



PR2/T3. Teacher assessment and evaluation methodology

Version: 4

2023

Lead organisation: RUAKE



Document Identity

Recipients	HIIT Consortium
Confidentiality Status	

Document Versioning

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V1	22.04.2023	Tsvetelina Georgieva, Stanislav Penchev, RUAK
V2	23.04.2023	Tsvetelina Georgieva, Stanislav Penchev, RUAK
V3	11.05.2023	Tsvetelina Georgieva, Stanislav Penchev, RUAK
V4	15.01.2024	University of Galway

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1 INTRODUCTION

The assessment is comprised with self-reflection questions for those that use the e-learning space on <https://www.hiitproject.eu/>.

Assessment and evaluation methodology will consist of two parts. The purpose of the first part is to support the teachers in a self-reflection journey to evaluate the knowledge they have acquired in the individual modules. The second part is related to the knowledge, use of instructional technology and innovative educational tools, and the skills of learners.

2 PR2/T3 PART 1 OF METHODOLOGY

The first part of the methodology will be related to the content of the course “Instructional Technology for STEM Teacher in higher education (HE)”.

There are a total of 12 Units in 3 modules. Each Module has small quizzes with questions for self-evaluation. Taking quizzes is a voluntary action for completing the units.

The following tables present 45 questions grouped by module.

2.1 QUESTIONS FOR MODULE 1: INSTRUCTIONAL TECHNOLOGY

No	Question – Unit 1	Yes	No
1	Are integration of artificial intelligence and machine learning into educational software and systems a part of the instructional technology?	Yes	
2	Could Learning take place at home?	Yes	
3	Are instructional technologies a field of study that receives contributions from many disciplines and contributes to many different disciplines?	Yes	
4	Did Instructional technology made low contributions to the development and use of many different teaching methods and techniques?		No
5	Does instructional technology encourage learning by controlling the environment?		No
6	Could be Instructional technology scaled to reach large numbers of learners?	Yes	
7	Is the statement true "The use of instructional technologies do not allow students to access information equally despite differences in social status, economic status, ethnicity, physical ability, age or other qualifications"?		No
8	Is Instructional technology allowing flexible and adaptable learning experiences?	Yes	
9	Does Instructional technology provide immediate feedback and opportunities for learners to apply their knowledge and skills?	Yes	
10	Are Instructional technologies including discussion forums, group projects, and other collaborative activities that foster communication and teamwork?	Yes	



11	Is the Instructional technology reducing the need for physical resources such as textbooks and classroom space, and can reach large numbers of learners?	Yes	
12	Is the statement true "Teachers doesn't need to have the technical skills and knowledge necessary to operate instructional technology effectively."?		No
13	Does the teachers need to invest time in learning new technologies and integrating them into their curriculum?	Yes	
14	Are there concerns about the privacy and security of student data when using instructional technology?	Yes	
15	Is it true the statement "Teachers don't need to be knowledgeable about data privacy laws and ensure that they are using technology in a way that protects student privacy and data security."?		No

2.2. QUESTIONS FOR MODULE 2: INSTRUCTIONAL DESIGN

No	Question	Yes	No
1	Is the Instructional design a process of developing well-structured instructional materials using objectives, relevant instructional strategies, systematic feedback, and assessment?	Yes	
2	"The facilitation to effective learning by providing learners with meaningful and relevant instruction that meets their learning needs and enhances their knowledge, skills, and abilities" - Is it a goal of instructional design?	Yes	
3	Is the statement true "Pedagogical principles, such as scaffolding, active learning, feedback, and assessment, are integrated into instructional design."?	Yes	
4	Is the statement true "By following a systematic instructional design process, instructional designers can't create instructional materials, programs."?		No
5	Is Instructional design ensuring that instructional materials, activities, and assessments are designed in a way that optimizes learning outcomes?	Yes	
6	Is the statement true "Instructional design takes into consideration the needs, characteristics, and preferences of learners, aligns with learning theories and pedagogical principles, and incorporates evidence-based best practices in education and training, resulting in effective and efficient learning experiences."?	Yes	
7	Is the statement true "A well-designed instructional program can't save time and resources by focusing on the most relevant and effective instructional strategies and materials, and by avoiding unnecessary duplication or redundancy."?		No
8	Are instructional materials and activities designed in a way that is suitable for the chosen modality?	Yes	
9	Is the statement true "Instructional design can be applied to various modalities of instruction, including face-to-face, blended, and online learning."?	Yes	
10	Is the statement true "Instructional designers can't create instructional materials and activities that can be accessed and used by all learners, without discrimination or barriers."?		No



11	Is it necessary to follow established instructional design models to ensure systematic and effective instructional design?	Yes	
12	Are Linear instructional design models a systematic approach used in education and training to create effective instructional materials and experiences?	Yes	
13	Are linear instructional design models providing a step-by-step process for designing, developing, implementing, and evaluating instructional materials, with the goal of enhancing learning outcomes?	Yes	
14	Is the develop instructional strategies including selecting appropriate instructional methods, media, and resources that align with the objectives and meet the needs of the learners?	Yes	
15	Are the instructional materials evaluated to identify any design flaws or areas for improvement?	Yes	

2.3. QUESTIONS FOR MODULE 3: INSTRUCTIONAL TECHNOLOGY FOR LEARNERS WITH LEARNING BARRIERS

No	Question	Yes	No
1	Is it necessary the teachers to consider the potential variation in individual skills, learning styles and preferences, age, gender, culture, abilities, and disabilities as they select appropriate strategies for the delivery of instruction and then apply universal design to all course activities and resources?	Yes	
2	Does the teacher need to consider the potential diverse characteristics (e.g., with respect to abilities to see, hear, manipulate objects, read, and communicate) of the trainees?	Yes	
3	Is defining impact and recognizing disabilities the main step of adapting the teaching methods and course content?	Yes	
4	Is necessary to use appropriate technological tools in the teaching methods for trainees with learner barriers?	Yes	
5	Do role play and problem-based learning appropriate for Visual Impairment?	Yes	
6	Is anything that prevents students from learning calling a learning barrier, it could be physical, mental, emotional, cultural, or social elements?	Yes	
7	Is it necessary to have knowledge about the features of the online platforms you must use and the tools that are available?	Yes	
8	Does students with learning barriers require more individualized support and attention from educators?	Yes	
9	Will using a variety of teaching strategies, including visual aids, hands-on activities, group work, and individualized instruction help students stay engaged and motivated?	Yes	
10	To improve yourself and your students you have to Promote self-advocacy, to provide timely feedback or seek professional development opportunities to learn more about working with students with learning barriers?	Yes	
11	Is students with learning disabilities may struggle with processing and understanding complex instructions?	Yes	



12	Could providing extra time help alleviate anxiety and allow the student to demonstrate their knowledge and abilities more effectively?	Yes	
13	Is it necessary when teaching STEM concepts to use examples that are relevant and relatable to students from diverse backgrounds?	Yes	
14	Should technology tools be selected based on their lack of ability to support the learning objectives of a course?		No
15	Will the context in which the tool is using shape how the student uses the tool?	Yes	

3 PR2/T3 PART 2 OF METHODOLOGY

The second part of the methodology consists of 30 questions.

First five questions are related to knowledge of instructional technology and innovative technological tools. Each question has 4 answers which could be “1 - not at all”, “2 - little / low”, “3 – average”, “4 – very/high”. The maximum points are 20, minimum – 5. There is a scale for evaluation of the learner’s knowledge depends on the received points.

Developed Skills are assessed using 25 questions. We have 5 skills: Digital Competences; Design Skills related to instructional technology; Creativity skills; Motivational Skills and Skills related to integrate instructional technology into their courses. For each skill there are 5 questions with four answers which could be “1 - not at all”, “2 - little / low”, “3 – average”, “4 – very/high”. The maximum points are 20, minimum – 5. There is a scale for evaluation of the learner’s skills depends on the received points.

3.1 QUESTIONNAIRE FOR ASSESSMENT THE KNOWLEDGE AND SKILLS RELATED TO INSTRUCTIONAL TECHNOLOGY, TOOLS, AND INTEGRATION INTO THE COURSES

This questionnaire will be used before and after training to assess the knowledge and skills related to instructional technology, tools, and integration into the courses (Table 1).

Table 1. Part 2. Questionnaire related to the knowledge and use of instructional technology and innovative educational tools, and the skills of learners.

№	Question	1	2	3	4	5
		not at all	low	average	high	very high
1. Knowledge of instructional technology and innovative technological tools.						
1	What is your level of your understanding what is instructional technology.					
2	What is your level of your knowledge on how to use technological tools in learning process.					
3	What is your level of your engagement in effective learning experiences that use available					



	technology tools for pedagogical purposes and motivation.					
4	What is your level of using innovative technological tools to motivate your students in the learning process.					
5	What is your level of knowledge on how to use instructional technology for the students who have learning barriers.					
<p>Scale:</p> <p>1. I don't have a knowledge of instructional technology and innovative technological tools: 0 – 5;</p> <p>2. I understand what instructional technology is but I don't use technological tools: 6 – 15;</p> <p>3. I have a good knowledge of instructional technology and innovative technological tools: 16 – 20;</p> <p>4. I have a good skill and use very often instructional technology and innovative technological tools. I have knowledge on how to use instructional technology for the students who have learning barriers.: 20 – 25.</p>						
2. Developed Skills						
2.1. Digital Competences						2.
№	Question	1	2	3	4	5
		not at all	low	average	high	very high
1	I use digital presentations, video conferencing, webinars, video platforms, digital distribution & sharing tools, simulations & serious games, online labs & virtual experiments to teach (e.g., present, demonstrate, explain) the students.					
2	I use digital communication and collaboration technologies (e.g., web conferencing, digital sharing and group collaboration tools, interactive whiteboards, project management software, wiki tools, social media, and collaboration games) to interact, communicate and collaborate with students					
3	I use digital assessment technologies (e.g., digital quizzes, tests, questions, exercises, assignments, inquiries, web quests) to periodically assess the students' progress.					
4	I use digital monitoring tools (e.g., remote desktop control & screen sharing), dashboards, and learning analytics to monitor students' activities, interactions, relationships, mood, and performance, as well as the teaching process, educational resources, equipment, and infrastructure					



5	I use digital technologies to support quality assurance in education (e.g., statistical analysis of student performance & career; statistical analysis of teacher training programs from different schools, regions, and states).					
<p>Scale:</p> <p>1. Poor digital skills: 0 – 5;</p> <p>2. I use low digital tools and resources: 6 – 15;</p> <p>3. I have a good digital skill and use often digital tools and resources: 16 – 20;</p> <p>4. Excellent digital skills: 20 – 25.</p>						
2.2 Design Skills related to instructional technology						2.
№	Question	1	2	3	4	5
		not at all	low	average	high	very high
1	What is your level of knowledge on how instructional design can be used to enhance teaching and learning experiences in various educational settings.					
2	What is your level of knowledge about key concepts and principles of instructional design.					
3	What is your level of knowledge on how effective instructional design can enhance learning outcomes and engage learners.					
4	What is your level of knowledge about multimedia design principles when you create your materials.					
5	What is your level of knowledge about linear instructional design models that are used in the field of instructional design.					
<p>Scale</p> <p>1. Poor design skills: 0 – 5;</p> <p>2. Low level of knowledge about instructional design: 6 – 15;</p> <p>3. Good knowledge about design principles: 16 – 20;</p> <p>4. Excellent design skills: 20 – 25.</p>						
2.3 Creativity skills						
№	Question	1	2	3	4	5
		not at all	low	average	high	very high
1	What is your degree of agreement with the statement that acquiring basic skills is more important than fostering creativity.					
2	What is your degree of agreement with the statement that teachers should include the assessment of creativity when designing learning content.					



3	What is your degree of agreement with the statement that creativity can be enhanced by using innovative technology.					
4	What is your degree of agreement with the statement that the practice enhance creativity.					
5	What is your degree of agreement with the statement that “I often look for new ideas outside of my own field and try to apply them to my own.”					
Scale: 1. Low design skills: 0 – 5; 2. Design knowledge is fact but not often applied: 6 – 15; 3. Good design skills: 15 – 20; 4. Excellent design skills and practice experience: 20 – 25.						

2.4 Motivational skills						
№	Question	1	2	3	4	5
		not at all	low	average	high	very high
1	What is your degree of agreement with the statement “I like to use innovative technology because I can get good results and benefits”.					
2	What is your degree of agreement with the statement “The use of innovative instructional tools improves the quality of my teaching”.					
3	What is your degree of agreement with the statement “Use of instructional technology make learning more meaningful”.					
4	What is your degree of agreement with the statement “I can search, evaluate and choose instructional tools that are appropriate to my teaching”.					
5	What is your degree of agreement with the statement “Innovative instructional technology can facilitate student centered leaning”.					
Scale: 1. Very demotivating: 0 – 5; 2. Slightly demotivating: 6 – 15; 3. Slightly motivating: 16 – 20; 4. Very motivating: 21 – 25.						
2.5. Skills related to integrate instructional technology into their courses						
№	Question	1	2	3	4	5



		not at all	low	average	high	very high
1	What is your degree of agreement with the statement "I have limited understanding on how to integrate instructional technology into my courses".					
2	What is your degree of agreement with the statement "I can use software/website that can support".					
3	What is your level of knowledge about technology integration models.					
4	What is your degree of agreement with the statement "I use appropriate? teaching and assessment approaches".					
5	What is your degree of agreement with the statement "I have access to hardware, software and other resources".					
Scale: 1. Very low skills for integration of instructional technology: 0 – 5; 2. I have knowledge to integrate instructional technology: 6 – 15; 3. I can integrate instructional technology: 16 – 20; 4. I have good knowledge and experience in integration of instructional technology: 21 – 25.						