European Commission

PubCirEco

GUIDELINES FOR THE USE OF TEACHING METHODS

Project No. ERASMUS-EDU-2024-CBHE 101179344

Mykolas Romeris University

Erasmus+
Enriching lives, opening minds.
Higher education

ec.europa.eu/erasmus-plus

European Commission

Contents

1. Crossover learning

Prof. dr. Birutė Mockevičienė, Mykolas Romeris University

Brief presentation of the teaching method

Crossover learning (CL) is an innovative teaching method that merges formal education with informal experiences. It motivates students to learn through real-world situations and then utilise their academic skills in practical settings. This approach bridges the gap between classroom instruction and real-world application, enabling learners to transfer knowledge across different environments [1]. In higher education, it has been shown to enhance deep understanding, critical thinking, and long-term retention of knowledge. In a typical crossover learning process, students transition between diverse learning environments—for instance, moving from lectures to practical exercises, community projects, or online simulations—while reflecting on how one experience complements another [2]. For example, students studying environmental policy might attend theoretical lectures on sustainability concepts, then participate in community initiatives related to waste recycling, and finally discuss how their observations align or differ from theoretical models. This dynamic exchange process encourages active learning, facilitates the establishment of connections between facts, and enhances understanding of the social environment.

Crossover learning is unique because of its flexibility and interdisciplinary approach. It fosters problem-solving and experiential learning, motivates students to take responsibility for their own education, and encourages collaboration across different subjects. In this model, teachers serve as facilitators who guide students in reflection and integration, rather than merely delivering information.

Finally, crossover learning cultivates graduates who are **adaptable, reflective, and socially engaged**—traits that are progressively vital in an increasingly dynamic global society. By integrating theory with genuine practice, higher education institutions can facilitate transformative learning experiences that transcend the boundaries of the classroom.

In higher education institutions, crossover learning can be implemented through internships, living laboratories, joint research, and partnerships with local communities or industrial companies. Digital technologies and virtual learning environments further enhance this approach by enabling a smooth transition from the academic context to the real-world context. The crossover learning approach in higher education emphasises learning that transcends the boundaries of the formal academic environment and the informal real-world environment. It allows students to connect the theory learned in the classroom with practical experience, encouraging active engagement, reflection, and knowledge transfer.

Description of the implementation of the teaching method in practice

By implementing this approach to strengthen circular economy competencies, the aim is to give students a better understanding of how sustainable systems work and how they can actively contribute to the transition to a more circular society.

The structuring of lectures usually begins with organised classroom sessions that cover the theoretical foundations of the topics under study, such as circular economy, systems thinking, life cycle analysis, resource efficiency, and sustainable business models. These are then complemented by practical activities involving external stakeholders, like local businesses, municipalities, or NGOs. Students engage in excursions, seminars, or case studies where they can observe and analyze real-life processes of material reuse, waste reduction, and eco-innovation.

The learning process. The learning process advances through reflection and synthesis activities, during which students discuss their experiences and connect them to theoretical principles. This reflection phase is crucial for strengthening circular economy skills, such as critical thinking, interdisciplinary teamwork, problem-solving, and evaluating sustainability impacts**.**

Digital platforms. Crossover learning is significantly enhanced by a range of integrated digital tools and collaborative platforms that support communication, document management, and data analysis [4]. This promotes ongoing interaction among students, teachers, and external partners, making learning more adaptable and responsive to real-world changes.

Self-assessment of learning achievements. The primary way to assess student progress in the crossover learning approach is through student self-reflection. Students are prompted to record their experiences, insights, and challenges in reflection journals, portfolios, or digital diaries. These reflections help educators evaluate how effectively students can interpret their practical experiences in relation to theoretical concepts and monitor how their understanding evolves over time.

Overall assessment. Assessment in crossover learning evaluates how effectively students integrate theoretical knowledge with practical, real-world experience. As crossover learning activities occur in diverse settings—such as classrooms, community projects, workplaces, or digital platforms—its evaluation combines formal and cumulative methods to assess both the learning process and results. The core principle of crossover learning assessment is reflection and integration [4]. Educators review students' self-reflections to assess their ability to apply theoretical concepts to practical experiences and to monitor the evolution of their understanding. In addition to reflection, peer-based assessment plays an important role. Peer and group assessments help to identify teamwork, communication, and problem-solving skills that are necessary for applying knowledge in interdisciplinary and real-world contexts. Teachers can also use observation checklists, feedback from external partners (such as companies or organizations involved in projects), and short presentations or reports to assess learning outcomes. Digital learning environments and analytics tools can further support assessment by monitoring participation, engagement, and progress in formal and informal learning contexts. Finally, assessing learning based on a crossover learning aims not only to evaluate what students know, but also how they apply, adapt, and transfer that knowledge across boundaries. This holistic approach ensures that graduates acquire both the academic knowledge and practical skills needed to tackle complex challenges, particularly those related to sustainability and the circular economy.

By combining formal teaching with experiential learning, the crossover learning fosters a deeper understanding of circular systems and encourages students to develop practical, applicable solutions to sustainability challenges. This approach not only strengthens academic learning but also prepares graduates to become innovative, responsible professionals who can promote the circular transition in their future workplaces.

References

1. Sharples, M. (2019). Practical Pedagogy: 40 New Ways to Teach and Learn (1st ed.). Routledge. https://doi.org/10.4324/9780429485534
2. Hilli, C., Nørgård, R. T., & Aaen, J. H. (2019). Designing Hybrid Learning Spaces in Higher Education. *Dansk Universitetspædagogisk Tidsskrift*, *14*(27), 66–82. https://doi.org/10.7146/dut.v14i27.112644
3. Yu, C. H., Jannasch-Pennell, A., Digangi, S., & Kaprolet, C. (2009). An Exploratory Crossover Study of Learner Perceptions of Use of Audio in Multimedia-Based

Tutorials. *Journal of Educational Computing Research*, *40*(1), 23-46. https://doi.org/10.2190/EC.40.1.b (Original work published 2009)

4. Lew MD, Schmidt HG. Self-reflection and academic performance: is there a relationship? Adv Health Sci Educ Theory Pract. 2011 Oct;16(4):529-45. doi: 10.1007/s10459-011-9298-z. Epub 2011 May 5. PMID: 21544551; PMCID: PMC3167369.

2. Peer teaching

Assoc. prof. dr. Aušra Šukvietienė, Mykolas Romeris University

Brief presentation of the teaching method

Peer teaching is a method where students learn from and with each other. The purpose of this teaching method is to encourage students work together, share knowledge and learn more deeply. The main idea behind this method is that by presenting various theories, concepts, or other study material to each other, students not only gain a deeper understanding of the topic and acquire knowledge, but also solidify their own understanding and develop the skills necessary to present and discuss this information [1;2]. Also, students who participate in peer teaching can explain complex ideas in a way that is accessible and understandable to their peers, making the learning experience easier [3].

The peer teaching method allows students**:**

- To get a deeper understanding of the subject;
- To gain new specific knowledge;
- To receive the same information from different sources and perspectives.

This method also promotes **teamwork, communication and discussion skills, and learning autonomy among students** [4]. Therefore, this method can be used both as a tool for developing students' knowledge in a specific field and as a method for encouraging discussion, different perspectives, critical thinking and promotes cooperation and partnerships among students.

Such an interactive teaching method helps to identify learners' preferences, encourages open discussion and the expression of opinions, reflection, and feedback. Also this method can enable students to identify and use their personal strengths in this process [1; 2].

Although peer teaching has many advantages, the outcomes of applying this method in the educational process directly depend on the students' own input and interaction. This can be difficult to manage from the outside for the teacher. Regardless of the instructions and tasks given, learning outcomes will be dependent on the students involvement, their preparation, and depth of knowledge of the taught subject. Also learning outcomes depends on the ability of students to manage the process itself: planning time, gaining and maintaining attention, respect of others opinions and feedback and etc. [5].

Description of the implementation of the teaching method in practice

In the context of a circular economy or other areas of sustainability and green skills education, this method can be used to develop new knowledge and stimulate discussion based on the analysis of different sources.

It is important, that before applying this method, teachers should have their own knowledge of the subject in order to correctly formulate topics for students, as well as prepare for managing the process in order to manage potential risks [3]. For this, the characteristics and experience of the participants, their competences and skills, and the content of this particular study subject must be considered.

Designed peer teaching assignment for students should [6]:

1. Correspond to the objectives, content and learning outcomes of the course.
2. Provide clear instructions for the task:

a. Present the task and its objectives
b. Provide the background information about the topic analysed, main sources and requirements for task fulfilment.
c. Define the roles, duties and responsibilities of participants and describe what students are expected to do in their roles.
d. Describe how the peer teaching process will be managed (schedule, time management, discussions, etc.).
e. Involve students in the assessment process, encourage them to provide feedback for their peers.

3. Describe the role of the teacher in this process, how he facilitates the peer teaching process and ensures that the opinions and contributions of everyone involved are valued and reflected in the process.

Assessment. Assessment of this task should combine three components: peer feedback, teacher feedback and self-reflection. While these components can be applied in different proportions (ratio), they are all necessary in order to evaluate teaching performance, developed skills and to encourage self-reflection.

After completing the task, students are expected to develop their ability to learn independently, collect and analyse information, and present it in a way that meets the requirements of the task and the needs of the learners (peers)[7]. This should also allow them to assess their own knowledge and skills, recognise their limitations, and decide which skills to develop in future.

References

1. Secomb J. (2008). A systematic review of peer learning in clinical education. Journal of Clinical Nursing. 17(6):703-16. 10.1111/j.1365-2702.2007.01954.x

2. Roy, K. & Swargiary, K. (2024). Effectiveness of Peer Teaching in Enhancing Academic Performance, Engagement, and Social-Emotional Outcomes among High School Students: A Quasi-Experimental Study. 10.13140/RG.2.2.28650.32965.

3. Banlasan, M. J., & Montaño, V. (2023). The Applicability of Peer Teaching in a Post-Graduate Business Course. *International Journal of Multidisciplinary: Applied Business & Education Research*, *4*(8), 2872–2883. https://doi-org.skaitykla.mruni.eu/10.11594/ijmaber.04.08.25

4. Stigmar, M. (2016). Peer-to-peer Teaching in Higher Education: A Critical Literature Review. Mentoring & Tutoring: Partnership in Learning. 24. 1-13. 10.1080/13611267.2016.1178963.

5. Rubin, L. & Hebert, C. (1998). Model for Active Learning: Collaborative Peer Teaching. College Teaching. 46. 26-30. 10.1080/87567559809596229.

6. Ramberg, R. & Weerasinghe, T. & Hewagamage, K.. (2013). Designing a peer-teaching activity to promote inquiry-based learning. Conference: International conference on E-ActivitiesAt: Nanjing, ChinaVolume: Proceedings of International Conference on E-activities

7. Skjærseth, I.G., Mildestvedt, T., Bonnevier, A. et al. (2025). Learning Outputs for Peer Teachers in Undergraduate Medical Education. *Med.Sci.Educ.* 35, 1617–1626. 10.1007/s40670-025-02365-0

3. Interactive learning

Assoc. prof. dr. Monika Petkevičiūtė-Stručko, Mykolas Romeris University

Brief presentation of the teaching method

Interactive learning is an instructional approach that actively engages learners in the educational process through dialogue, collaboration, and hands-on activities rather than passive information reception. This method involves students interacting with content, peers, and instructors in ways that stimulate critical thinking, creativity, and problem-solving [1; 2]. Unlike traditional lecture-based teaching, interactive learning focuses on participation, engagement, and real-world application of concepts.

The primary purpose of interactive learning is to enhance student engagement, promote deeper understanding, and improve knowledge retention. Research demonstrates that interactive learning methods can foster active involvement, increase motivation, and support collaborative knowledge construction [3;4].

Interactive learning promotes higher-order thinking skills, such as analysis, evaluation, and synthesis, by encouraging students to actively participate in the learning process. It helps develop collaboration and communication skills, enhances digital literacy (especially when digital tools are used), and creates a learner-centered environment [1].

Several studies underline the importance of interactive approaches in developing critical thinking skills and promoting sustainability and circular economy (CE) principles in education. While Garside [5] found no significant difference between lecture and discussion-based methods, other research suggests interactive learning media significantly improves critical thinking [6;7]. For example, in nursing education, interactive and experiential strategies markedly improved critical thinking dispositions compared to traditional approaches [7]. Moreover, interactive digital platforms and mobile applications have shown positive outcomes in technology-related courses, enabling better problem-solving and knowledge retention [8]. In the context of CE, innovative teaching models such as the CIRCULAR pathway—which involves real-world product redesign projects—successfully foster systems thinking and problem-solving [9]. Similarly, experiential learning through virtual enterprises has been effective in introducing sustainability concepts to secondary students [10]. These examples demonstrate that interactive learning aligns well with the practical and systemic nature of CE education.

Despite its benefits, interactive learning requires significant preparation, time, and resources. This method may not be effective when students lack prior knowledge or motivation, as its success depends on active participation and collaboration [10]. Teachers must have strong facilitation skills and access to adequate infrastructure, including digital tools for interactive platforms [11]. In large classes, managing discussions and ensuring equal participation can be challenging. Additionally, without proper guidance, activities may become unfocused, reducing learning efficiency [12]**.**

Description of the teaching method implementation in practice

Effective implementation requires a supportive environment with access to digital technologies (when applicable), flexible classroom setups for group interaction, and a well-trained facilitator who can manage discussions and guide activities. Clear rules for participation and time management are essential for ensuring structured interaction [1].

Assignments should:

1. Align with course objectives and expected learning outcomes.

2. Provide detailed instructions, including the purpose of the activity, background information, and assessment criteria.
3. Incorporate problem-solving tasks, debates, simulations, or case studies relevant to real-world contexts, particularly focusing on circular economy challenges.
4. Define clear roles for participants and encourage peer-to-peer feedback and reflection.
5. Integrate digital tools when possible to enhance interactivity (e.g., interactive polls, online discussion boards, collaborative platforms such as Kialo Edu).

Asesment. After completing the task, students should develop critical thinking, problem-solving, and collaborative skills, alongside a deeper conceptual understanding of the topic. In CE education, outputs may include: (1) Redesign proposals for sustainable products; (2) Group projects analyzing material flows or business models for circularity; (3) Interactive presentations or debates on policy implications for CE.

Assessment should combine multiple components:

- Peer assessment to encourage accountability and feedback.
- Instructor evaluation based on clarity, accuracy, and creativity.
- Self-reflection to promote metacognitive awareness and continuous improvement. Rubrics should reflect both process (participation, collaboration) and product (quality of output).

References:

1. Mandatory Training. (2023). *What is interactive learning and why is it important?* Retrieved from https://www.mandatorytraining.co.uk/

2. Echo360. (2024). Interactive learning for engagement and retention. Retrieved from https://echo360.com/articles/interactive-learning-engagement-retention/

3. Research.com. (2024). Interactive learning trends in education. Retrieved from https://research.com/education/interactive-learning-trends

4. Scholastic. (2024). Understanding interactive learning. Retrieved from https://www.scholastic.com/parents

5. Garside, C. (1996). Look who's talking: A comparison of lecture and group discussion teaching strategies in developing critical thinking skills. Communication Education, 45(3), 212-227.

6. Putri, A. (2024). Mobile interactive learning and critical thinking improvement in IT courses. *Journal of Technology in Education, 12*(1), 45-59.

7. El Bardeny, S., et al. (2023). Implementing interactive learning in nursing education: Effects on critical thinking dispositions. *BMC Medical Education, 24*(1), 52.

8. Song, L., & Cai, H. (2024). Interactive learning applications in software education: A meta-analysis. *Journal of Digital Learning,* 18(2), 120-135

9. Cris Garcia-Saravia Ortiz-de-Montellano, F., et al. (2023). The CIRCULAR pathway methodology: Teaching circular economy through product redesign. Sustainability Education Journal.

10. Keramitsoglou, K., et al. (2023). Experiential learning for sustainability education: The role of virtual enterprises. Journal of Environmental Education, 54(2), 176-192.

11. Baimakhanova, G., et al. (2023). [Interactive teaching methods in higher education: Effectiveness and engagement]. Journal of Interactive Learning Research.

12. RaccoonGang. (2024). Interactive online learning: Principles and examples. Retrieved from https://raccoongang.com/blog/interactive-online-learning-meaning-principles-examples/

13. Huichen Lin, H., et al. (2021). Online interactive peer-review in flipped learning: Impact on nursing

4. Project-based learning

Prof. dr. Birutė Mockevičienė, Mykolas Romeris University

Brief presentation of the teaching method

Problem-based learning (PBL) is a student-centred teaching method based on real or simulated problems [1]. Instead of passively absorbing information in a lecture hall, students work in small groups, analyse the problem, identify what they need to learn, and explore possible solutions. In this type of teaching, the role of the teacher changes fundamentally [2]. The teacher becomes a moderator [3]. They facilitate the learning process by posing comprehensive questions and guiding students through the procedure, thereby assisting them in overcoming their gaps in knowledge. Furthermore, they provide students with opportunities to reflect on their learning strategies.

One of the main features of PBL is that students are so involved in solving the problem that they learn completely new things without even realising it. During PBL, they take responsibility for their own learning and formulate their own learning goals, which increases their motivation and responsibility [4]. Problems that require the integration of knowledge from various disciplines are selected for learning, encouraging students to see the connections between theory and practice. They learn not a specific subject, but the practical implementation of the subject. Through discussion and collaboration, students develop teamwork, communication and negotiation skills.

Another important aspect of PBL is the emphasis on critical thinking and independent learning [5]. Students have to identify gaps in their knowledge, evaluate sources of information and apply concepts in new situations. This process reflects real professional practice, where individuals rarely encounter clearly defined problems with clear solutions.

Description of the Teaching Method Implementation in Practice

Problem selection. The implementation of problem-based learning in practice starts with thoughtfully choosing the right problems. It involves presenting a scenario that is meaningful to society, up-to-date, realistic, and closely aligned with the desired learning outcomes subject.

The characteristics of the problem. The problem is usually so familiar that it is encountered not only in a theoretical context, but is also discussed publicly. The problem must be quite complex; it may be controversial, involve different perspectives, and require examination from multiple scientific disciplines. For example: the impact of noise on cardiovascular diseases; climate change through waste collection management and payment.

Process. Initially, students are given only the problem statement, without prior lectures on the topic. This method sparks their curiosity and prompts them to identify what they already know and what they need to learn next.

Typically, students work in small groups of 5-8 members. Within these groups, they discuss the problem, generate hypotheses, and define specific learning goals. To do so, they must understand how to decompose the problem into manageable parts.

After dividing tasks, students independently gather information and conduct research. Later, they reconvene to share their progress, and peers evaluate each other's collected material. This process of group discussion, individual research, and collaboration simulates real-world professional problem-solving in organizations.

The role of the teacher. The role of the teacher is not to provide direct answers, indicate what information to look for and where to look for it, and even less to answer questions by showing the solution and explanation, but rather to act as a moderator, leading the discussion by asking questions

and ensuring that the group remains productive and works at an appropriate pace. It is also important for the teacher to encourage equal participation and to monitor potential conflicts in a timely manner.

Assessment. The PBL assessment strategy must reflect both the learning process and the results achieved. Teachers must assess not only the quality of the work done and the level of knowledge, but also the quality of the proposed solutions, their justification, and the information used to prove them [6]. The effectiveness of group collaboration is also assessed. Such an integrated assessment is possible by including self-reflection and peer assessment in order to encourage reflection on individual contributions and teamwork skills. This addition to the assessment methodology greatly contributes to the transparency of the entire learning process and also strengthens students' sense of responsibility for their own learning and that of their peers.

Implementation. Practical implementation changes the usual process of organizing education. This requires flexible scheduling, with periodic interventions and time for teamwork. Sometimes classes may be longer than traditional lectures to allow for in-depth discussion, and sometimes shorter. Successful PBL also requires a specific physical space that encourages group work, so the usual traditional classroom seating arrangement must be changed.

Refferences

1. Anielson Barbosa Da Silva, Ana Carolina Kruta de Araújo Bispo, Danilo Goncalves Rodriguez, Francisco Ialyson Felipe Vasquez (2018) Problem-based learning: A proposal for structuring PBL and its implications for learning among students in an undergraduate management degree program. *Revista de Gestao* 1 June 2018; 25 (2): 160–177. https://doi.org/10.1108/REGE-03-2018-030
2. Jonassen, D.H., Hung, W. (2012). Problem-Based Learning. In: Seel, N.M. (eds) Encyclopedia of the Sciences of Learning. Springer, Boston, MA. https://doi.org/10.1007/978-1-4419-1428-6_210.
3. Qiuju Yin, Chenxi Guo, Chao Dong, Tianmei Wang; (2021) May problem-based learning get higher evaluation from student?. *International Journal of Crowd Science* . 28 April 2021; 5 (1): 92–111. https://doi.org/10.1108/IJCS-12-2020-0019
4. Mar Carrió Llach, Maria Llerena Bastida. (2023). Exploring innovative strategies in problem based learning to contribute to sustainable development: a case study. *International Journal of Sustainability in Higher Education* 18 December 2023; 24 (9): 159–177. https://doi.org/10.1108/IJSHE-07-2021-0296
5. Lin-Aung H, Masumoto D, Linn Z, Kobayakawa Y, Okamura S, Kurihara K, Morio K, Tashiro Y, Sakurai H, Hori H. (2022). Students' perception of problem-based learning at a Japanese medical school: an exploratory sequential mixed method. Int J Med Educ. 2022 Dec 26;13:322-334. doi: 10.5116/ijme.6399.dee1. PMID: 36571846; PMCID: PMC9911279.
6. Yang Wang, Zixiao Zhan & Honglin Wang. (2025) Network Analysis of Outcome-Based Education Curriculum System: A Case Study of Environmental Design Programs in Medium-Sized Cities. *Sustainability* 17:15, pages 7091.

5. E-text book with students

Assoc. prof. dr. Aušra Šukvietienė, Mykolas Romeris University

Brief presentation of the teaching method

E-textbooks are digital versions of traditional printed books used for study purposes. They offer various tools to help students learn more effectively (e.g., interactivity of text and self-assessment tasks, accessibility of learning materials, text settings according to the individual needs of the learner, etc.), but this process is designed by the teacher [1]. However, to encourage their involvement and active learning of students, they could become co-creators of these e-books. In this case, e-textbooks provide a collaborative digital environment in which teachers and students can communicate, exchange feedback, discuss and share materials, take tests and monitor results [2].

The joint creation of study materials can be used as a tool to develop students' academic literacy and promote their ability to collect and organise information, as well as encouraging cooperation between them [3]. However, when using e-textbook creation as a collaborative activity, teachers must assist and guide students through the whole process [2].

The main advantages of e-textbooks for students are their active engagement in the learning process and their responsibility for high-quality learning content preparation. This allows them to deepen their knowledge of the subject and develop their **ability to search for reliable information**, **use alternative learning sources** and **present their own opinions** based on different points of view. It develops essential skills such as **critical thinking, digital literacy, creativity, and collaboration with other students** [5]. Also, if the e-textbook preparation task gives students the creative freedom, includes creation of self-reflection, repetition tasks, control questions, or other tasks, this allows the teacher to identify the areas that students consider most important in each topic and draw teachers attention to areas that may not have been discussed in lectures before.

The prepared e-textbooks may not meet their intended objectives if they are only digitized versions of paper textbooks or their preparation is poor, with limited interactivity and multimedia. In this case, we can only talk about a more convenient and less expensive source of learning, but the learning process is not interactive [1]. When discussing disadvantages, it is important to emphasize that the quality and content of student-created e-textbooks also depend on their personal input, depth of understanding of the subject, choice of information sources, etc., which can be difficult for the teacher to control if there are many co-authors. So, on the one hand, this method requires clearly defined instructions for completing the task, but on the other hand, strictly defined tasks can limit students' creativity.

Description of the teaching method implementation in practice

E-textbooks can be an effective teaching tool for the circular economy and related topics when it is not possible to provide students with a specific list of literature for particular topics due to the vast amount of available sources. In this case, students can be provided with guidelines for the e-textbook, as well as the topics and/or key sources that can be used in it. However, their task must

In current context of digitization and data openness, it should not be difficult to ensure that students have necessary skills and access to technology and information. Nevertheless, before planning implementation of tasks it is necessary to evaluate the practical application of this method related to the digital readiness: (i) What technological possibilities exist for students to participate in creating an e-textbook? (ii) Is there a reliable digital space or platform for this purpose? (iii) Do students have the necessary digital skills to complete the task? (iv) Are teachers sufficiently skilled to advise students on both content and technical issues? and etc [4]. Only if the technical infrastructure is in

place and methodological support for this process can be provided, it will be possible to use this teaching method in practice.

When formulating the task based on the course's objectives, content, and learning outcomes, it is important for teachers to:

1. To provide students with clear instructions for the task, specific requirements for content creation, and details of any potential risks:
    a. Will there be specific requirements for content creation and the use of different sources, such as pre-set topics, information search strategies and the use of AI tools?
    b. What measures will be taken to ensure the reliability and quality of the textbook content and information provided?
2. Divide all activities into smaller stages, detailing the process and tasks for each stage.
3. Include the use of different media and technical tools.
4. Encourage cooperation between students.
5. Describe how the results of teamwork and each individual's contribution will be assessed.

Before the process begins, teachers should also consider:

- What role they will take on and how involved they will be in content creation, coordinating student discussions, encouraging cooperation, etc.
- Will there be reviews during the textbook development process, and if so, who will be responsible for them—other students or the teacher? [5]

Assessment. During the task, students are expected to prepare high-quality e-textbook content using digital technologies that meets the requirements described in the task. They should be involved in the process and actively participate in the co-creation of the content. Also, they should be able to argue their views and demonstrate analytical thinking.

Accordingly, the assessment should cover all the expected learning outcomes. These include the content of the e-textbook and its compliance with the requirements; student engagement in the process; active participation in the co-creation process; and the ability to argue and demonstrate analytical thinking. It is important that students are aware of the assessment criteria in advance.

How the tasks carried out using this method should/could be assessed: (i) tasks should be assessed based on the quality of the prepared e-textbook (e.g. content, interactivity and relevance of the information provided, depth of analysis and etc.); (ii) based on the individual performance of each student (e.g. activity, involvement in joint creation, ability to present reasoned opinions ant etc.)

References

1. Lokar, M. (2015). The future of e-textbooks. 10.13140/RG.2.1.1142.8966.

2. Grönlund, Å., Wiklund, M., & Böö, R. (2018). No name, no game: Challenges to use of collaborative digital textbooks. *Education & Information Technologies*, 23(3), 1359–1375. https://doi-org.skaitykla.mruni.eu/10.1007/s10639-017-9669-z

3. Selfa-Sastre, M., Pifarré, M., Cujba, A., Cutillas, L., & Falguera, E. (2022). The Role of Digital Technologies to Promote Collaborative Creativity in Language Education. *Frontiers in Psychology*, 13, 828981. https://doi-org.skaitykla.mruni.eu/10.3389/fpsyg.2022.828981

4. Jimenez, J. D., & Moorhead, L. (2017). Recasting the History Textbook as an e-Book: The Collaborative Creation of Student-Authored Interactive Texts. *History Teacher*, 50(4), 565–595.

5. Haleem, A. Javaid, M., Qadri, A. M., Suman R. (2022) Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, 3, 275-285. doi.org/10.1016/j.susoc.2022.05.004.