iLab Manual

Future-proof your classroom – teaching skills 2030

Module 3

Designing on-campus training

University of Aveiro, Portugal

Future-proof your classroom – teaching skills 2030

Welcome to the course Teaching2030!

Technology rapidly changes the way we think, live, learn and lead. Education plays an essential role in this transformation process. Teachers and trainers have to be prepared for new challenges and learning environments in order to guide future generations the best way possible. Based on these considerations, the blended-learning course "Future-proof your classroom – teaching skills 2030", Teaching2030 for short, addresses teachers, tutors and trainers in higher education institutions providing them with instructional competencies and skills over eight modules. The course comprises a web-based training course (cBook) and an on-site learning space (iLab) and can be accessed without limitations and is free of charge. It is funded by the Erasmus+ Austrian National Agency under Key Action 2 Strategic Partnerships.

Lucia and Marko will guide you through the cBook and iLab

The didactical concept of the entire blended-learning course follows the principles of **storytelling**. Storytelling is quite common in company training but has so far not been commonly used in educational courses. It is, however, an essential part of Teaching2030. Throughout the modules, Lucia and Marko, two teachers at a higher education institution, who will guide you through your learning experiences, helping you deal with the new trends and difficulties you might experience in your future teaching, will accompany you. They tell stories about their recent successes with their students and their reservations about giving new approaches a try, they provide each other with teaching advice and support, and, last but not least, they help future educators manage the challenges they may face. They are a constant presence both in the cBook and in the iLab, which are closely interlinked.

The **cBook (computerBook)** is a web-based training environment that hosts the eight modules of the course, each of which comprises five chapters organised around key topics. The cBook offers you a diverse range of learning material, such as information (texts, hot spots, didactic sequences), interactive exercises (drag and drop, multiple choice, memory, surveys, word clouds), reflection tasks, videos and additional materials and links. Each cBook module contains five major tasks entitled "iLab", indicating that these tasks are better suited for use within the iLab. In addition, the cBook provides reflection tasks, called "iThink", for discussion in the iLab. Nevertheless, you can also work with the cBook as a stand-alone MOOC.

The *iLab (innovationLab*), as part of the blended-learning course, is an on-site, open, self-directed learning space, estimated to require two days per module. It can be organized as a training environment under the supervision of a Teaching2030-developer, or without supervision, as a self-directed learning environment for teachers who would like to widen and strengthen their teaching approaches and skills. The iLab is designed to be used flexibly, as it provides additional exercises, tools, materials and links, but it is recommended that the cBook be completed first in order to build a solid basis for the iLab. Each iLab module offers a guide explaining the didactical approach of the entire course and a glossary containing the central items and terms used by the development team.

Give Teaching2030 a try and have fun!

Your development team:

CREATE 21st century GmbH

Eszterházy Károly Egyetem Eger

Fachhochschule Burgenland GmbH

Faculty of Tourism & Hospitality Management

Universidade de Aveiro

Universita degli Studi di Perugia

Universitat de Valencia

University St Kliment Ohridski Bitola

Univerza v Mariboru

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What to expect

1. Engaging in the on-campus experience

Higher education today is characterised by growing social and cultural diversity, not least of all among its students, who come from increasingly diverse ethnic, linguistic, social, and educational backgrounds, are mostly working part-time, and have very different expectations and motivations. More than ever, therefore, it is vital that teachers take into account the background, needs and experiences of students when they want on-campus teaching and learning to be effective.

1.1. Good teaching and great teachers

Story

I have noticed that the students' attendance in classes tends to decrease throughout the semester. So, this year I asked them what makes them come or not come to classes and most of them answered that they don't miss classes when they have good teaching. For them, this meant being able to work collaboratively on real problems, having control over their own learning, feeling they are constructing their own knowledge, and having a say what they are learning and how they are learning.

So, in short, teachers should aim to:

- promote collaborative learning environments;
- organise students' learning around real problems;
- foster self-regulated learning;
- provide students with flexibility and choice;
- and use digital technologies to support these goals and to provide a more relaxed and fun learning environment.

In fact, good teaching can be loosely defined as the process of nurturing everyone's needs, prior knowledge and feelings, and acting so that students can build their own knowledge and develop both soft and technical competences. However, what makes a great teacher? Terronez (2017) suggests that:

- great teachers trust students and vice-versa;

- students often convey their feelings in subtle ways and great teachers are able to read them, help them when they're stuck and push them to succeed;

- many students value teachers that are calm and don't get overwhelmed easily;

- great teachers are humble before their students and take risks;

- students like their teachers to be open to learning;

- great teachers connect learning to real life.

It is well-known that Higher Education requires radical change in order to confront the challenges posed by the rapidly changing social and economic contexts in which it functions. Greater curricular flexibility, more interdisciplinarity, the expansion of delivery modes, a wider range of social and communication skills, are some of the priorities identified. In Tourism education, for example, it has been argued that radical transformations are needed in the face of economic, social and technological changes (Hsu, 2018), involving the inclusion of skills in areas such as entrepreneurship, innovation, crisis management, data analytics, and communication in updated tourism *curricula*, and the introduction of transformative learning practices (Walker & Ngara Manyamba, 2019).

1.2. Connecting learning to real life

But what can teachers do to contribute to this reality? Azul Terronez's TEDex Talk (2017) suggests that one alternative is to take on the students' perspective and connect learning to real life. Joe Ruhl (2015) insists that classrooms should be characterised as places where collaboration, communication, critical thinking and creativity are encouraged and developed in order to inspire students.

In this Chapter, we reflect on some of the aspects that characterise good teaching and a great teacher. Some of the key elements to keep in mind are: i) teaching should be grounded in real life scenarios, i.e. going beyond theory; ii) teaching should be student-centred and promote self-regulated learning, collaboration and two-way communication in flexible environments.

iThink – Ode to a Great Teacher

The "Ode to a Great Teacher" presented in the cBook in Chapter 1 was uploaded to Worditout (a wordcloud creator) to identify which characteristics would stand out. The results are presented in this image.

Think of your own teaching experience and reflect on the actions that stand out from the image and on what characteristics you think best qualify a great teacher.

Task 1: Write a tweet (i.e. 140-character text), in which you use 5 of the most relevant concepts which emerge from the wordcloud.

Task 2: Write a short report of your conclusions (1-page long) and don't forget to present real examples of teaching/learning experiences. The following questions may help you with this:

- What did you learn?
- Where?
- Who with?
- What with (resources)?
- What for (purpose)?

Activity: Producing a video

Produce a video demonstrating a real example of a teaching/learning experience you have had in which you highlight the factors which made it successful.

Use the following guidelines to help you:

- clearly indicate the learning purpose, the learning process, and the learning outcome;
- mention the setting and the people involved (peers, students, family, community…);
- describe or include the materials that were used.

You may include:

- interviews (opinions of interviewees and of other participants in the experience);

- digital artefacts (audio, text, images, animations…);

- personal accounts, digital stories (e.g. including photos, along with narration, subtitles, background music, scenarios…), etc.

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2. Promoting skills-based learning

Many authors (e.g. Winter et al., 2013) have highlighted the fact that, in skills-based learning, learning content is adapted to the learner's needs. Competencies and skills that were already developed do not have to be learnt again and new knowledge can be built on what the learner already knows. Students can greatly benefit from skills-based learning, especially when it is grounded in stimulating learning environments with real-life examples and case studies. In this scenario, the teacher's role is to guide and provide appropriate feedback when needed. In this Chapter, we discuss how to promote skills-based learning, integrating the development of soft and hard skills.

2.1. Real-life experiences for learning

Students have to experience for themselves how they can use theory for practical work. Clarke (2018) point out how human capital (skills, competencies, work experience), together with social capital (networks, social class, university ranking) and individual behaviours (career self-management, career-building skills), directly influence graduates' employability. Given the skills-based and experience-based profile expected of new and employable graduates by the labour market, students need to present flexibility and adaptability, not only in practical tasks, but also in social interaction.

Avil Beckford, from Forbes, and the World Economic Forum identify several core competencies that students need to develop if they are to address the complex challenges they will face in future professional contexts. Let's see what these are!

Table 1 Key-skills for the 21st-century workforce

Skill	Learning Outcome
Communication	Students should be able to contextualize and convey information, clearly, effectively and persuasively, using appropriate visual and written means.
Critical Thinking	Students should be able to identify, analyse and assess a problem and come up with appropriate and grounded solutions.
Creativity	Students should be able to identify, evaluate, select and present effectively innovative solutions to a given problem.
Collaboration	Students should be able to work together in a team towards a common goal.

Source: adapted from National Education Association (2010)

2.2. Using case studies

One of the methods applied when trying to develop and enhance these skills is the case study approach, especially when the cases relate to real life experiences. When following a case study approach, students also develop critical thinking while they discuss and test solutions to potential real life work-related issues (Stone et al., 2017). In the controlled environment of the classroom, where theory can be identified and tested, new ideas can be stimulated, and students can be challenged and creative, an active and spontaneous learning process can be developed which is beneficial to all.

If you choose to work with case studies and projects, you will have to:
- find relevant cases/ideas for projects (define a real or a realistic scenario);
- define their elements and purpose (focus on the case/project);
- provide tools and materials for working on them (resources and materials);
- encourage students to interact with other students and external stakeholders (interaction with students and other stakeholders);
- encourage students to find solutions and communicate them (present solutions).

iThink: Promoting skills-based learning

Think of the use of cases in your course and structure a layout for such an approach (1-page long), addressing the following points:
- criteria for choosing an inspiring case in your specific field;
- which materials, resources and tools to use;
- how to integrate communication with relevant stakeholders;
- how to enhance effective group work;
- how to coach students in the process of finding creative and robust solutions;
- how to help them present and communicate results;
- how to stimulate reflection and self-assessment.

Activity: Your role in case-based learning

Consider the **Alqueva Dark Sky** case, and prepare a case-based learning session:

1. How can you capture the students' attention?
2. Suggest steps students should go through to:
   - collect relevant data from different sources;
   - Interact with relevant stakeholders and experts;
   - work effectively in a group;
   - analyse data critically;
   - integrate results to find creative solutions;
   - present results to diverse publics.
3. Reflect on your role (see Module 1).
4. Highlight the main steps and approaches you suggest for the case-based learning session and identify the main challenges you expect to face.

Exercise: Designing a case-study activity

Considering the characteristics and attitudes that distinguish a great teacher (Chapter 1), and the requirements of skills-based learning and the case-study approach, design an activity (1-page long), based on a real-life situation: Use the following steps as a guide:

- Identify the theme;
- Define the learning outcomes;
- Select the materials, resources and tools that will be used;
- Describe how you will:
  - involve input from relevant stakeholders;
  - enhance effective group work;
  - coach students in the process of finding creative and robust solutions;
  - help them present and communicate results;
  - stimulate reflection and self-assessment.

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3. Diversifying teaching approaches

Everywhere, people are connecting with each other through their mobiles, regardless of the context and almost without any kind of interruptions. This is definitely having a great impact on how we live and how we learn. At the same time, evolution in digital technology is opening up many different possibilities for teaching and learning. Let's discover how this reflects on teaching and how it goes far beyond simply using digital technologies in class.

3.1. Learning in changing environments

Nowadays, classrooms tend be replaced by study labs, where students and teachers use the space and settings according to their individual needs. As a result, teachers have to develop and implement diverse learning approaches to suit these changing and flexible environments. In this sense, future learning will be **collaborative**, **interactive** and **inquiry-based**; it will involve active learning, oriented towards the development of critical thinking, creativity, intercultural and interpersonal skills as well as an entrepreneurial mind-set.

In **active learning** students engage with the material, participate in the class, and collaborate with each other. Strategies and techniques involve students in active thinking, reacting, analysing, demonstrating, organising, for example, rather than passively sitting, watching and listening to others. In turn, **collaborative learning** involves learners working together to reach a common learning objective. Working in teams promotes creativity, respect for the ideas of others, and better results than when students work alone. In addition, **inquiry-based approaches** involve students in identifying problems, asking questions and finding solutions. They position students as active participants in learning and prepare them to work under their own initiative in professional or further academic contexts.

The process of holding students accountable for the learning process enables students to develop the autonomy and flexibility needed for self-regulated learning, leaving the teacher more time to focus on tasks such as giving feedback to students.

3.2. Learning strategies

So when students are learning in-class, they are encouraged to explore contents and improve their knowledge and understanding by engaging in discussions with peers, in problem-solving activities and reflecting about the learning process. The transition to a student-centred approach tends to favour teamwork, while allowing teachers to focus on improving communication with students, answering their questions, assessing their learning progress and improving their motivation through the use of more assertive and faster feedback (Blau & Shamir-Inbal, 2017).

It is clear that the principles of active learning, social interaction, teamwork, and student empowerment through inquiry-based learning have become central to on-campus learning experiences and are changing our way of teaching (Pirker, Riffnaller-Schiefer, Tomes, & Gütl, 2018). The strategies presented in Table 2 can be used to engage students in on-campus learning by focussing on real-world challenges, collaborative work and active engagement in their learning.

Table 2 Different learning strategies and their characteristics

Strategy	Characteristics
PBL	Students work in **small groups** on real-world problems, engaging in interdisciplinary, inquiry-led learning, and they develop **problem solving** techniques, self-directed learning strategies, team participation **skills**, as well as disciplinary knowledge.
Simulation & role play	Engaging in **real-world activities** in a simulated setting, students develop their ability to understand and handle **complex situation**s, enhancing **communication and interpersonal skills**, and building confidence, initiative and creativity.
Flipped classroom	Students attend lectures, **engage** in discussions, or conduct research **beforehand** somewhere other than the classroom setting, and **interact**, **interconnecting** theory and practice in the classroom, under the guidance of the teacher.
Peer learning	**Students** build their own **understanding** of content without relying on the teacher to transmit information; they learn with and from each other, developing **communication and teamwork skills**, conceptual understanding, problem-solving and deep learning skills.
Questioning	Classroom questioning is traditionally teacher-generated. **Student-generated** questioning is a strategy which encourages **critical engagement**, complex thinking, problem resolution, consensus reaching, etc. by transferring the onus of questioning from the teacher to the students.
Service learning	Students undertake **hands-on projects** in collaboration with community partners, developing personal skills and **community engagement**, applying learning to real-world settings, and promoting complex thinking, problem analysis and resolution.

iThink: Diversifying learning approaches

Think of one of your last classes and try to **compare the approaches you used against the principles of the different teaching approaches** presented here.

You may ask yourself:

- Which elements would I keep/change?
- How can I diversify my teaching?
- Which learning/teaching principles would I like to implement?
- How much time will I have/need for this?
- In which way(s) will I have to change my role?
- How will I assess learning outcomes?
- How will I evaluate the success of the teaching approach(es)?

Taking the teaching approaches and the strategies presented in this chapter, structure a lesson plan according to the specifications below. Remember to justify your choices and decisions as to strategies, materials and expected outcomes/outputs at each stage.

- **Topic:** Travelling
- **Duration:** Two 2-hour lessons
- **Learning outcome:** By the end of the lessons, the students should be able to organise a trip for a family of four that wants to explore the outdoors, without compromising their safety, comfort, and eco-adventure activities.
- **Time of year:** Autumn
- **Budget:** Not an issue
- **Target:** A family of four (two adults and two children)

Activity: Rethinking teaching/learning

Produce a video demonstrating a real example of a teaching/learning experience you have had in which you highlight the factors which made it successful.

Use the following **guidelines** to help you:
- clearly indicate the learning purpose, the learning process, and the learning outcome;
- mention the setting and the people involved (peers, students, family, community…);
- describe or include the materials that were used.

You may include:
- interviews (opinions of interviewees and of other participants in the experience);
- digital artefacts (audio, text, images, animations…);
- personal accounts, digital stories (e.g. including photos, along with narration, subtitles, background music, scenarios…), etc.

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4. Organising learning spaces

In a changing society, we not only have to diversify our teaching approaches, but we also have to think about what kind of learning environments are appropriate. Future classrooms should:

- be designed for people, not for ephemeral technology;
- enable technologies to be brought into the learning spaces, rather than having technologies built into them;
- allow for invisible technology and a flexible use of space.

4.1. Future learning spaces

Learning spaces should also be connected to the outdoors, be versatile and divided into areas that are purpose-oriented. Tissenbaum and Slotta (2019) argue that, to implement collaborative and inquiry-based learning approaches, for instance, (see Chapter 3), changes have to be made regarding the physical organisation of classrooms – transforming them into spaces where teachers and students can fully develop their teaching/learning potential.

Story

Lucia: Marco, I have to tell you… Yesterday, I asked my students to do some group work in class. I had to leave for a few minutes and when I got back the room was simply chaotic… well, redecorated!

Marco: Really?

Lucia: Yes. So, today I asked them to identify the most important physical elements that influence their learning. After reading their answers, I conclude that learning spaces should:

- allow for different types of learning activities simultaneously in the same space;
- permit the class to adapt to the current needs and of the topic we are teaching;
- favour collaborative work among the students
- facilitate teacher-student and student-student interaction
- promote motivation and engagement in learning

Marco: Well, ok, so… classrooms have to be much more flexible!

4.2. Designing learning-friendly spaces

When designing more flexible classrooms, every part of them should be taken into account (floor, walls, furniture) and can be used to improve the learning experience, bringing to life ideas and solutions developed actively and interactively by educators. Future Learning Spaces (Eberle, Hod, & Fischer, 2019; Hod, Yaari, & Eberle, 2019) can then enhance active learning by using real-life-based simulations in flexible and interactive surroundings, facilitating collaborative learning in more user and digital friendly contexts. So, to create them, we should pay attention to:

- **Seating layout** – to facilitate individual work, as well as to promote interaction and discussion in group work;
- **Sound** – to stimulate concentration and creativity by using different sounds, background music, as well as silence, depending on teaching and learning strategies, types of activities and learning styles;
- **Light** – to enhance focus and well-being, there should be the possibility of mixing natural and artificial lighting;
- **Colour** – to stimulate attention, concentration, communication, memorisation and creativity;
- **Space configuration** – to facilitate space flexibility to fulfil different purposes, e.g. presentations, group discussions, collaborative tasks, etc.;
- **Furniture** – to support a variety of tasks over time; it should be attractive, functional, comfortable and enhance use flexibility;
- **Equipment** – flexible and functional to support diverse learning experiences and to apply methods in practice;
- **Technology** – to facilitate the learning process and to enhance visualization and interaction, using, for example, virtual reality tools or interactive whiteboards;
- **Temperature and climatic conditions** – to create an atmosphere where body and mind work together in harmony; and
- **Decoration** – to increase enjoyment of learning and to create stimulating learning environments.

iThink: The ideal learning space

Now you are ready to summarise the most important characteristics of a future classroom, but there are always specificities that depend on the knowledge field. Think of a learning activity (including learning outcomes and teaching strategy) that you would like to develop with your students. **Write a short text** (1-page long) outlining the ideal learning space for this activity.

The following items may help you with this task: i) space configuration and seating layout, ii) decoration, iii) light, iv) sound, v) colour, vi) furniture and equipment, vii) temperature and viii) technology.

Activity: Planning teaching activities

Think of a lesson plan, design the teaching activities and identify the spaces and equipment you will need, i.e. physical classroom organisation, furniture and equipment, lighting and colours. Remember you want students to:

1. work collaboratively;
2. be engaged, focused and creative;
3. obtain and exchange information with external information sources and stakeholders;
4. communicate solutions effectively and integrate feedback.

Prepare a **15-minute presentation** to share your ideas and discuss them with your colleagues in the iLab.

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5. Gamification

Developing a playful approach and integrating games in teaching can help capture students' interest in a subject and rekindle motivation (Bovermann, Weidlich, & Bastiaens, 2018), which is crucial for successful teaching and learning.

5.1. Games for learning

The adoption of game-based learning takes time and energy – but it is worthwhile! If you are going to explore this approach in your classroom, concepts such as serious games, game-based learning or gamification can be considered. Take a look at their characteristics, presented in Table 3.

**Table 3** Basic concepts related to integrating games in teaching

Concept	Characteristics
Serious games	In serious games, reality is added to the fantasy world. These games are specially designed to provide training and practice for educational goals. They are great for positive reinforcement and are usually not taken as standalone teaching and learning activities.
Game-based learning	This is an umbrella term referring to the use of educational-related digital games that allow learners to play and stimulate real experiences.
Gamification	This describes the use of game design elements (game mechanics, dynamics and structure) in non-game contexts. It is meant to entertain by using game-like characteristics such as points, badges, rewards, proficiency levels, etc.

As explained in Chapters 1 and 3, students tend to get more enthusiastic about new concepts if they are involved in learner-centred, active learning experiences. Therefore, when students engage in **gamification**, they become responsible for their learning in a fun, enjoyable and exciting way, which tends to promote more positive results in the construction of new knowledge. At the same time, **game-based learning** also encourages active learning, stimulating students cognitively and affectively through the development of fun, meaningful and purposeful activities, designed to fulfil the pre-defined learning outcomes (Hung, 2018). Although initially classified as a type of game elaborated for a use different from entertainment, **serious games** provide a learning platform that is more effective than the ones traditionally used. However, Passarelli et al. (2019) clarify that serious games are not as stimulating as

gamification or game-based learning. In addition, one of the teacher's tasks, when using one of these options, is to find ways which best fit the students' profiles.

5.2. Gamification elements

Tondello et al. (2016) systematised a set of gamification elements based on a HEXAD gamification model, as presented below.
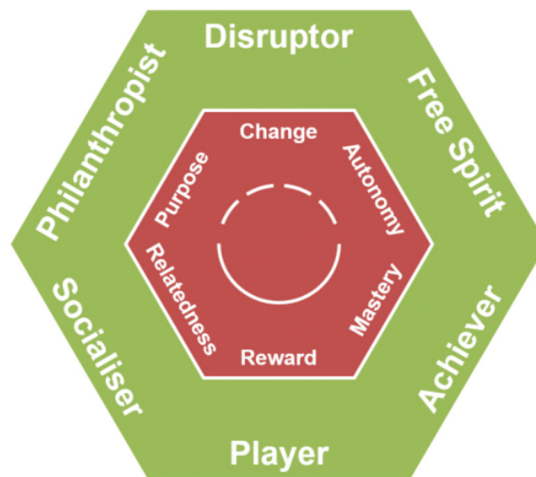
Source: https://medium.com/gameful-design/the-gamification-user-types-hexad-scale-a6d8727d201e

In this diagram, we can see the six distinct player styles and their corresponding motivations. Table 4 briefly explains them.

Table 4 Player styles and their motivations.

Player Style	Motivation
Philanthropist	**Purpose**: motivated by purpose and meaningfulness, these players value the sense of belonging and want to share knowledge, expecting nothing in return.
Disruptor	**Change**: motivated by the need for change, these players want to promote change directly or through other users.
Free spirit	**Autonomy**: motivated by self-expression and autonomy, these players like to have agency and want to create and explore.
Achiever	**Mastery**: motivated by status and mastery, these players are competitive, seek personal achievement and like to be challenged.

Player	**Reward**: motivated by rewards, these players are focused on winning and collecting rewards from a system.
Socialiser	**Relatedness**: motivated by relatedness, these players are networkers; they want to be connected and interact with others.

It is important to recognise that students not only value the experience and immersion in authentic contexts, but they also recognise that game mechanics add fun and value to their learning, while keeping them challenged and motivated by integrating knowledge into authentic experiences more easily. It is also important, when integrating games and teaching, to provide instructions to students right from the beginning, so that they know what to expect and what we expect from them. Remember: game-based strategies have to be aligned with learning objectives and giving meaningful feedback is essential to their success.

iThink: The game factor

Game-based learning may incorporate board games, conversation games, quiz games, role-play games, strategy games, and word games (Jackson, 2016). Given this huge variety, the selection of the game is critical.

If you are thinking of using game-based learning, how would you answer these questions?
- Which type of game best fits the teaching purpose?
- Will the game allow you to assess students' performance?
- Is the game motivating for your students?
- Is the game user-friendly?

Activity: Creating a workshop with CAMPUS

CAMPUS is a freeware digital platform used for education, social and extracurricular purposes. It facilitates the teaching and learning process through a diverse set of tools, including social and multimedia features, such as blogs, files, videos, photos, chat and task management. The main advantages are:
- easy interaction and information sharing;
- more effective streamlining of communication;
- stronger visibility ascribed to pedagogical practices.

After answering the questions presented in iThink, structure a **game-based learning strategy**. The following topics may help you with this.

1. Create groups and select a topic.
2. Create a **discussion group** in <u>CAMPUS.</u>
3. Define the learning goals and activities/tasks.
4. Select the resources needed.
5. Design **badges** and specify: name, graphic elements, rules to award each badge.
6. Discuss your **activity** with other groups.

Authors: Carlos Santos & Luís Pedro, University of Aveiro

Implement the activity with the other groups – your goal is to win all the badges defined by the other groups.

Don't forget: Make it possible for everybody to get a badge.

Exercise: Creating a contest with QUIZIZZ

One of the purposes of game-based learning is to stimulate teamwork by using collaborative, active and skills-based learning strategies. So, we challenge you to create an activity inspired by the "treasure hunt" idea. To do so, use QUIZIZZ (https://quizizz.com) to develop a questionnaire, in which answers can (only) be achieved by engaging in teamwork.

In doing so, please consider the following items:

- Select a theme for the "treasure hunt";
- Develop the quiz bearing in mind the goals to be achieved at the end of the activity;
- Create balanced groups, considering the skills of the students;
- Establish prizes/goals for each accomplished task (question answered);
- Test the planned contest and make any necessary adjustments.

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Glossary

Teaching: The process of nurturing someone's needs, prior knowledge and feelings, and acting so that learners can build their own knowledge and develop transversal and technical competences.

Learning approaches: Different forms of organising learning and tackling knowledge construction and competence/skills development, of which active, collaborative and inquiry-based learning are examples.

Skills-based learning: In this approach, learning involves the development of both hard and soft skills in an integrated way, and is adapted to the learner's needs, since new knowledge is built on prior knowledge. Thus, it promotes the development of flexibility and adaptability, not only in practical tasks, but also in social interaction.

Learning spaces: Physical or digital settings where formal, non-formal or informal learning can occur. Thus, it can refer to an actual or virtual, indoor or outdoor location. Learning spaces are highly diverse as to their use and, therefore, may support an assorted set of teaching and learning approaches.

Gamification: The use of game design elements (game mechanics, dynamics, and structure) in non-game contexts. It aims to entertain and stimulate learning by using game-like characteristics such as points, rewards, proficiency levels, etc.