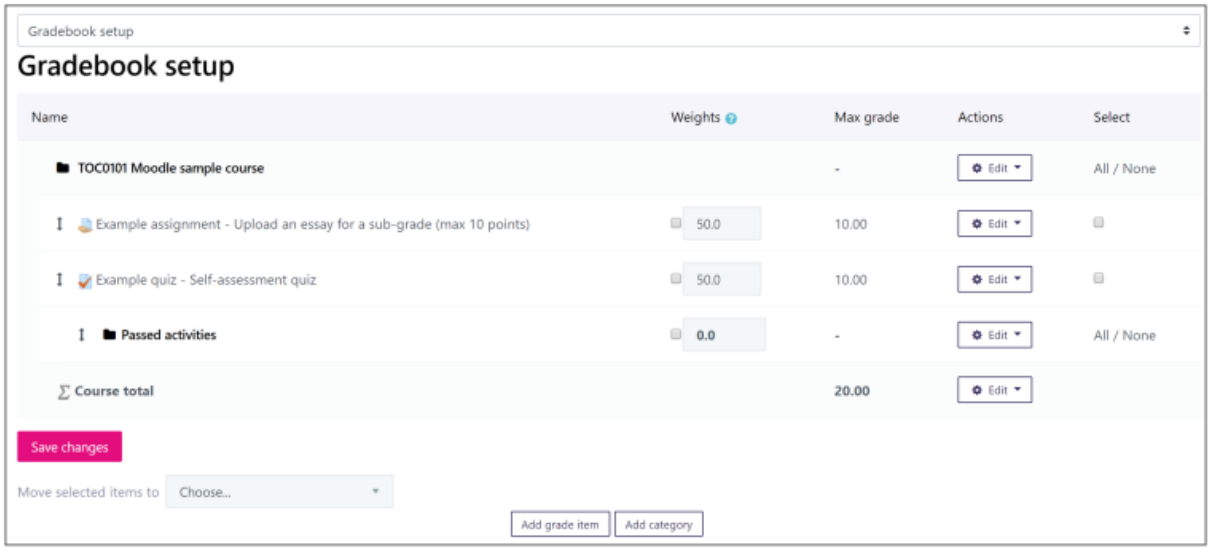
• **Category name** - enter a name here, please be descriptive so that student can easily understand as well (example. **Passed activities**).

• **Aggregation** - you need to change the default value to something else to be able to change grade type value that follows (select for example: **Highest grade**).

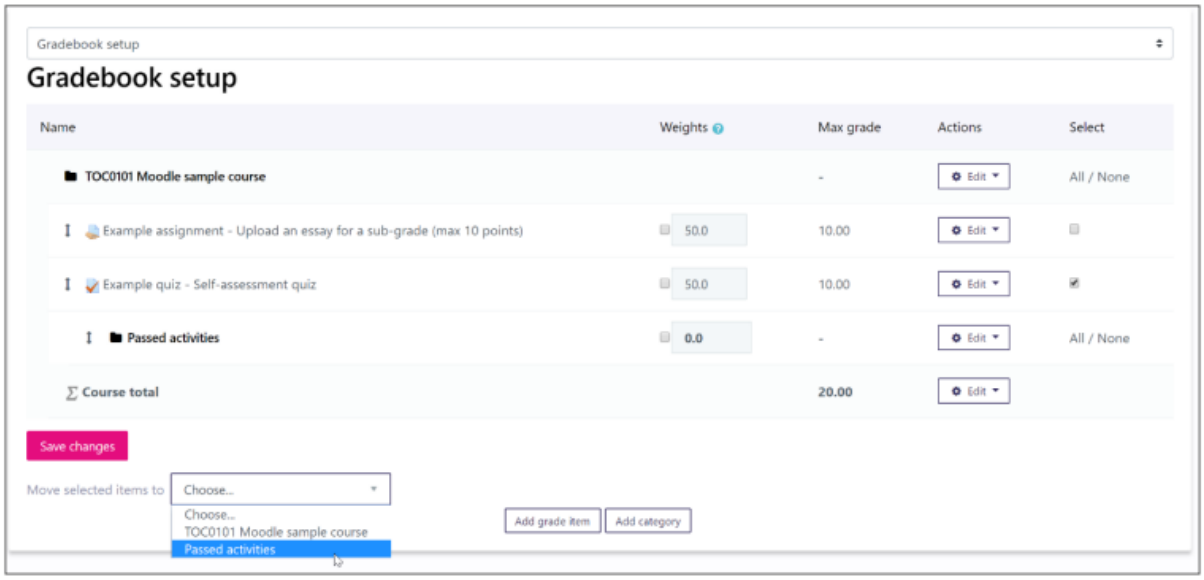
• **Grade type** - select: **None**



Save your settings and the new category is visible in your gradebook.

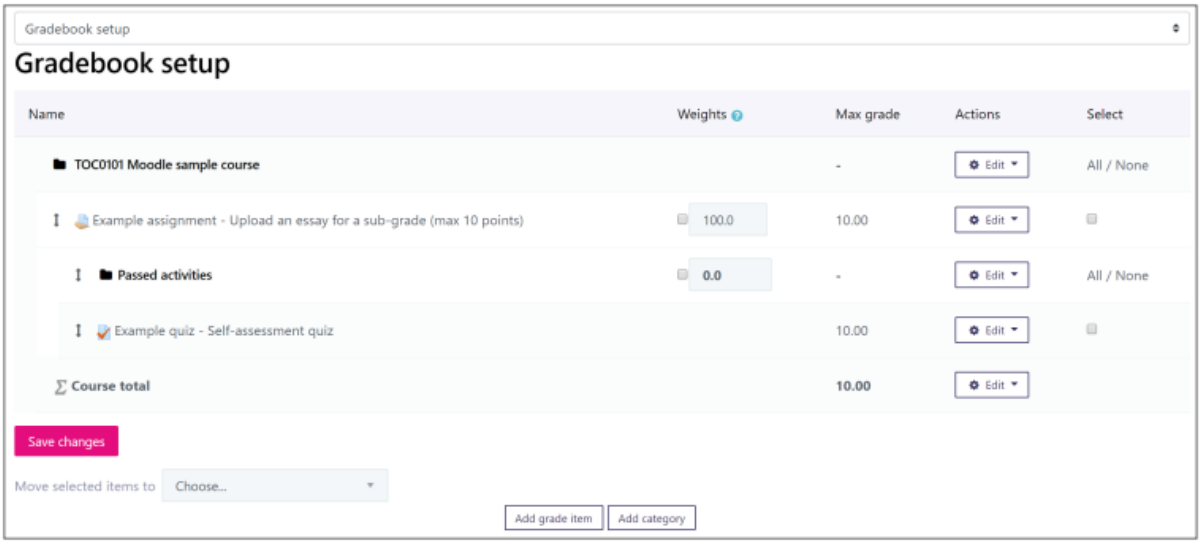


In general, you can create a sub-grading category where activities will not be accounted for a general course score. You simply shift those items into that category to remove their counting behaviour. Select the quiz **Example quiz - Self-assessment quiz** from the last column **Select**.

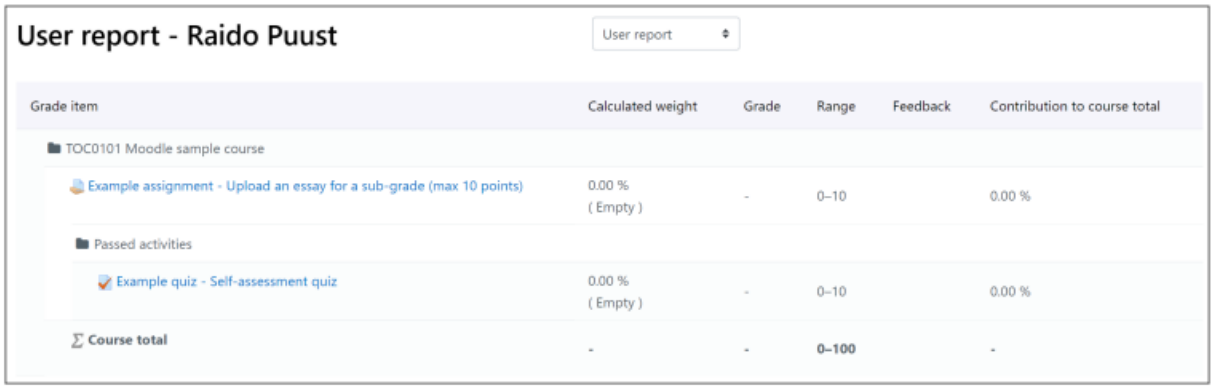


Now select: **Move selected items to = Passed activities**

Once you select that, the change will be carried out automatically. And your total score is now 10 points. Let's assume that these 90 points come from the classroom type exam. So, we want to add that grading item as well to notify students through Moodle in a way that everything is in one location.

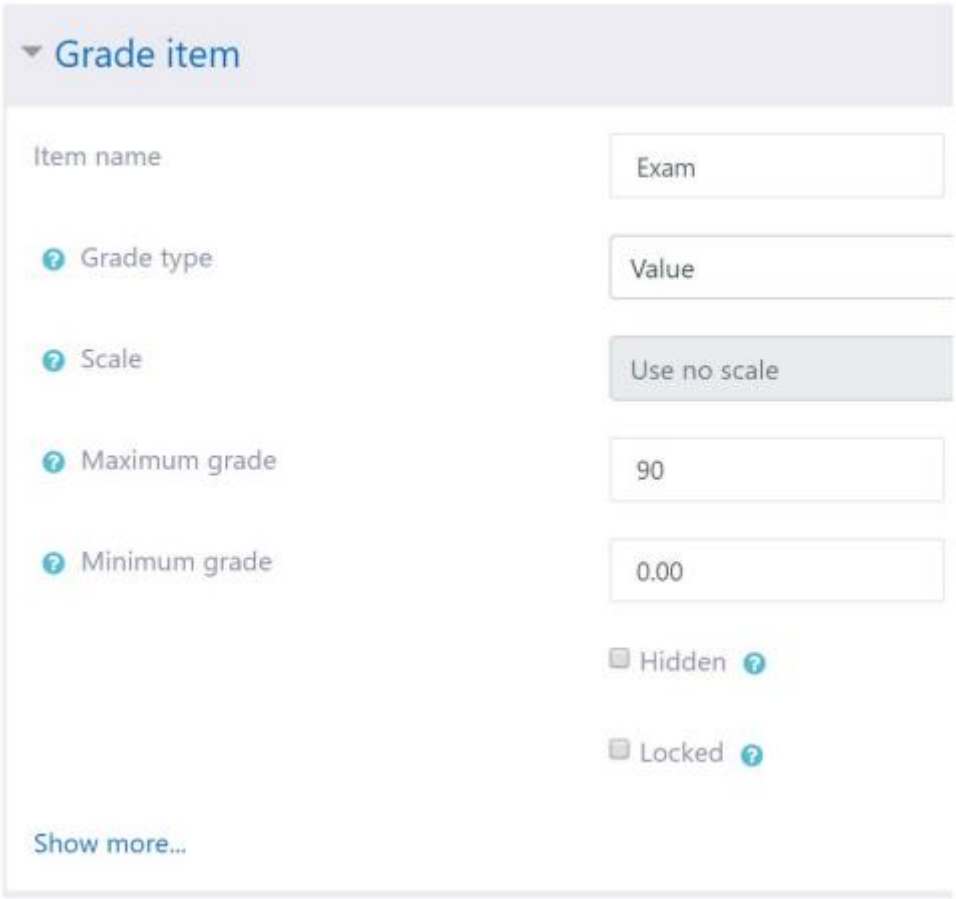


And also, from student perspective.

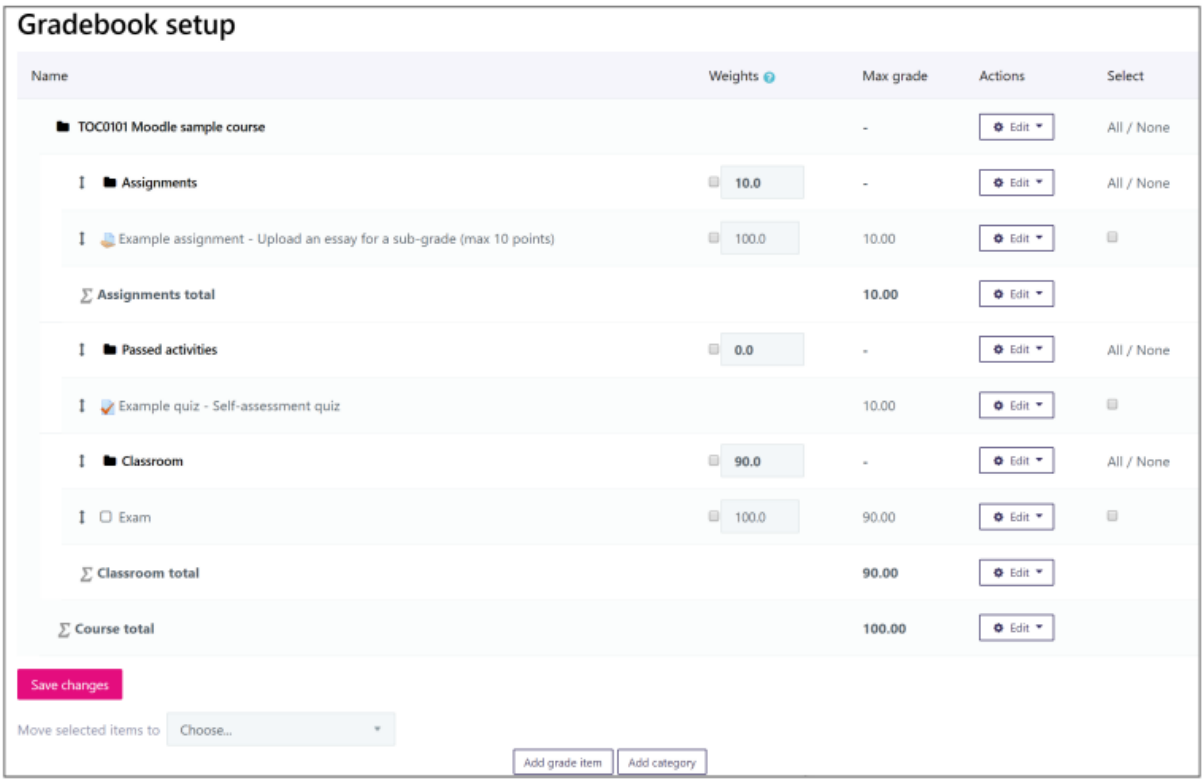


It doesn't mean that you only use categories to make a difference between passed/failed items from points giving items. If you have lots of different graded items, you can categorize those by type, and it makes again a lot simpler for the student to follow how she/he proceeds and what parts are her/his weak sides. You can also add graded items manually, meaning that those are not directly associated with Moodle activity. For example, you want to show exam or lab result in this table. To do that you click on **Add grade item** button and a new page will open.

You can give an **Item name**, add a value as a **Maximum grade** and click on the **Save changes** button.



This, manually graded item can also be included into a separate category to make things easier to follow.



Remark: As can be concluded from the gradebook setup screen, we have three main categories. First, we have passed activities - self-assessment quizzes, then we have assignments that give 10 points in total and finally we have a classroom type activity that will also be entered here in Moodle and the final grade can easily be followed by a student at any time.

Gradebook plays an important part in an e-supported type of learning process. Therefore, it is important that we do not give a wrong impression here and do not let students get confused (including in such cases, where the gradebook shows the course total 253 points and not 100 points or 100%).

Summary

You have successfully tuned up your course's gradebook. Gradebook plays an important role when it comes to reflect the learning process. Therefore, it is important that grade items are according to the study guide.

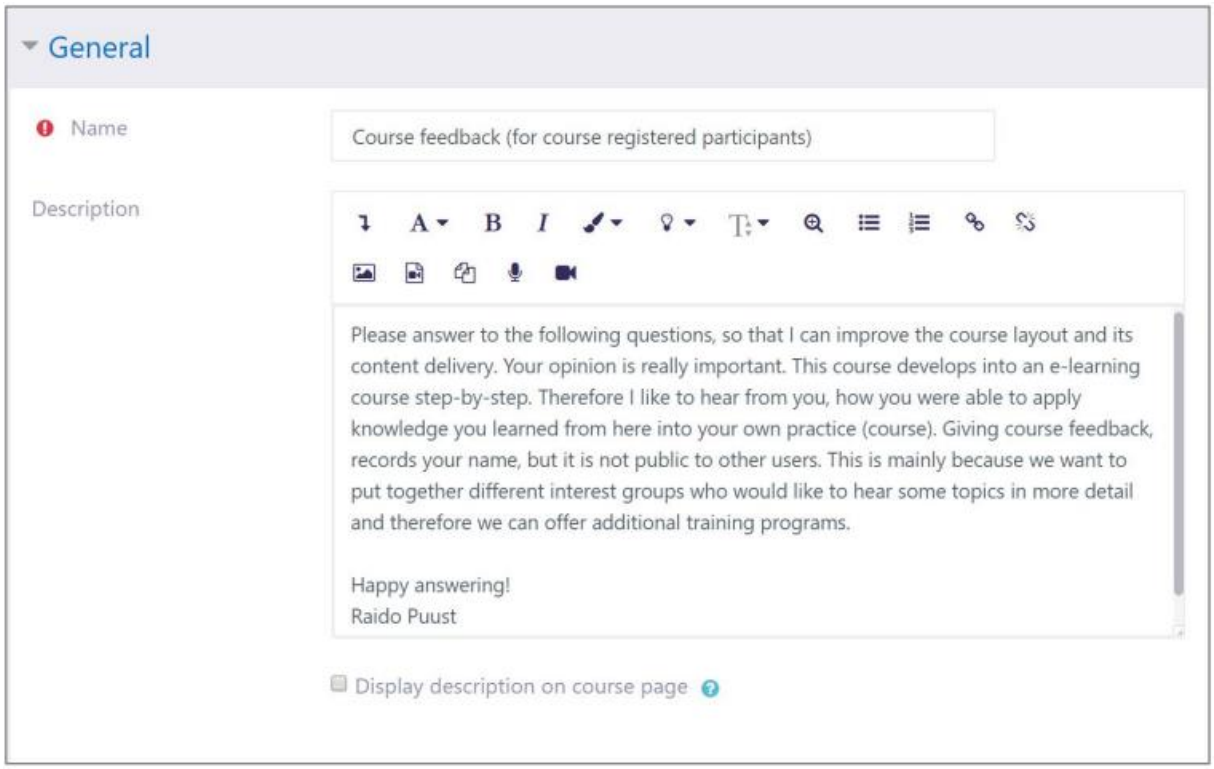
10.6. Add an activity – Feedback

In this example you will practice adding a feedback form to your course that helps you to gather feedback about the learning process which you use. This can be done during the course or at the end of the course. Moodle's feedback is different from the Study Information System feedback due to a possibility to dictate what you want to know from the participants. Based on that information you can improve the course learning process as well as the layout or quality of your materials.

Ensure that you are at your course front page and you have also activated the editing mode. Concentrate onto the section where you want to add a feedback link (you can change the location also afterwards). You add a feedback form by clicking:

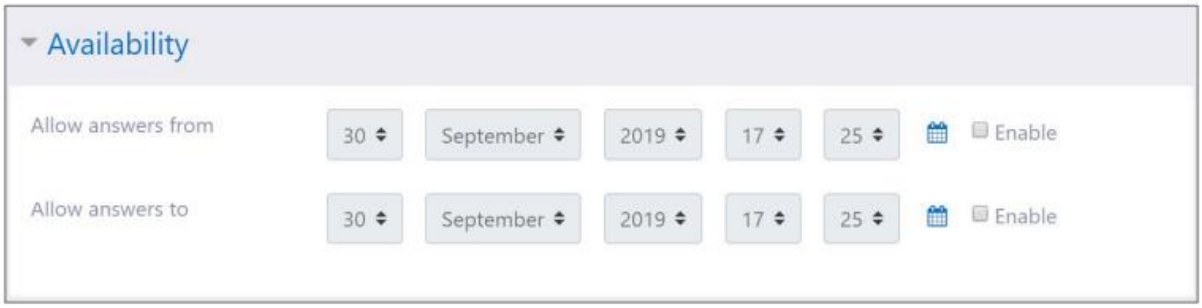
From the opening pop-up select **Feedback**. Once clicked, you see a new page, where you can add different settings/information. Let's look how to set it up.

New page is opened, where we define the main settings (before we start adding questions). Let's pay attention to the core settings. First section is called **General**. In this section we can give a meaningful name to our link and add a description that explains why we gather this feedback; can participants include their feedback also anonymously if they would prefer to do so. The image below describes an example of what and how you can format the introductory text. It doesn't mean that you must follow the given example.



Next section is called **Availability**. As with other activities you can apply some certain date range when this feedback is available. You can also leave *Enable* boxes as empty and assign this activity with some preceding activity that should be filled first. Also, you can simply hide

it and make it visible once you want to get the feedback. In our case we do not activate those dates.

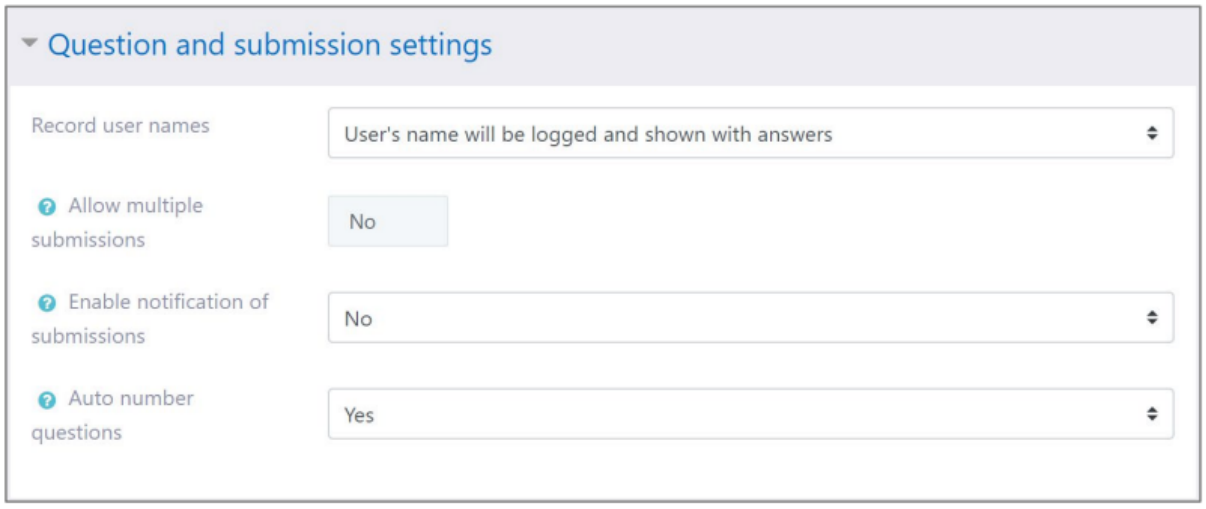


In the section **Question and submission settings** you can choose whether the feedback can be answered anonymously, or the user name will also be recorded. If you want to give a free choice whether to include a name or not, please leave this box as **Anonymous** and later when we add questions, we will include an extra question where student can leave his name and contact. Other settings:

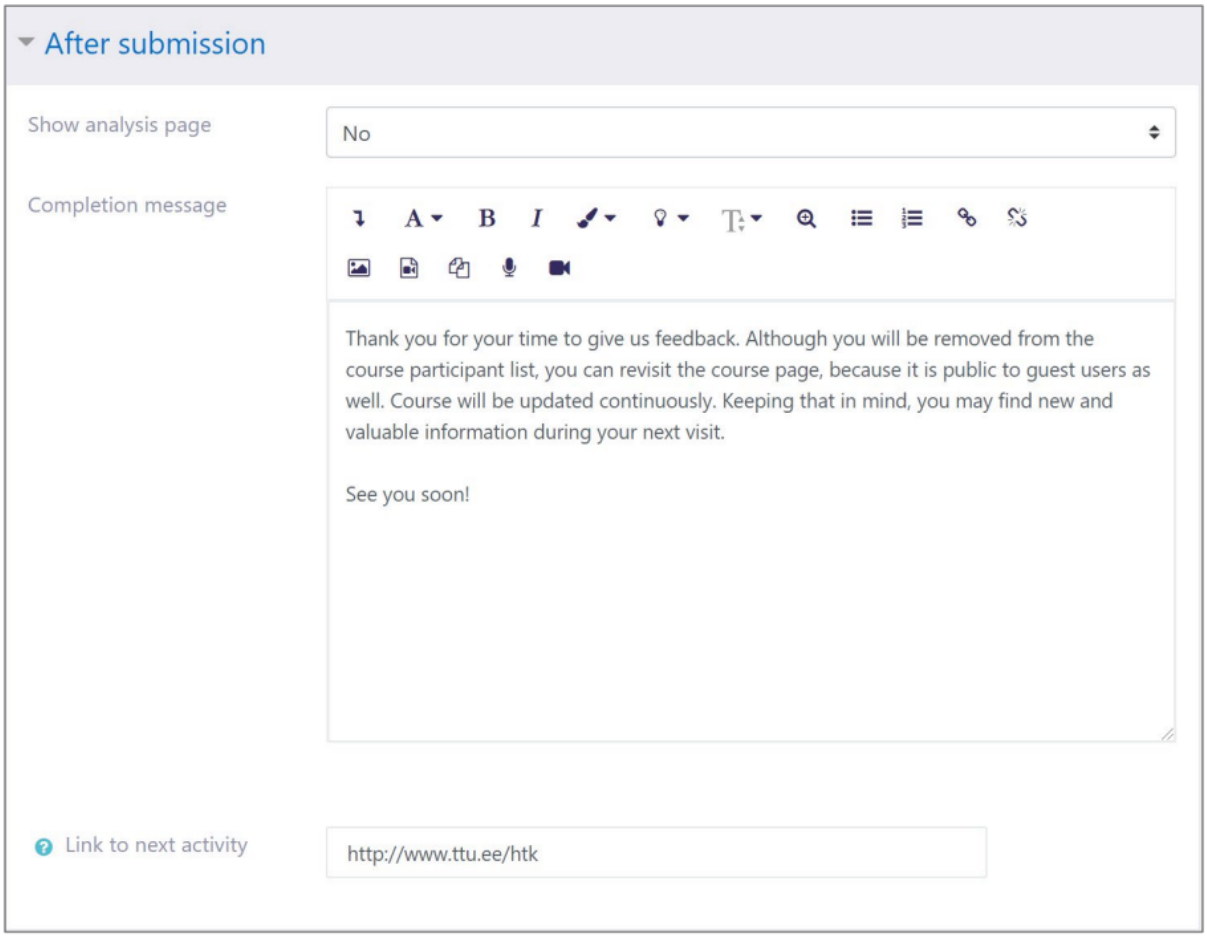
• **Allow multiple submissions** – in general we use one feedback form only for each time. If you want to ask feedback during the course as well, it makes sense to use a different link, because then you can analyse how students answered during the course and how they did after the course.

• **Enable notification submissions** – you can select if you want to get an email once a student has given a feedback.

• **Auto number questions** – simple choice, do you want to number your questions or not. In our case we leave it as **Yes**

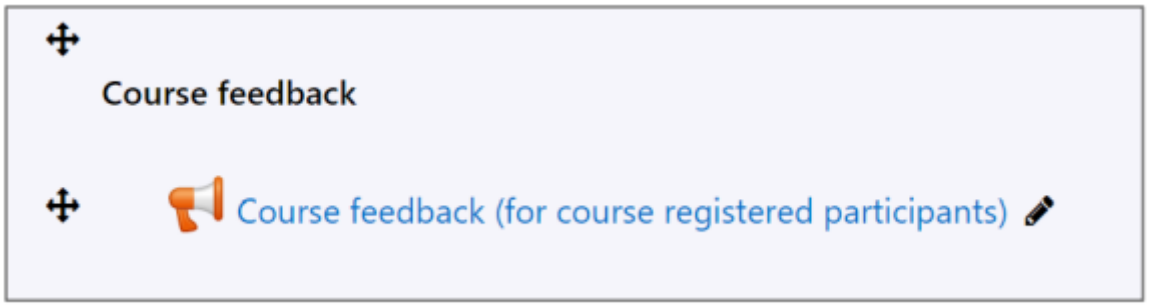


In the section **After submission** you can add a message that will be shown to a student after she/he has given feedback. Therefore, a simple "Thank you" is always good to add. At the very end of this section there is another text box. You can add a webpage to which the student will be directed after the submission. We leave it empty, meaning that students can easily stay in the Moodle environment and perhaps revisit our course page.



Other sections are currently not important, just click on the **Save and return to course** button.

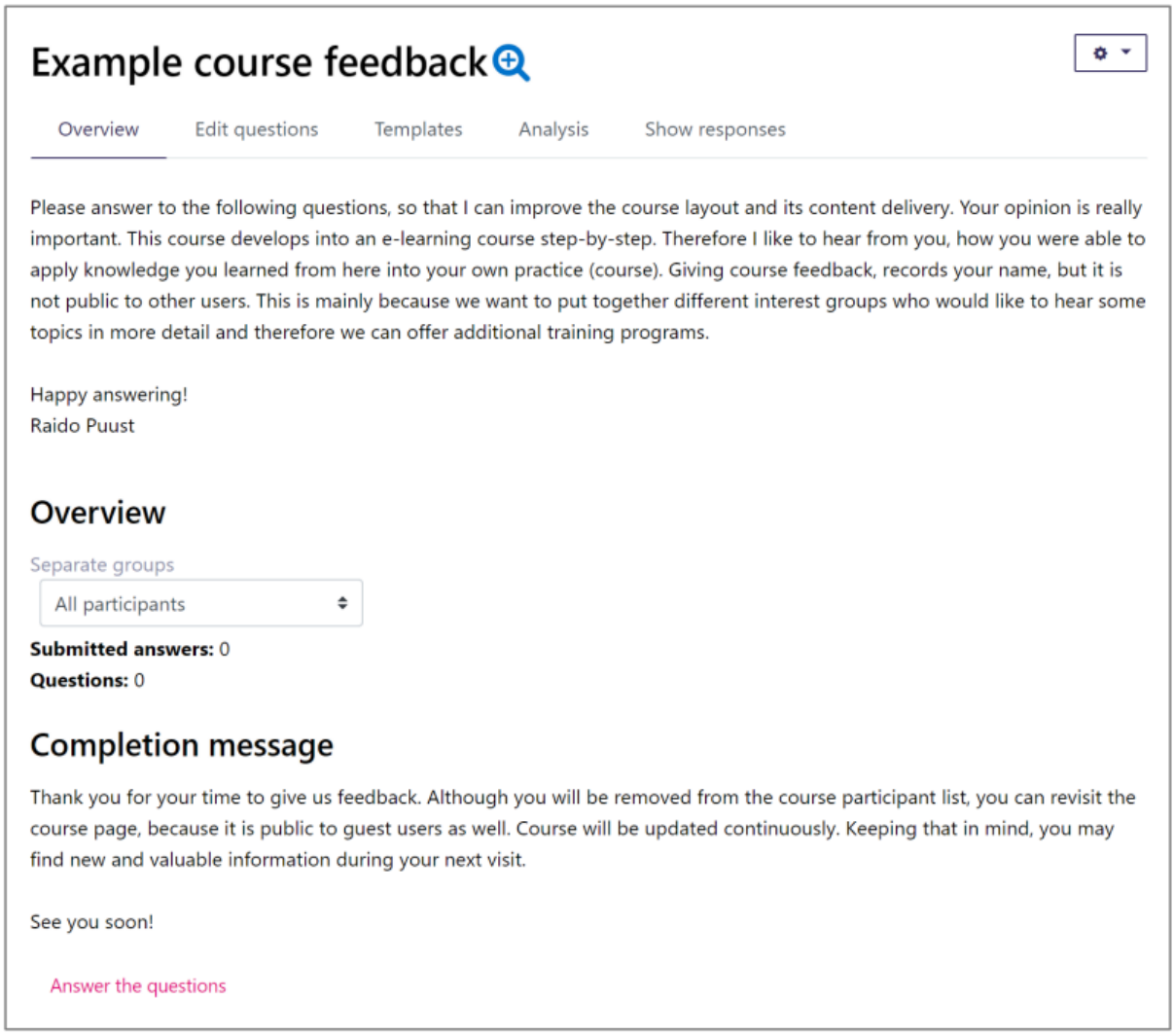
You are back on the course front page. The result may look like this.



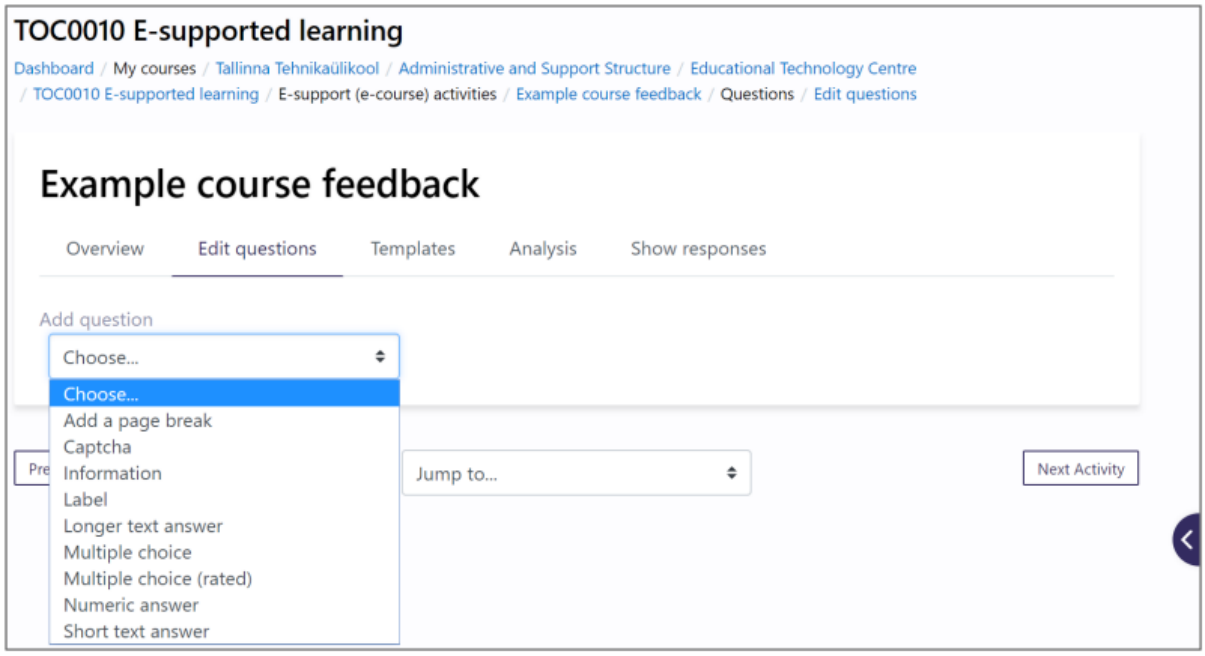
The next step is to add questions to our feedback form.

Adding questions to our feedback form

Click on the **Course feedback** link that you have just created. The following screen will be shown that is a teacher's view.



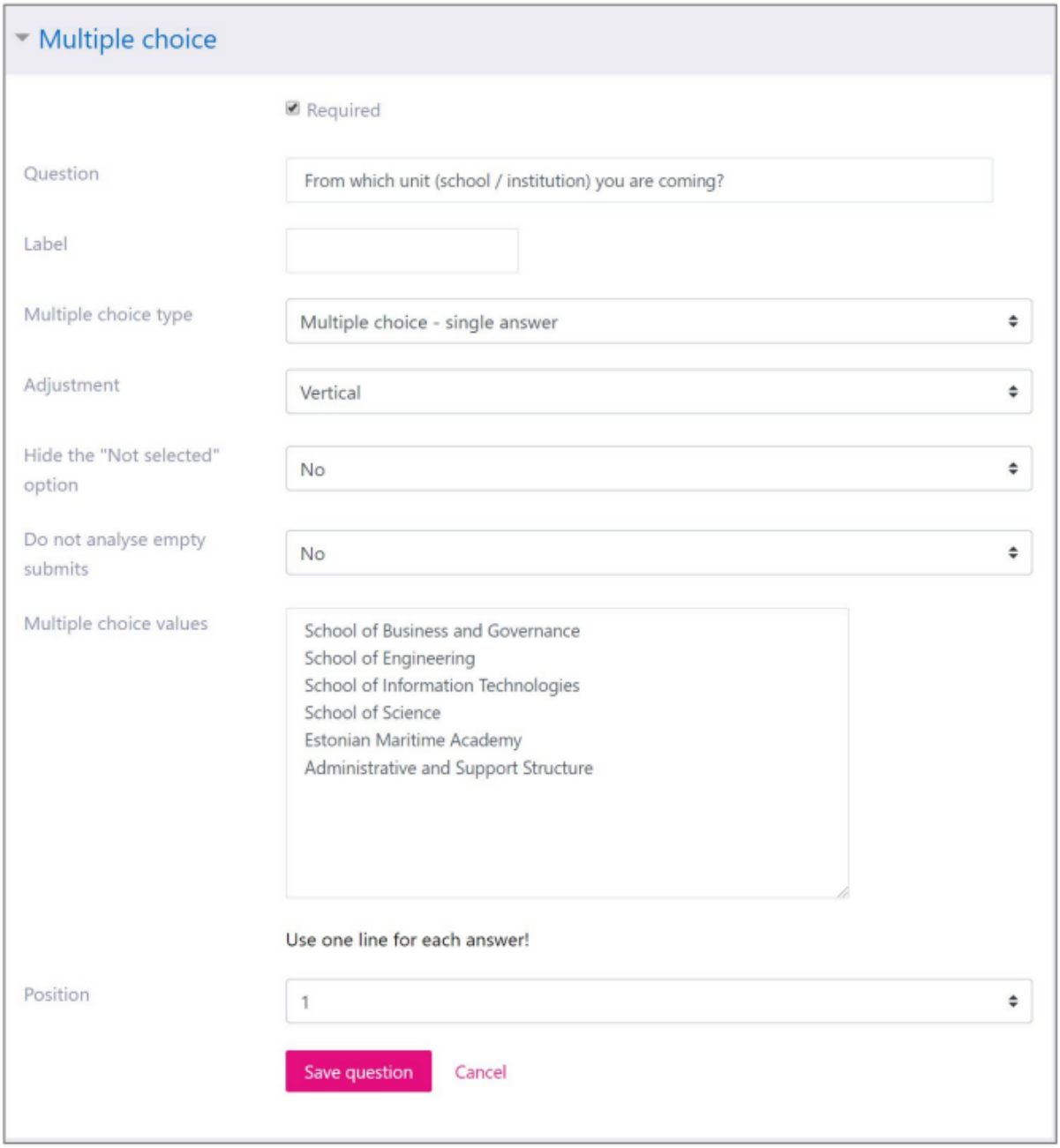
Pay attention that on the top of the page you can see various tabs. To add questions just click on **Edit questions**. A new page is shown, and you can click on the drop-down to add different types of questions.



Our main goal in this example is to practice one multiple choice question, one longer text answer and a possibility to let the student add her/his name. You can ask whatever is important for you in terms of the course learning process. The main goal is to gather information that can be used for improvement. Also, you may want to ask questions that help you to understand how student answers if she/he was attending from a school or as an Open University student.

Adding a multiple-choice question type

From the previous image shown, please select **Multiple choice**. The following page will be shown. Let's talk about the main settings here.



• **Required** – activate this box if you want an answer to this question.

• **Question** – add a text for your question.

• **Multiple choice type** – you can select if multiple answers are possible or not. In our case, only one can be selected.

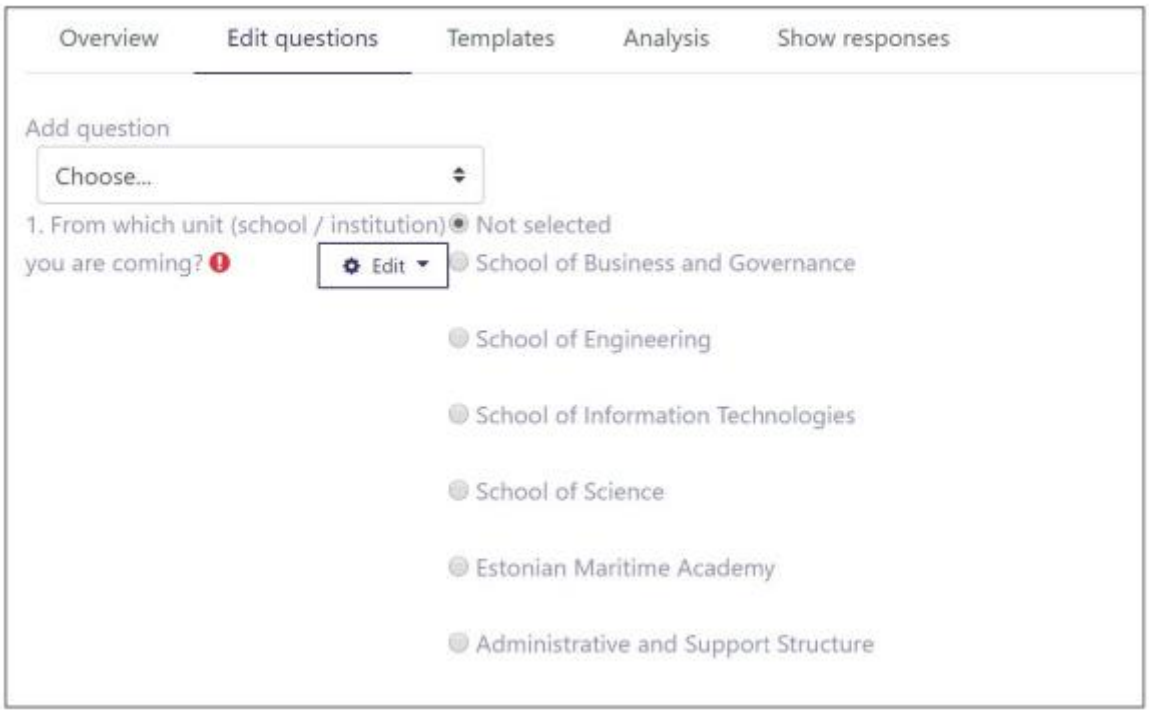
• **Adjustment** – vertical (placement).

• **Hide the "Not selected" option** - will there be a separate answer by default that states the status of this question? We want to keep it visible.

• **Multiple choice values** – into this box you write/copy your answers/selections. Each new row means a separate answer/selection. To change the row while typing, just hit ENTER. Please ensure that at the end of the list there are no empty rows.

• **Position** – states the question's position. Makes sense if you want to change the location later. Right now, it is in automatic position (from top to down).

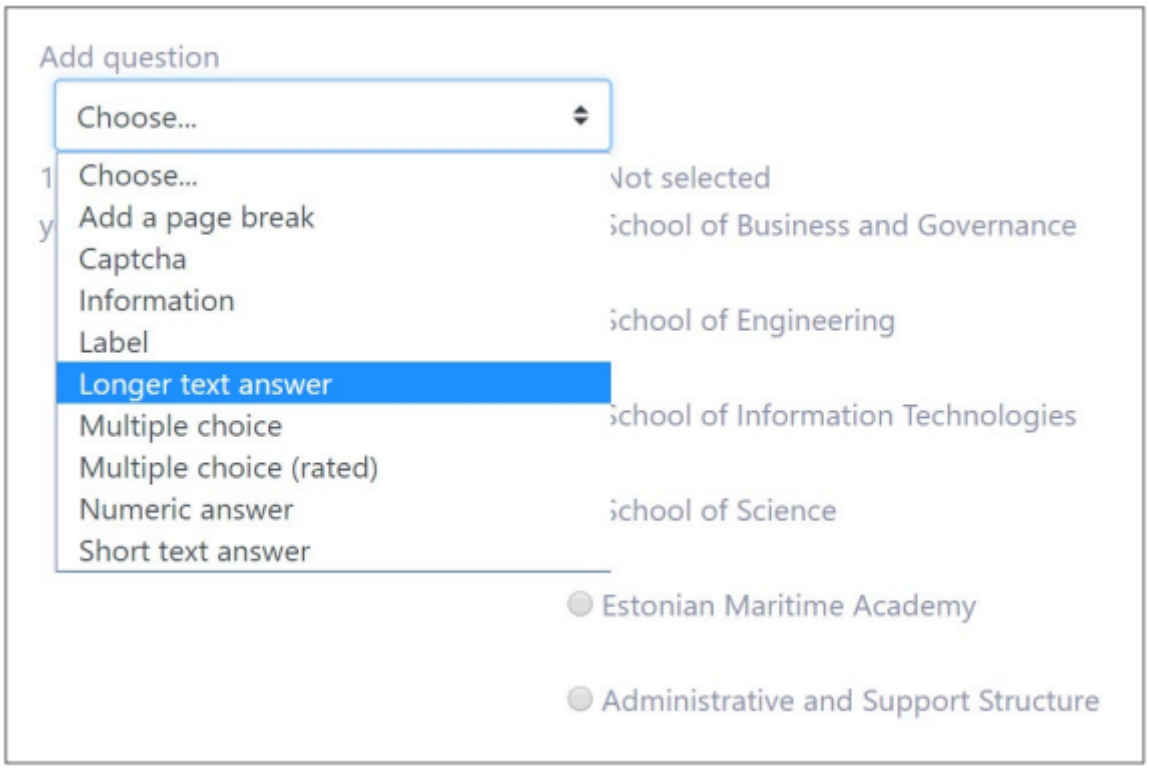
You can click on **Save question** to save your first question.



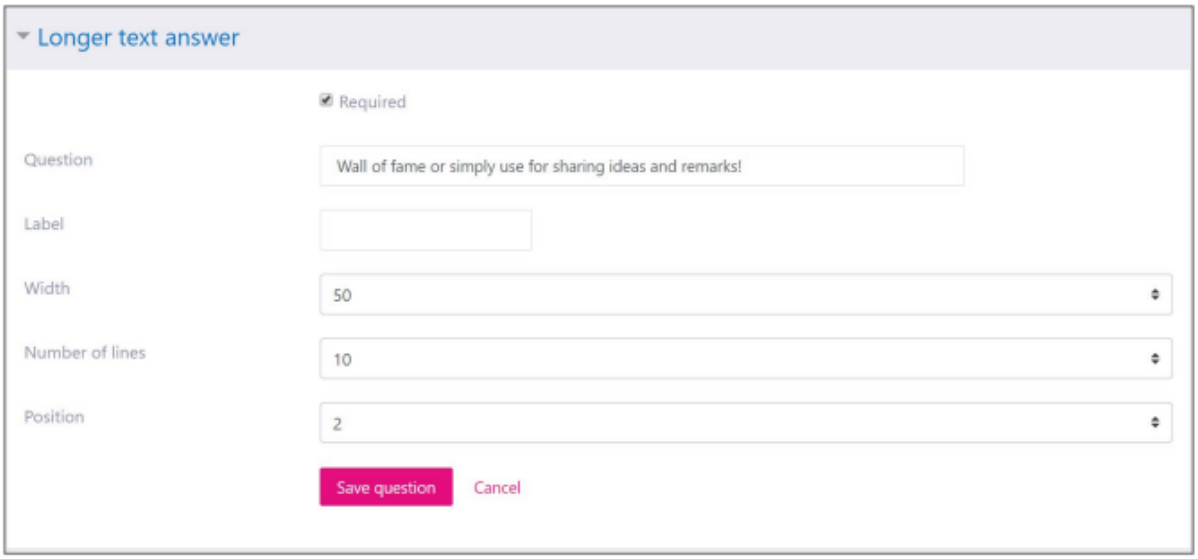
In the same manner you can add other multiple-choice questions. If you want to edit your question later, use **Edit** link.

Adding a longer text type question

In the previously shown page select: **Add question > Longer text answer**



Settings page will be shown.



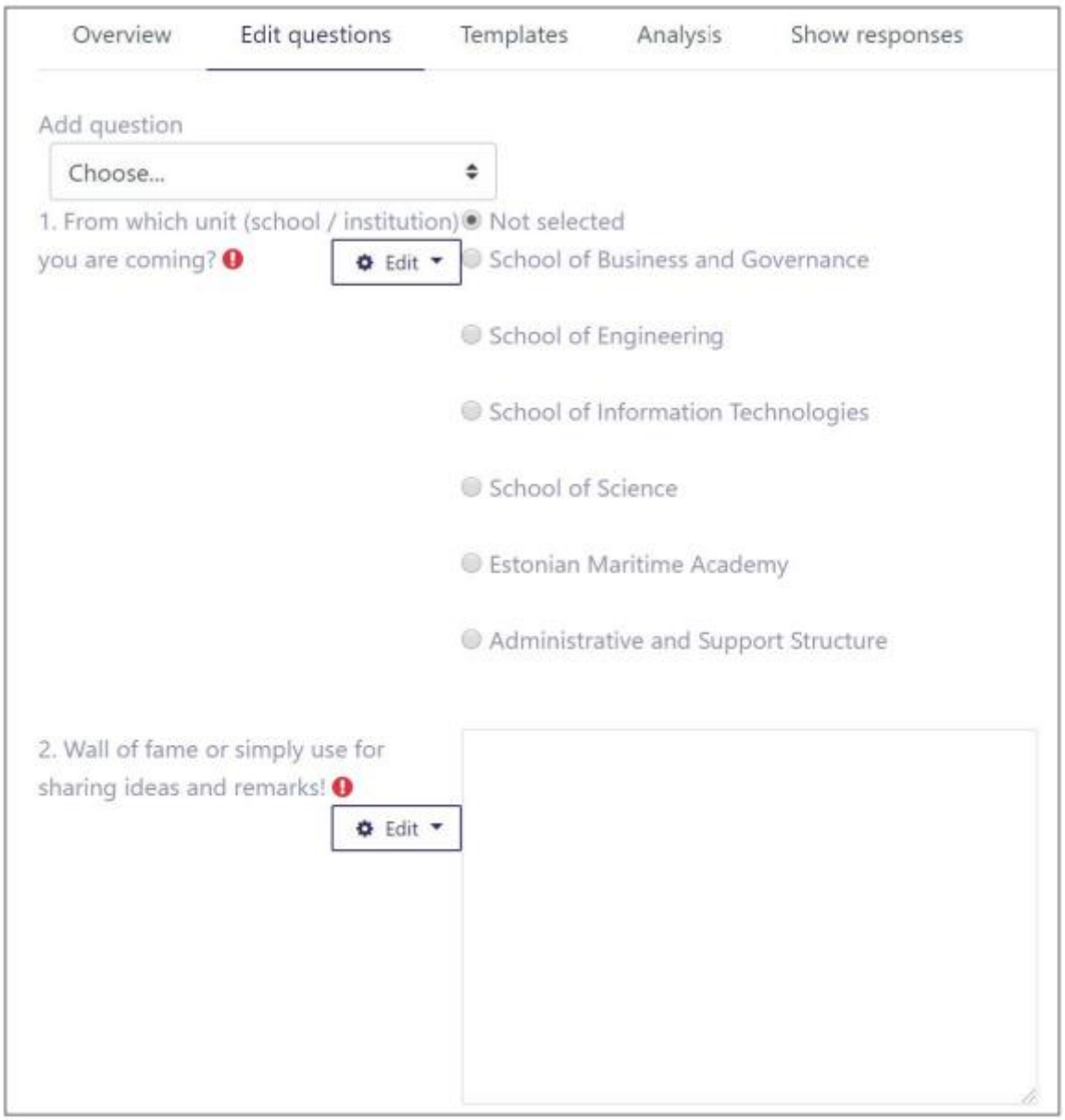
• **Required** – select this box if you want to get at least some answer to this question.

• **Question** – add the question itself.

• **Width** – select 50 (it defines the width of text box area and 50 is quite reasonable for that but you can test your own value as well).

• **Number of lines** – select 10 (defines the height of text box area in terms of rows/lines).

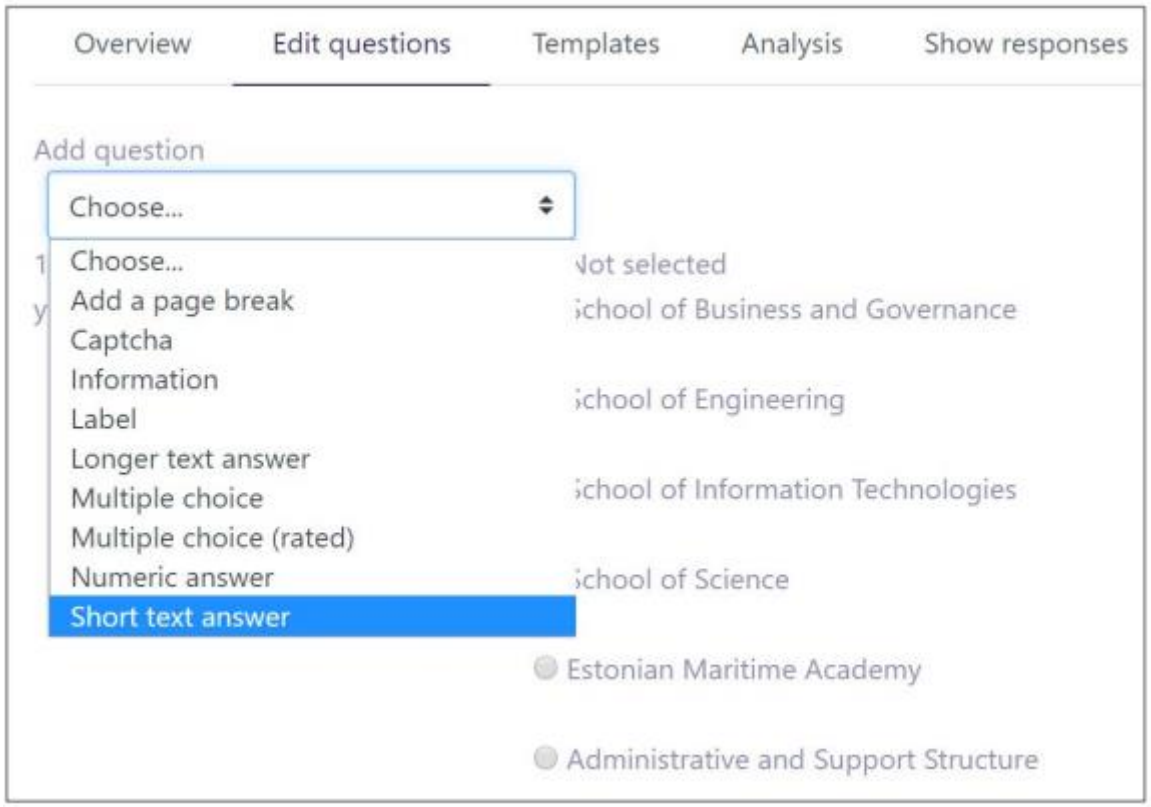
You can click **Save question** to save this question into your feedback form. You should see the following image.



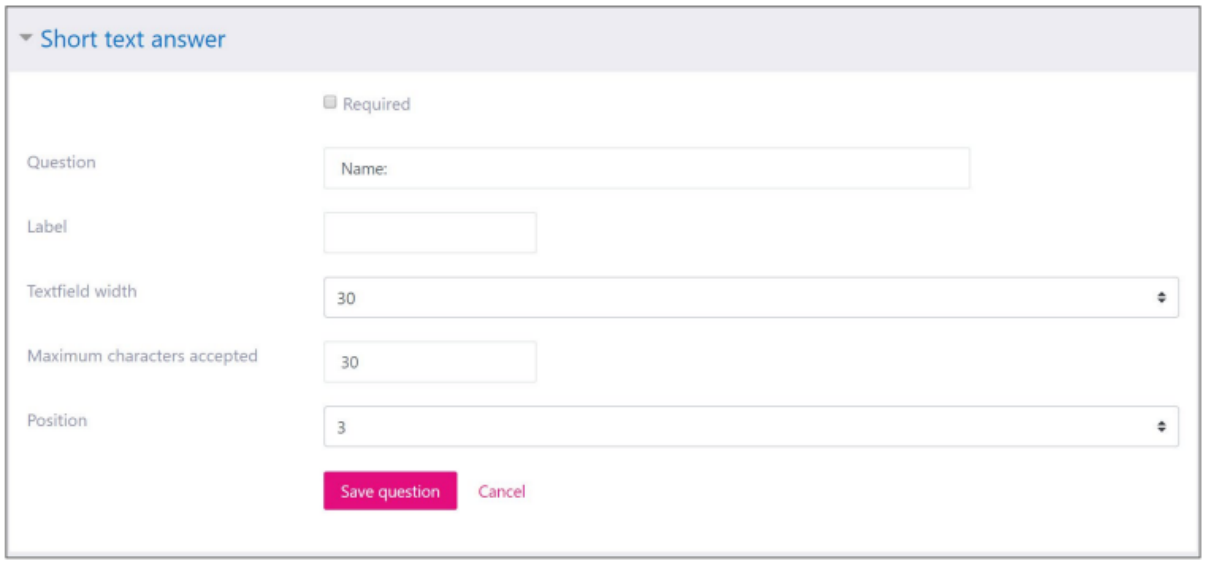
We will also add a possibility that participant can leave her/his name and contact details. Those will not be required fields, but we let students to decide if they want to show answers anonymously or not.

Adding a short text type of question

Select: **Add question > Short text answer**



The next page will be shown.



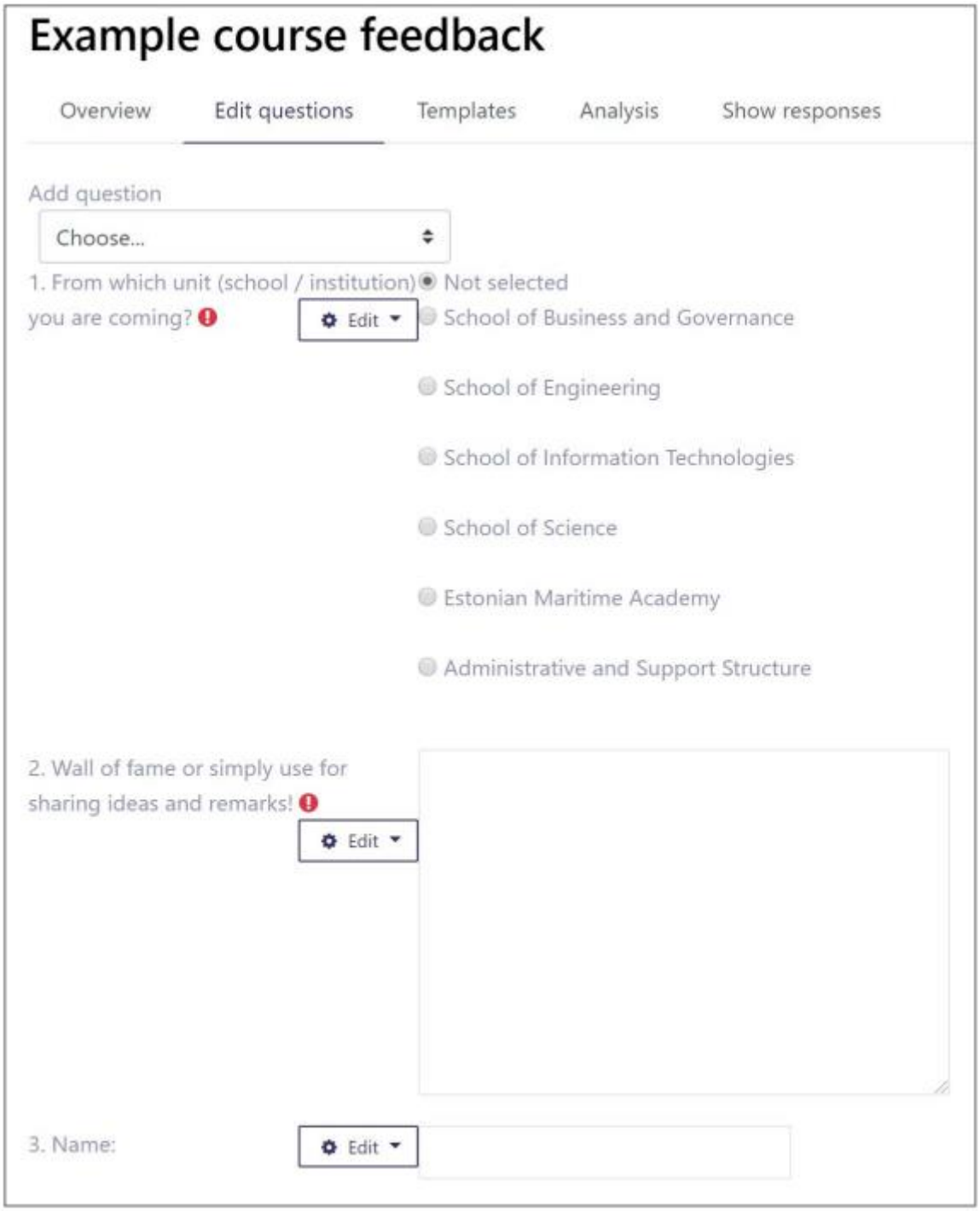
• **Required** – do not select it this time.

• **Question** – add a simple text that makes sense.

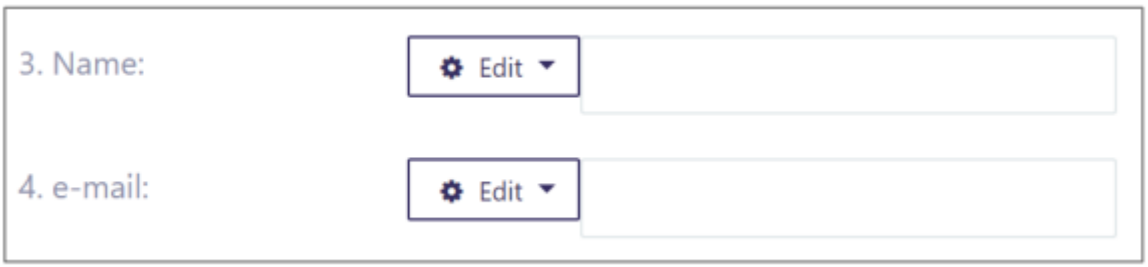
• **Textfield width** – enter for example 30.

• **Maximum characters accepted** – enter for example 30 (but you can change if needed).

Click on **Save question**. The next page will open.



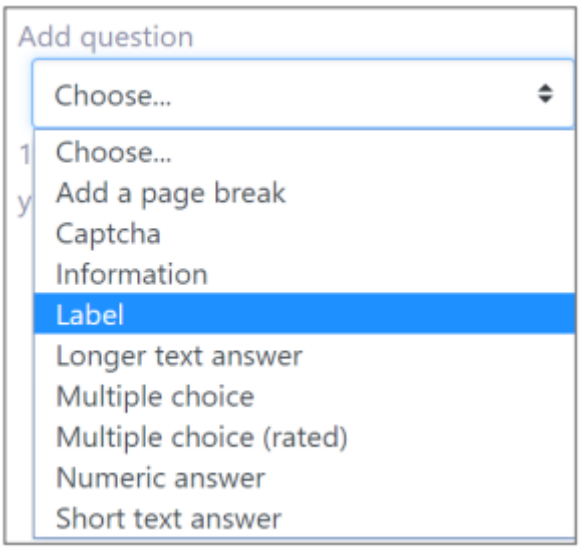
Please repeat the last question type and add one more that is name and e-mail. After that the bottom area should look like this.



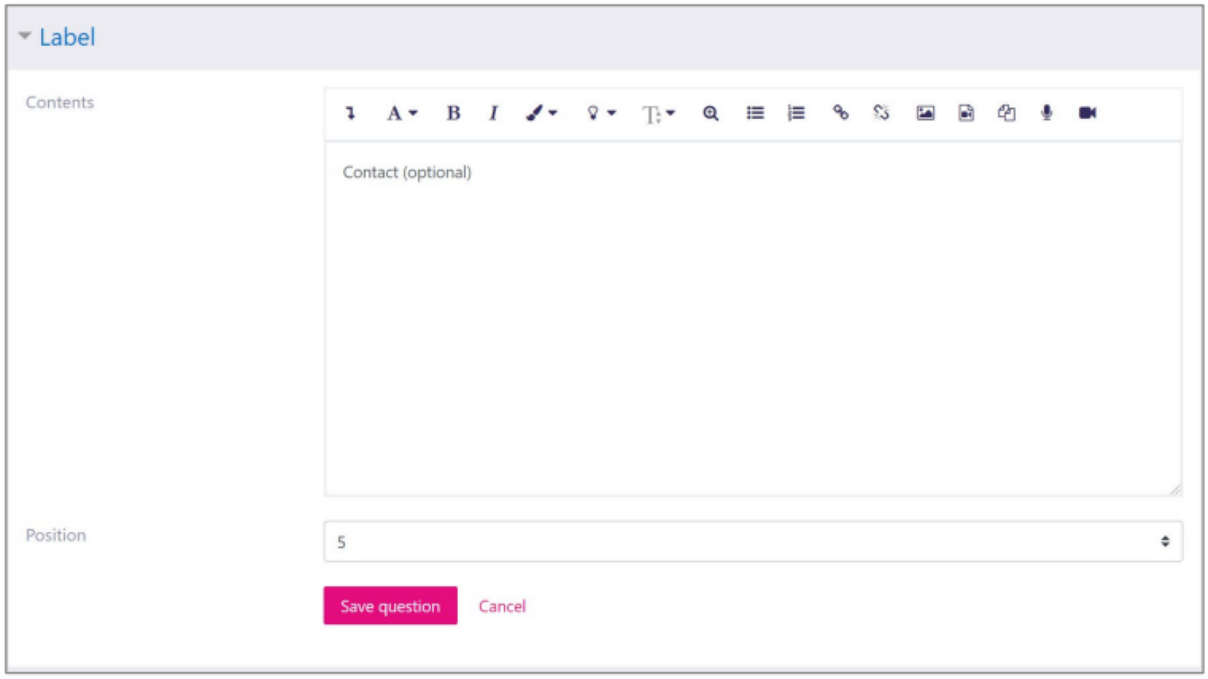
You can also add labels in between your questions. In this way you can highlight or divide your questions into several groups. Let's practice this by adding a label called *Contact (optional)*.

Adding a label

From the drop-down select: **Add question > Label**



Enter the following example values for the page that appears.

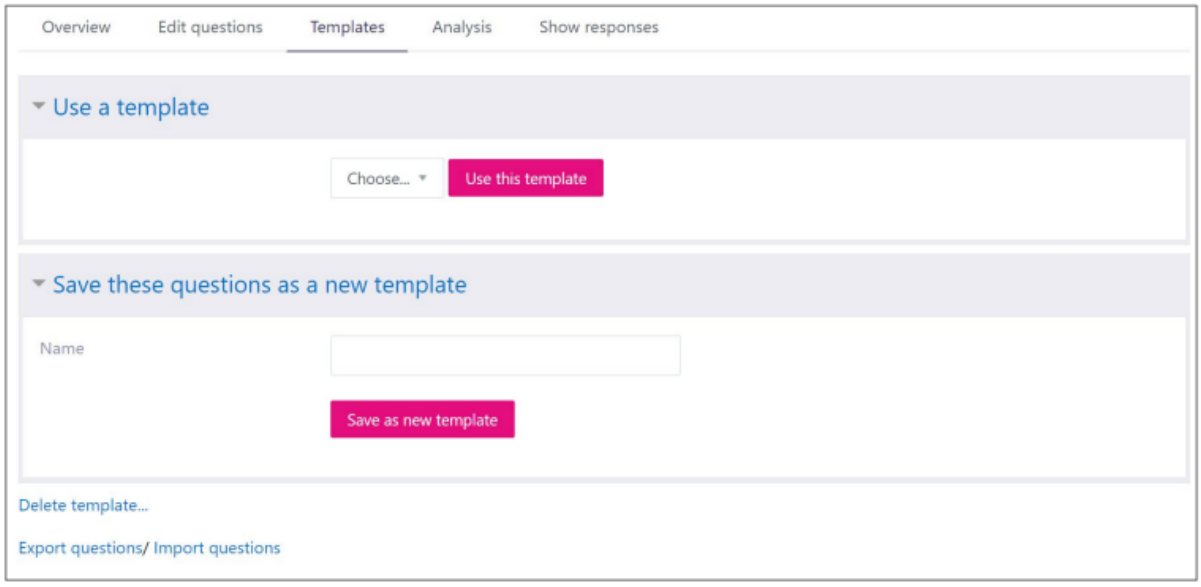


Click on **Save question**. This label is not in the correct position. But we can easily click on a cross-hair symbol and drag it (while keeping down the left mouse button) just in front of the contact fields.

Remark: In addition to labels you can also add page breaks. It is useful if you plan to add several questions and those can be divided into various groups. Then you can add page break after each group.

You have successfully created your first feedback form. Please note that once the feedback has been answered, you as a teacher can see the summary of the answers from the same page as you added questions. You must just click on the tab **Analysis** or **Show Responses**. From the **Analysis** tab you can also export your answers into Excel and do some additional analysis there.

If you want to use the same feedback form in another course, you can export those questions from one course and import back in another one. Of course, before you can do that, the general feedback link needs to be present. Once it is, you go to the tab **Templates**. For exporting you use **Export questions** and for importing **Import questions**.



Remark: This will only export questions. Although you may have some differences which you want to ask in different courses, quite often it is a quicker way to get to a quicker start point, even if you need to tune up your questions a bit.

Summary

You have successfully added a new feedback form to your course to gather feedback from your students. If you need to fix or change some settings, you can edit settings by clicking on the **Edit** button (at the end of the row).

From the same menu you can hide the link (not visible to a student) or delete it (can't be undone). You can also indent (move) the current learning resource to the right/left. If you plan to add a similar type of content, you can first select **Duplicate** and then make modifications to the fresh copy. If you want to change the location of the current item, you can do that by picking up a cross-hair icon from the front of the row and just sliding it up or down.

11. Enhancing Engagement in Moodle

11.1. Gamification

Definition: Incorporating game elements into learning environments.

Key Elements:

Points, Badges and Leaderboards

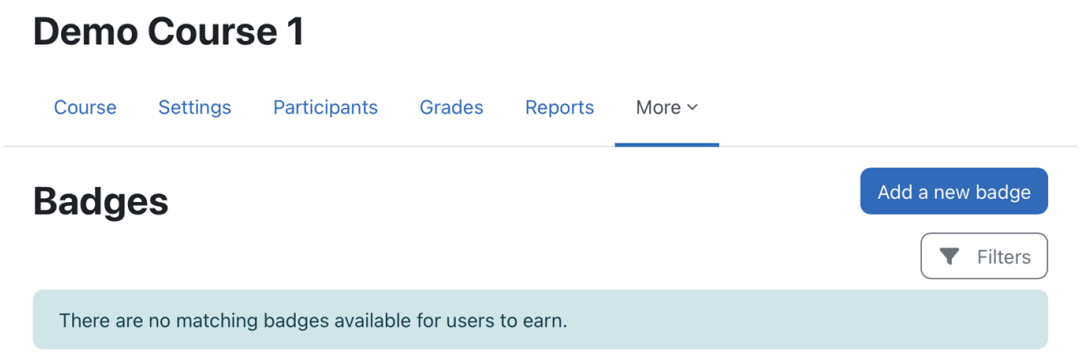
Benefits: Increases motivation, provides instant feedback and enhances user engagement.

Implementing Badges in Moodle

Create custom badges for achievements.

Set criteria for badge issuance.

Encourage progress and mastery.



Creating a Badge

Step-by-Step Instructions:

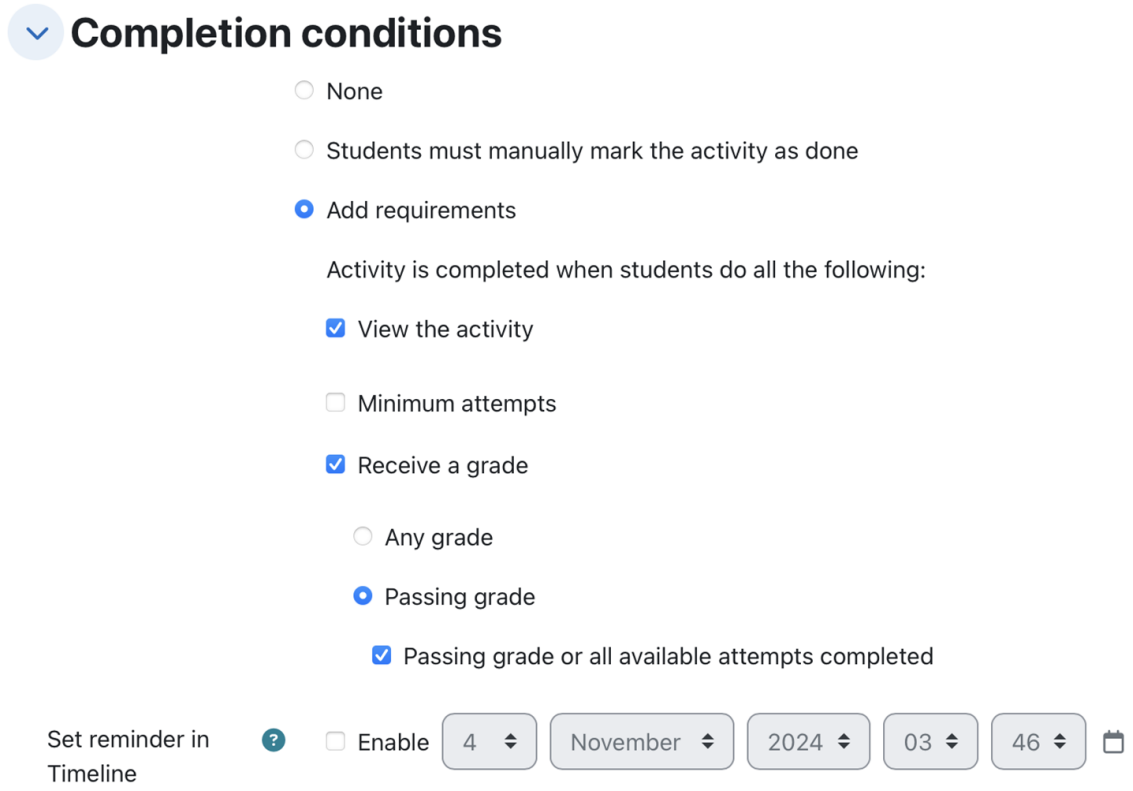
Step 1: Navigate to “Course administration” > “Badges” > “Add a new badge.”

Step 2: Design the badge (name, image, description).

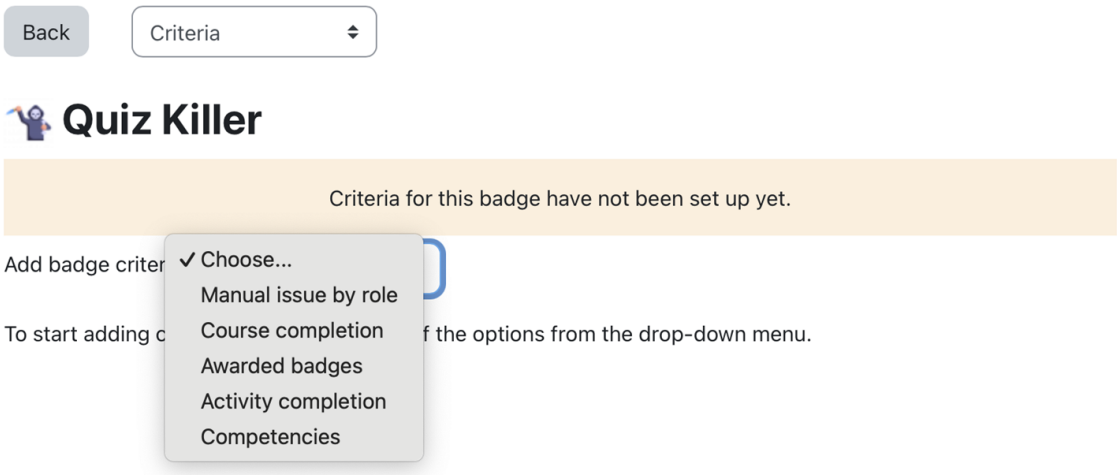
Step 3: Set criteria (e.g., completing a quiz).

Step 4: Enable the badge.

Set up the Final Test properly



Activity Completion



Badge Settings

Badge details

Name: Quiz Killer

Version:

Language: English

Description: Quiz Killer

Current image

Collapse all

Activity completion

Quiz - Final Test

complete by

Enable 4 November 2024

This criterion is complete when...

Description

Save Cancel

Quiz Killer

This badge is currently not available to users. Enable access if you want users to earn this badge.

Enable access

Result – We got a badge!

Preferences / Manage badges / Quiz Killer

Quiz Killer

Download

Quiz Killer

Awarded to Test User

Issued 4 November 2024, 3:50 AM

Issued by DX.SEA Moodle

Course: Demo Course 1

Quiz Killer

Criteria

- The following activity has to be completed:
  "Quiz - Final Test"

More details

11.2. Moodle Analytics

Purpose of Analytics:

Track student engagement.

Identify at-risk students.

Inform teaching strategies.

Types of Analytics: Reports, Logs, Learning analytics models, Accessing Reports and Logs, Navigate to “Course administration” > “Reports.”

Explore different report types:

Activity Completion: Track completion status.

Course Participation: Monitor participation.

Logs: Detailed user activity.

Interpreting Data Analytics

Analyze Engagement:

Time spent on activities.

Frequency of access.

Identify Patterns:

Common challenges.

Popular resources.

Take Action:

Provide support to less active students.

Adjust course content as needed.

Useful Plugins for Engagement

H5P Interactive Content: Create interactive videos, quizzes, presentations.

Attendance Plugin: Track and grade attendance.

Game Plugin: Convert quizzes into games like hangman or crossword.

11.3. Mobile Learning Adaptation

The official Moodle app will only work with Moodle sites that have been setup to allow it.

NOTE: This official Moodle app will ONLY work with Moodle sites that have been set up to allow it. Please talk to your Moodle administrator if you have any problems connecting.

If your Moodle site has been configured correctly, you can use this app to:

• browse the content of your courses, even when offline

• receive instant notifications of messages and other events

• quickly find and contact other people in your courses

• upload images, audio, videos and other files from your mobile device

• view your course grades

• and more!

Why Mobile Learning?

Accessibility anytime, anywhere.

Supports diverse learning environments.

Increases flexibility for students.

Moodle Mobile App Features

Offline access to materials.

Push notifications for updates.

User-friendly mobile interface.

The Moodle Mobile App's ability to provide offline access is one of its most notable features. Students can download course resources to their mobile devices for offline viewing, including

documents, videos, and quizzes. This feature is perfect for people who frequently travel or have patchy internet access because it enables learners to continue learning even in settings with little to no internet connectivity

Exploring the Moodle Mobile App

Step-by-Step Instructions:

Step 1: Download the app from the App Store or Google Play.

Step 2: Open the app and enter your Moodle site URL.

Step 3: Log in and navigate your course.

11.4. Moodle Plugins

What are Plugins?

Add-ons that extend Moodle's functionality.

Types of Plugins:

Activities, Blocks, Themes, Reports, etc.

Benefits:

Customize and enhance the learning experience.

Popular Plugins to Enhance Courses

H5P Interactive Content: Create interactive content like quizzes, presentations.

Attendance Plugin: Track and grade attendance.

Completion Progress Block: Visual progress bar for students.

Installing and Configuring a Plugin

Note: Requires admin rights or conduct as a demonstration.

Step-by-Step Instructions:

Step 1: Access "Site administration" > "Plugins" > "Install plugins."

Step 2: Search for a plugin (e.g., H5P).

Step 3: Install and configure plugin settings.

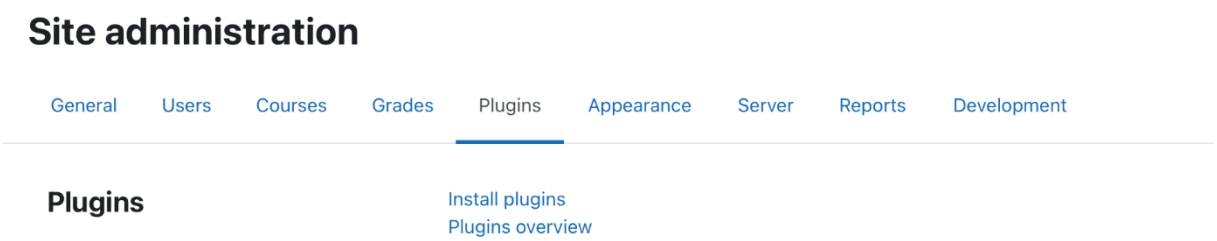
Best Practices for Using Plugins

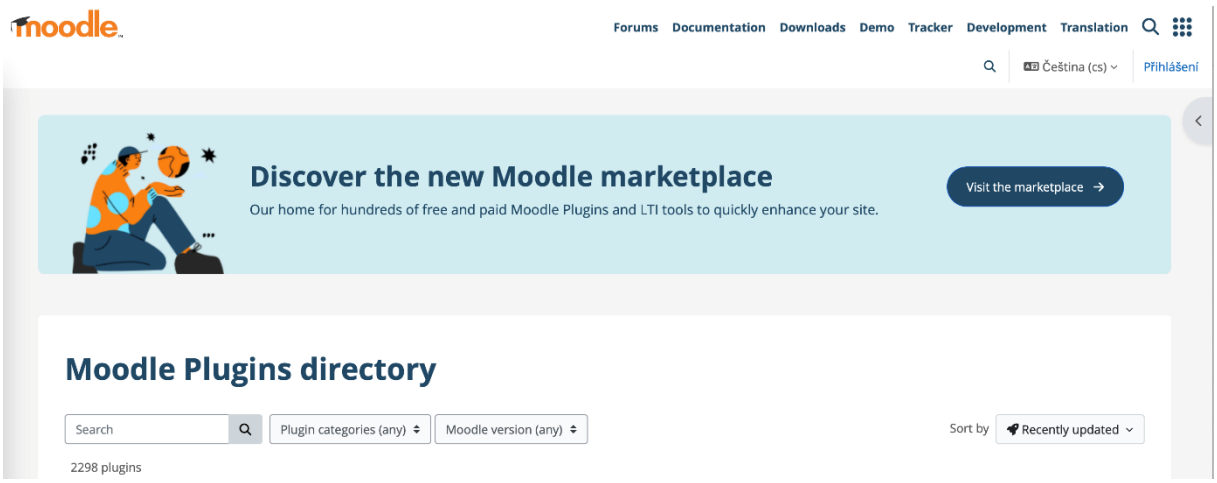
Compatibility: Ensure the plugin is compatible with your Moodle version.

Reliability: Check reviews and ratings.

Maintenance: Regularly update plugins, monitor for security updates.

Plugins in Moodle





11.5. Designing User-friendly LMS Interface (Accessibility Rules and Recommendations)

Depends on which theme you're using:

Boost (default)

Boost Union (Free)

Adaptable (Free)

Aardwark (Free)

eLearning Maker (Premium)

Recommendation: make sure your selected 3rd party theme has support for the latest Moodle and the maintainer of the theme updates it on a regular basis.

Dashboard look and feel can be customized with different blocks.

NB! You can install multiple themes and allow teachers on their course level to choose which theme they prefer to use.

11.6. Manage report on duration spent by each student inside a course

By default Moodle tracks clicks about how many times a item on course has been opened and by how many users:

Course frontpage > Reports tab > Activity report.

For tracking time spent on course: plugin block Course dedication.

This block allows to see the estimated dedication time to a Moodle course by the participants of the course.

How dedication time is estimated?

Time is estimated based on the concepts of Session and Session duration applied to Moodle's log entries:

Click: every time that a user access to a page in Moodle a log entry is stored.

Session: set of two or more consecutive clicks in which the elapsed time between every pair of consecutive clicks does not overcome an established maximum time.

Session duration: elapsed time between the first and the last click of the session.

11.7. Notification settings on class activities: Assign, Deadline, Warning

Default Moodle lacks proper notification functionality about upcoming deadlines.

For enabling activity related notifications: plugin Event Reminders

Features:

Ability to send reminders after event completed for overdue students.

Ability to enable/disable and schedule reminders per activity.

Explicitly reminder enables: By default no reminders will be sent unless teachers enable them in course level.

Reminder email messages when calendar event created/changed/removed.

Prevent sending more email reminders once a student has completed the activity.

New in Moodle 4.5

Learners will be notified (via their preferred notification format) at the following stages of an assignment:

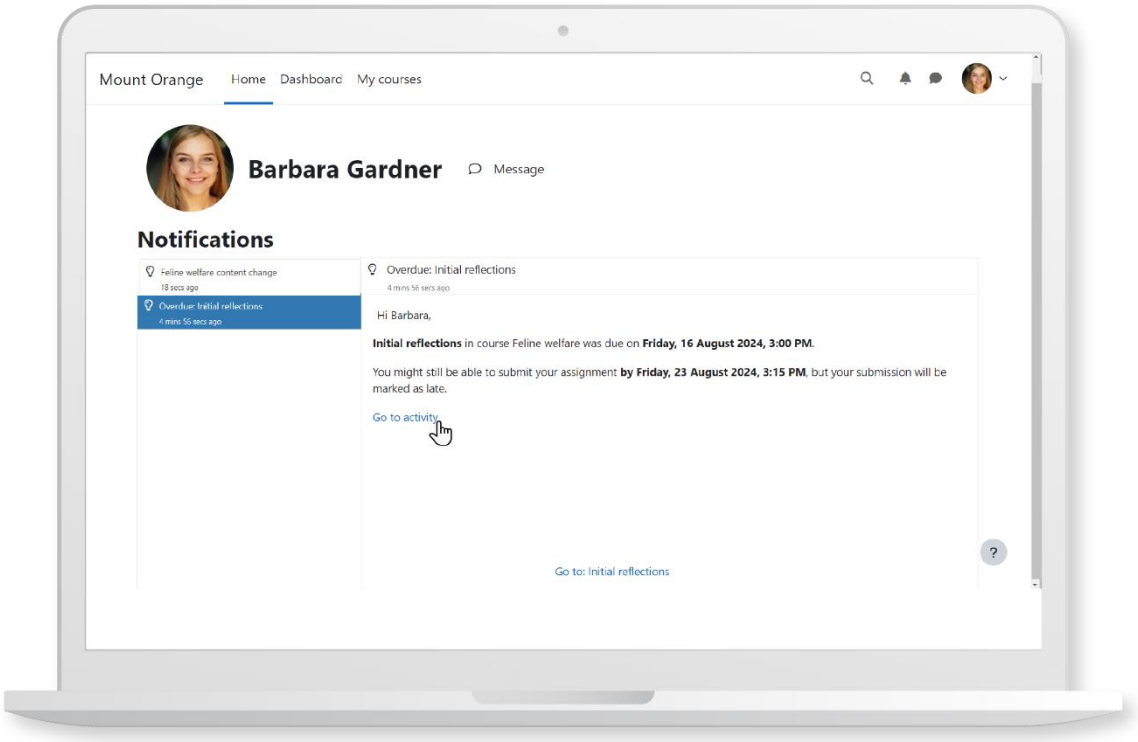
When the assignment is due in 7 days;

When the assignment is due in 48 days;

When the assignment is overdue.

New in Moodle 4.5

Learners will be notified (via their preferred notification format) at the following stages of an assignment:



11.8. User registration (Manual Vs. Bulk Vs. External database enrollment synchronization) and user cohort management in Moodle LMS

Manual registration by site administrator is most time consuming and labor intenstive

Bulk manual registration by site administrator enables quickly to create a new account for large amount of users.

Bulk user creation requires making a list of users following a specific format and saving as csv file.

External database enrollment synchronization – no human involment required.

Microsoft 365 plugin set - includes features such as user matching between Azure Active Directory and Moodle.

11.9. Creating Adaptive Assessments

Create a Question Bank: Organize your questions into categories (e.g., easy, medium, hard).

Adaptive Mode: Enable adaptive mode when creating the quiz. This mode allows learners to immediately retry a question (with or without penalty) and provides instant feedback that helps them adjust their learning.

Restrict Access for Progressive Learning

Moodle's Restrict Access feature allows you to show or hide activities, quizzes, or questions based on learner performance in previous activities. This enables an adaptive learning path.

How-to:

Multiple Quizzes or Activities: For example, create a basic quiz for beginner learners, a medium-level quiz, and an advanced quiz.

Restrict Access Conditions: When editing each quiz, use the Restrict Access option to set conditions based on the score or completion of a previous quiz. For example:

Learners who score < 59% on Quiz 1 get access to an easier Quiz 2.

Learners who score > 60% on Quiz 1 are presented with a more challenging Quiz 2.

The Lesson Module in Moodle is ideal for designing adaptive assessments. It allows you to create a series of pages with content and questions where the learner's choice determines the next step.

How-to:

Design a Lesson Structure: Divide your lesson into sections with branching questions. Based on how learners answer, you can direct them to different content pages (e.g., review materials if they perform poorly, or move them forward if they succeed).

2. Add Questions with Branching: Use question pages to assess learner understanding. For example, if the learner answers correctly, they move to the next module. If they answer incorrectly, they can be redirected to a page that reviews the topic or gives extra practice.

Set Custom Navigation: You can create custom paths where learners will go based on their quiz results or responses, thus creating an individualized learning journey.

Use Question Behavior Settings (Immediate Feedback, Deferred Feedback)

In Moodle quizzes, you can control how feedback is provided based on performance:

Immediate Feedback: Learners can see feedback right away and adjust their understanding on the go.

Deferred Feedback: Delays feedback until after submission, allowing for a more holistic adaptive strategy at the end of the quiz.

11.10. Integrating AI-Based Tools for Feedback

Tools like **Grammarly**, **Turnitin**, and AI writing assistants (like **OpenAI's GPT models**) can provide immediate feedback on student writing by analyzing grammar, style, and plagiarism. These tools can be integrated into Moodle in the following ways:

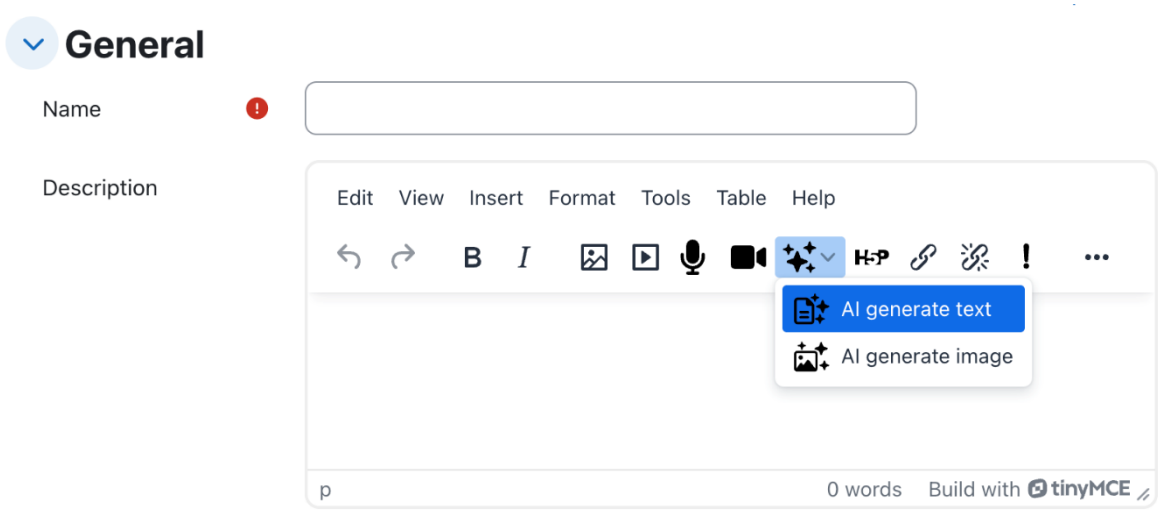
Grammarly: Although Grammarly does not offer direct integration with Moodle, students can use Grammarly plugins in their browser to check their writing as they complete Moodle assignments.

Turnitin: Turnitin offers plagiarism detection and feedback on writing. It integrates seamlessly with Moodle as a plugin, allowing for direct submission of assignments and providing detailed feedback, including originality reports and AI-generated comments on writing structure and mechanics.

OpenAI GPT-3/4: Integrate AI-powered feedback by using GPT-based tools to offer suggestions for improving students' essays, understanding content, or even auto-generating feedback on submissions.

Moodle LMS 4.5 has a new AI subsystem designed to integrate easily with various AI providers.

Moodle LMS will initially support the **OpenAI** API. This API will work with open-source models such as **Ollama**, **LiteLLM**, and **LocalAI**. It will also support services like Groq, OpenAI itself, and Azure. Additional AI model support will be added in future releases.



11.11. Data-Driven Decision-Making

Enable and Configure Moodle Learning Analytics

Moodle has built-in **Learning Analytics** tools that use machine learning models and predictive analytics to monitor student engagement and success. These analytics can provide insights into how well learners are achieving course objectives.

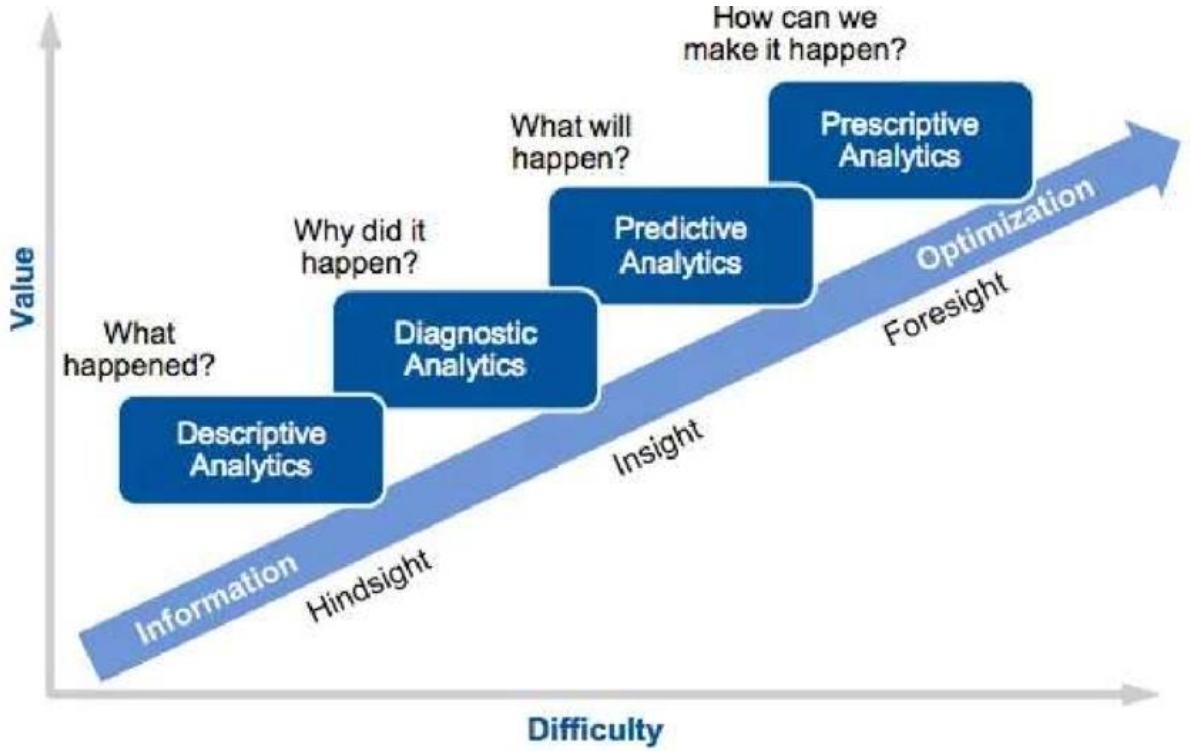
How-To:

Access Site Administration: Go to **Site administration > Analytics > Analytics settings** and enable **Analytics**.

Set Up Learning Analytics Models: Moodle comes with default models (e.g., predicting student success or identifying students at risk). These models analyze activity completion, grades, and engagement metrics to give insights into learning outcomes.

Configure Custom Targets: Customize the learning models based on specific course objectives. For example, you can track the completion of specific quizzes or assignments that directly map to learning outcomes.

Gartner Analytic Ascendancy Model from 2012 (Elliott 2013)



Using the Data:

Assess Learning Milestones: Compare the number of students who completed each activity with the intended learning outcomes. If certain activities are aligned with specific outcomes, completion rates can give you a clear view of progress.

Identify Gaps: If a significant number of students are not completing key tasks, it may indicate that the activity is too challenging or not engaging enough, prompting a revision to better align with learning outcomes.

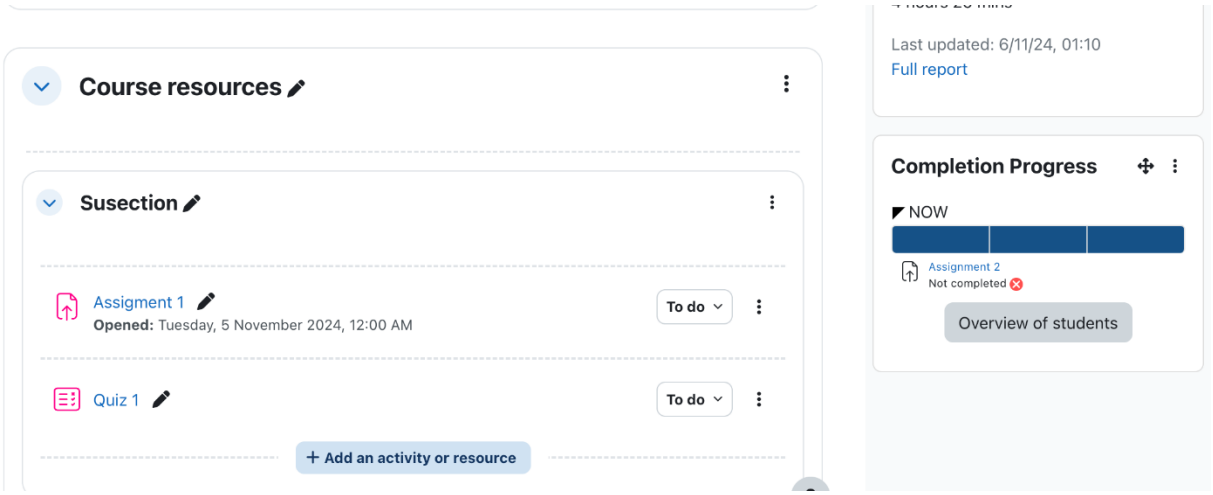
Plugin block Completion Progress

1Enable Completion tracking on course (Course > Settings > Completion tracking)

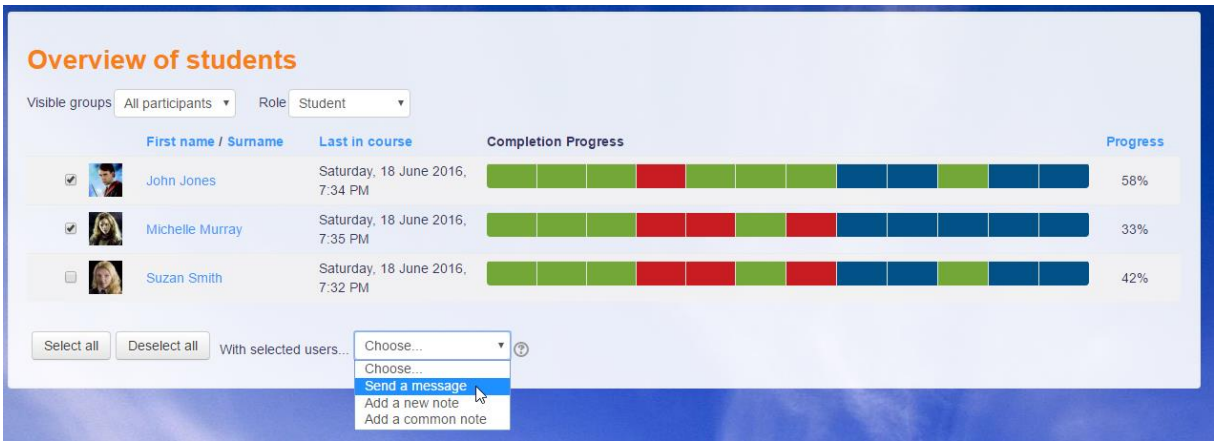
2Open your activity (quiz, assignment):

Set up Completion conditions

Set up Passing grade (optional)



Plugin block Completion Progress. Teacher overview of students progress:



Source: https://moodle.org/plugins/block_completion_progress

Utilize Learning Analytics Models (Insights and Predictions)

Moodle provides insights and predictive analytics that automatically analyze student behavior and alert instructors to potential issues related to learning outcomes.

How-To:

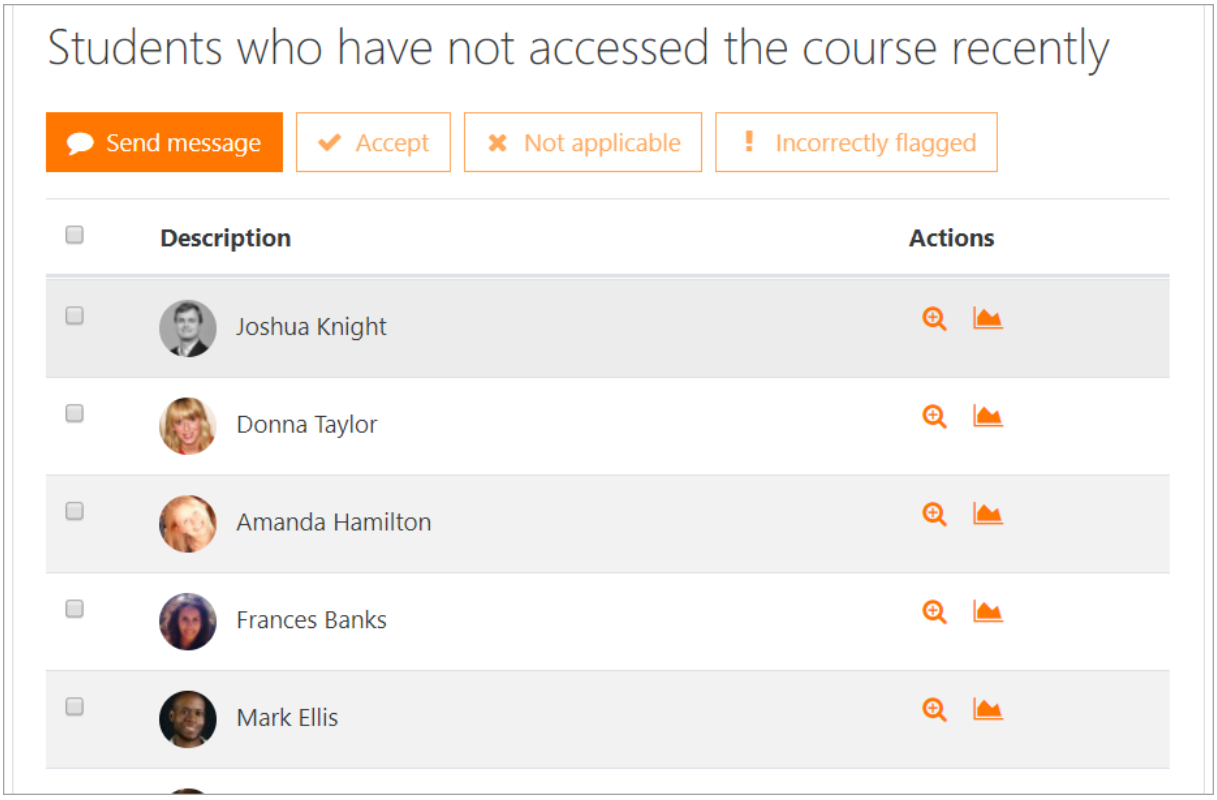
Set Up Analytics Models: In Site administration > Analytics > Analytics models, enable models that predict student success or risk of failure. You can configure these models to track the achievement of learning outcomes.

View Predictions and Insights: These models provide insights into student activity, such as:

Students who are at risk of failing to achieve a learning outcome.

Predictions of future performance based on current engagement and assessment results.

Moodle Learning Analytics report example



Source: https://moodle.com/news/moodle-learning-analytics-increase-student-engagement/

External Analytics Tools (IntelliBoard, Power BI, Tableau)

If Moodle's built-in analytics aren't sufficient for your needs, you can integrate external tools like IntelliBoard, Power BI, or Tableau to generate more sophisticated reports on learning outcomes.

IntelliBoard: Provides detailed analytics dashboards for Moodle, helping educators measure learner performance, engagement, and achievement of learning outcomes.

Power BI / Tableau: External tools like **Power BI** and **Tableau** can be integrated with Moodle data to create custom visualizations and reports. You can export Moodle data and use these tools to analyze trends in learning outcomes across multiple courses.

12. Conclusion

This course has provided an overview about Digital Infrastructures, Learning Management Systems, Instructional Design Models and Moodle E-support general requirements. You have received an understanding of how e-learning can be utilized as a supportive learning to current contact hours. You have learned that e-supported learning is not only about sharing learning materials, rather it also includes the learning process, whereby students can do self-assessments and get a continuous feedback. As seen above, creating an e-course takes more time, because in that case we are creating a virtual classroom where the subject can be effectively studied/learned fully (100%) within an e-learning environment.

This course has given an overview of how to use Moodle e-learning environment to create e-supported learning for your subject. This e-course can support the Moodle face-to-face course provided by trainers to the respective academic staff, although it is built up in a way, that it can be used for learning (or recalling) independently as well.