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COMPETENCE-BASED LEARNING COURSE HANDBOOK

Competence-based learning is an educational approach that focuses on the acquisition and demonstration of specific competencies or skills rather than simply accumulating knowledge or completing coursework. In competence-based learning, learners are expected to achieve predefined learning outcomes or competencies that are directly relevant to their future roles or professions. These competencies typically encompass a combination of knowledge, skills, attitudes, and behaviours that learners are expected to master to effectively perform tasks, solve problems, and succeed in their chosen fields.

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WHY COMPETENCE-BASED LEARNING?

PARTNERS
LOGO



Competence-based evaluations bring consistency and clarity, as well as validity, to the universe of learning. With this approach, the assessment of learning becomes more valuable and powerful because it is employed as a pedagogical tool and not simply a judgment. It documents how well you know something and also how appropriately you can employ that knowledge, skill, ability, or behaviour. So, when students are asked to demonstrate what knowledge they have gained from a particular experience, they should be asked to also apply that learning, reflect on the experience, and tickle out the value of that experience for them as part of the demonstration.

CBE Mastery Framework



Structure	Culture	Teaching	Learning
Assessment System	Institutional Mission	Teachers as Facilitators/ Coaches	Student Ownership of Learning
Seat Time	Knowledgeable Staff	Personalized Learning	Student Voice
Learning Management System	Culture of Innovation	Tools/Resources for Teaching	Lead Learner
Scheduling	Engaged Parents/Families	Content Expertise	Learning Anytime, Anywhere
Standards / Defined competencies	Engaged Stakeholders	Curriculum Design	
Professional Development	Effective Communications	Assessment Design and Use	
Physical Infrastructure	Culture of Relevance		

Source: REL Southeast, Measuring Success through Competency-Based Learning Alliance

THE BREAKDOWN OF A COMPETENCE-BASED LEARNING COURSE DESIGN



Know your students' background

Pre-assess* your students knowledge as an invitation to the incoming learning. Pique your students interest with a few question while providing alignment with the key competences and skills that you find necessary for them to learn in your curricular unit. The best preassessments are often short and to the point. Hockett et al. (2014)

**offer some guidance in this regard:

- **Clarify the test purpose.** Carefully consider why you are pre-assessing, what information you intend to uncover, and what methods you will use to gather that information. Emphasize that the preassessment data are intended to help faculty better understand how to address students' needs, connect to their interests, and excite them about the forthcoming topics. Assure students that the results of these assessments will not be used for grading purposes.
- **Determine how you will use the information:** Then, use the results of preassessments to adapt your teaching practices to enhance student learning.
- **Use preassessments judiciously and efficiently:** Preassessments are not necessary for every new instructional unit. Use them only when they provide information you do not already have or cannot anticipate and when they prompt student interest or thinking about the topic to be learned.

*Gyll, S. P., & Hayes, H. (2021). Learning and individual differences in skilled competency-based performance: Using a course planning and learning tool as an indicator for student success. *The Journal of Competency-Based Education*, 6(3), e1259. <https://doi.org/10.1002/cbe2.1259>;

**Hockett, J. A., & Doubet, K. J. (2014). Turning on the lights: What pre-assessments can do. *Educational Leadership*, 2013, 50-54.



Design learning paths that serve each student's needs

Competence-based learning allows flexibility and customization in learning paths, enabling students to progress at their own pace and focus on areas where they need improvement. Students may have opportunities to choose from a variety of learning activities, assessments, or pathways based on their individual learning needs and preferences.

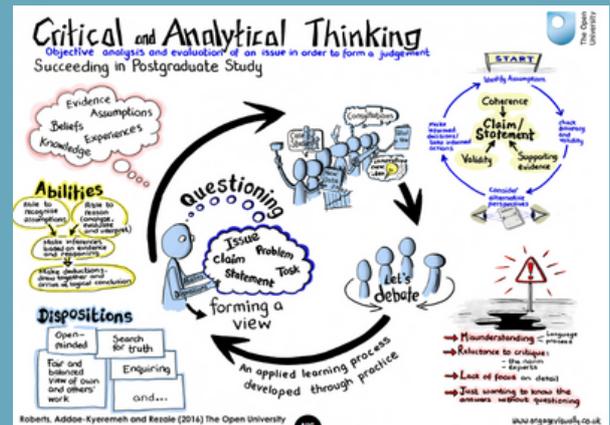
According to students' learning styles, background knowledge, and preferred ways of learning, as a teacher, you may provide different learning methodologies using:

- Problem-based learning;
- Project Based learning;
- Research-based learning;
- Service-based learning;
- Game-based learning;
- ...

Within all methodologies, the defined learning paths must be built taking into account the possibility of going back and forward in knowledge acquaintance.

With this procedure you will promote active engagement, personalized learning experiences, and a deeper understanding of the contents you want your students to master, empowering them to take ownership of their learning journey.

The design paths should also contemplate ways of capturing students' intrinsic motivation, their active engagement, providing immediate feedback and monitorization, being challenging, and flexible, and encouraging reflection, revision, and refinement of understanding over time.

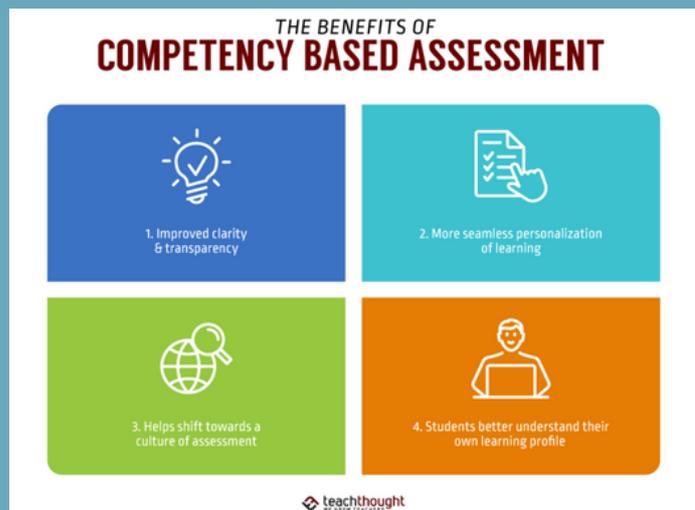


Iteratively practising and developing experiences and critical-thinking

Schedule regular follow-up meetings where students have the opportunity to discuss with each other their, at-the-moment, findings.

Define the monitoring calendar and schedule the tasks to be presented. This scheduling must be based on the availability of all students and the teacher. It implies, and suppose a commitment to attendance and preparedness for presenting work, with the opportunity for ongoing dialogue to address any uncertainties.

It is important to maintain availability while balancing the autonomy that students must acquire during this learning methodology.



Assessment Competence-Based Learning

Developing a map to assess competence-based learning involves identifying the key competencies or learning outcomes that students are expected to achieve and designing assessment strategies aligned with those competencies. A framework for creating a competence-based learning assessment map may include:

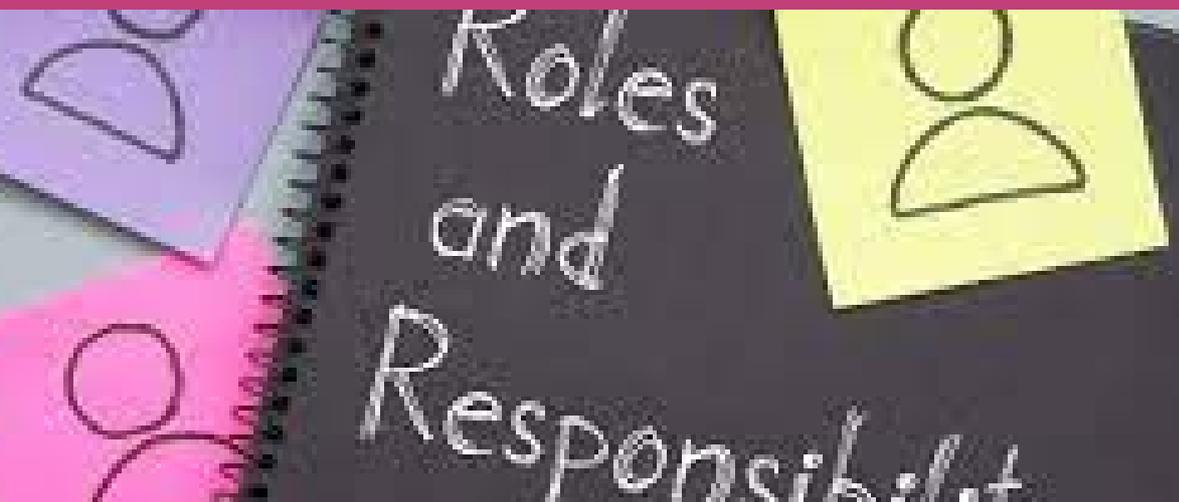
- **Identification of the specific competencies or learning outcomes** that students are expected to demonstrate proficiency in by the end of the learning experience. These competencies should be clearly defined, measurable, and directly relevant to the learning objectives and desired outcomes.
- Definition of assessment criteria in a clear and transparent form for each competence. These criteria should outline the specific knowledge, skills, behaviours, or performance standards that students need to meet to demonstrate their mastery.
- **Choose appropriate assessment methods and tools** that align with the nature of the competencies being assessed and the learning context. Assessment methods may include performance assessments, portfolios, projects, simulations, case studies, written exams, presentations, observations, or self-assessments.
- **Diversify assessment formats** incorporating a variety of assessment formats and tasks to capture different aspects of students' competencies and accommodate diverse learning styles and preferences. For example, combine formative and summative assessments, include both individual and collaborative tasks, and offer opportunities for self-assessment and peer feedback.

- **Align assessments** with learning activities, experiences, and resources provided to students throughout their learning journey. Assessments should reflect the authentic tasks, challenges, and contexts that students are likely to encounter in real-world professions.
- **Provide clear and constructive feedback** mechanisms to help students understand their strengths, areas for improvement, and progress toward achieving the desired competences. Feedback should be timely, specific, and actionable, guiding students' ongoing learning and development.
- **Monitor and evaluate assessment data** in a continuous mode to track students' progress, identify trends or patterns, and inform instructional decision-making. Use assessment data to identify areas where additional support or intervention may be needed and to guide adjustments to teaching and learning strategies.
- **Promote reflection and growth** encouraging students to reflect on their learning experiences, assess their progress, and set goals for further development. Provide opportunities for students to engage in metacognitive activities, self-assessment, and goal setting to promote ongoing growth and improvement.



TEACHER ROLES AND RESPONSABILITIES

- Based on the learning paths agreed, check whether individual and group exploration requires further advice;
- Encourage autonomous search;
- Explain, and remember that repetition is always needed at least in the beginning, what students should look for and research to achieve their involvement and autonomous learning;
- Question progress or lack thereof, encouraging persistence;
- Congratulate advances whether small or large.



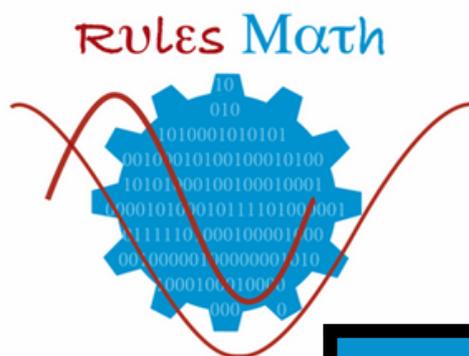
ASSESSMENT EXAMPLE RULES-MATH PROJECT

The main objective of the RULES_MATH project was to develop assessment standards for a competencies-based teaching-learning system for mathematics in engineering education.

The aims of the project can be summarize as follows:

- (1) To develop a collaborative, comprehensive, and accessible competencies-based assessment model for mathematics in an engineering context.
- (2) To elaborate and collect the resources and materials needed to devise competencies-based assessment courses.
- (3) To disseminate the model to European HEIs through the partner networks and also promote the dissemination all over Europe.

To have access to all materials developed and papers published please go to <https://rulesmath.usal.es/>



**New Rules for Assessing
Mathematical Competencies**

LET'S WORK TOGETHER



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Project Coordinator



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