PRACTICAL SKILLS EVALUATION WITH DIGITAL TECHNOLOGIES IN TEACHER EDUCATION

Co-funded by the Erasmus+ Programme of the European Union

D-EvaBank

Repository of activities and resources for e-assessment of students' practical skills

CRiEDO UAB
Amsterdam University of Applied Sciences
West University of Timișoara
inter CULTURAL iceland

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D-eva PRACTICAL SKILLS EVALUATION WITH DIGITAL TECHNOLOGIES IN TEACHER EDUCATION

https://d-eva.eu/

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Table of contents

Introduction

Introduction

D-Eva Bank represents a repository of resources for e-assessment of students' practical skills in higher education settings. In the following pages you will find 14 activities including examples of study cases of real-life situations in schools or universities, that include e-assessment rubrics, learning analytics, feedback, gamification, and e-assessment proposals for practical skills.

The activities were designed in the framework of the Erasmus+ project D-Eva "Practical Skills evaluation with digital technologies in teacher education" by university academics from three European institutions involved in the project consortium (Universitat Autònoma de Barcelona, West University of Timisoara, Amsterdam University of Applied Science).

D- Eva Bank is the first intellectual outcome of the project and aims to offer university lecturers resources to facilitate students' practical skills using technologies. These activities are available in online format on the D-Eva Hub, a digital platform especially designed in the project. Please visit http://devahub.eu for details.

The D-Eva Bank design and development process

The process followed in order to design the activities consisted in:

First of all, the students in education professional skills were identified. Secondly the project members have discussed about the relevance of each one of these skills and have selected a number of 14 activities to be developed in detail. In order to support the design process, a templated containing the main headings of the activity, has been proposed. This template contained the following aspects:

- Title of the activity
- Keywords
- Level of digital competence needed by the teacher
- Level of thinking skills develop with the activity
- Assessment agents involved
- Problem, justification of the necessity for digital transformation
- Skills and learning achievements assessed with the activity
- Description of the assessment activity
- Assessment strategies and instruments
- Assessment criteria
- Description of the feedback
- Type of digital tools used and examples of software
- Levels of potential digital transformation
- Scientific references and good practices

After the first draft of the activity, university academics external from the project team gave specific feedback using a peer-review system. Aspects related to the sustainability, comprehension and usefulness were assessed. After this revision process, the final version of the activities was shared.

In the following pages, you can access each one of these activities. Activities are addressed to the e-assessment of practical skills in higher education of studies of teacher education. Therefore, all activities require the mobilization of teaching competences to solve some challenges. Since the source of activities is international, the skills they relate to are quite diverse: teaching a class, preparing teaching materials, designing learning spaces, collaborating with the school community, professional development, technological skills and research.

Uses of the repository

The D-Eva project aims to develop e-assessment resources able to secure authentic, sustainable and effective students' assessment of their work-based skills; build the university teachers' capacity to use e-assessment in an effective and coherent way, along with enhancing their digital competences; and equip universities with mechanisms to change the assessment culture, organically incorporating digital solutions to facilitate students learning.

The activities have been designed to be implemented in online learning contexts, or face-to-face learning context with a digital component in the learning sequence, from the practical experience of university academics in the context of a specific course. Nevertheless, all activities can be transformed and adapted into other fields of knowledge that aim to assess practical skills that imply similar thinking skills: remembering, understanding, applying, analyzing, evaluating and creating.

Therefore, the 14 activities can be directly implemented with your group of students, applying the necessary modifications to make it suitable to the specific needs of your context, or personalizing the digital tools and resources with those that you find more suitable for your students, yourself and your institution. However, they could also serve as a source of inspiration to integrate some digital assessment activities in your teaching programs, as examples of adapting face-to-face learning and assessment into a digital environment, or even as a starting point for your teaching plans and assessment of practical skills. What is more, all the activities are contextualized in the teaching program but since many of them are transversal competences, the activities can also be useful for other Higher Education studies.

Activities

Activity 1

Teaching a class to practice teaching skills using videoconferencing tools

Activity 1. Teaching a class to practice teaching skills using videoconferencing tools

Keywords

Roleplay, emotional competences, teaching skills, communicative competences, co-assessment

Level of digital competence

Intermediate

Level of thinking skills

Applying, Analyzing, Evaluating, Creating

Assessment agents

Peer-Assessment, Teacher's Assessment

Problem and Justification: Why do we need digital transformation?

Although nothing compares to giving a class to real students (those who are the target, for instance, in Primary Education or Early Childhood Education), simulating giving a class in a controlled context might be of help to Education students to develop their future necessary skills (even if they run the class or attend it and give feedback to their classmates) and to teachers to observe, support and assess them.

Transforming the activity of giving a class into an e-assessment activity could be useful to:

- (the student running the class) to diminish the nervousness of performing in front of a big face-to-face audience,
- (students attending the simulated class) to concentrate only on the student giving the class,
- (all) to record the session for further analysis.

The digital transformation, thus, might facilitate the observation and feedback by classmates and the teacher thanks to the use of video digital tools. Thus, a session based on giving a class can be later used as a teaching material or study material if, for instance, some notes, comments or questions are added to the video. Furthermore, in cases where on-site education is interrupted, the use of a videoconferencing tool could serve to easily adapt such types of activities. Thereby, developing the necessary practical skills of Education students through active e-assessment activities can be maintained.

Skills and learning achievements assessed

- Design and deliver a teaching sequence in front of an educational audience.
- Develop strategies to deal with emotions when running a class.
- Develop teaching strategies to respond to contingencies.
- Be able to identify good and bad practices by critically self-assessing and assessing others when running a class.

Description of the assessment activity

In a context of a course of teacher education delivered online, students must design and run a class in group. The sequence is divided into three steps: 1) design, 2) run and 3) assess.

1) Students organise themselves in groups of four people. Each group designs a 15-minute teaching sequence to be run in front of their classmates. The teaching sequence must be oriented to their learners' target and be defined including: a central topic, learning outputs, grouping, duration, tasks, resources and assessment criteria. The design must be completed in form of a grid. Once the teacher presents the activity, 20 minutes of online tutoring is facilitated in the first session to support students.

2) The next session (depending on the size of the group this can be extended) is devoted to role-play. Each group must run the designed class by videoconferencing while their classmates and the teacher observe and assess them through a checklist. It is recommended to switch on the camera. All members of the group must perform a part or intervene in the teaching sequence. Some observers have roles to make the session more real and dynamic, for instance: disturbing, participatory, demanding etc.

3) After each performance, classmates and the teacher give feedback to principal students, and they can respond back. The session is recorded previous agreement.

Assessment strategies and instruments

The teacher facilitates a checklist and questions for reflection to students before starting the activity. The instrument is jointly reviewed and negotiated. The draft instrument is as follows:

Table 1. Checklist for reflections to students of activity 1.

Criteria. In the class…	Yes/No	Comments
• The design is appropriate for the target audience (topic, grouping, timing, task, strategies, resources).		
• The learning outcomes and expected knowledge have been achieved		
• "Teachers" have attended, solved doubts and were respectful to students.		
• "Teachers" have demonstrated knowledge domain.		
• "Teachers" have communicated appropriately to students.		
• "Teachers" have been engaging.		
• "Teachers" have adapted to contingencies.		
• "Teachers" have regulated their emotions.		
• "Teachers" have demonstrated a range of teaching strategies.		

Assessment criteria

The activity 1 counts 10 points. The checklist above will be used by the teacher to take notes about the assessment criteria. The activity will be evaluated considering the rubric completed during the role-play and the learning output.

Learning output (2 points):

- The group has delivered a learning product containing a grid with the learning sequence and including all items asked.
- The learning sequence is appropriate for the target audience (topic, grouping, timing, task, strategies, resources).

Role-play (8 points):

- All students perform the learning sequence.
- Students demonstrate skills to design a coherent learning sequence adapted to the target group.
- Students demonstrate skills to run a class and deal with diverse students' behaviours and unexpected situations.
- Students demonstrate a range of teaching strategies.
- Students demonstrate communicative competences.
- Students demonstrate emotional competences.
- Students are able to self-assess their practice and give feedback to classmates to improve teaching skills.

Description of the feedback

The feedback will be given by the teacher and classmates after the performance. This will be short, oral and synchronous. Then, after the delivery of the learning output, the teacher will give quantitative and qualitative feedback to each group in written form asynchronously.

Type of digital tools used and examples of software

Sessions will be run with a videoconferencing tool like Teams or Meet. Sessions will be recorded using the software's recording option.

The feedback given by classmates and the teacher can be delivered using tools for formative assessment like Peergrade or Corubric.

The learning outputs can be delivered using the institutional Learning Management System (LMS). Examples are: Moodle, Blackboard or Teams. All these platforms offer options to deliver tasks. The written feedback can be given by means of the "Task" tool of each LMS as all of them permit adding feedback. In addition, tools like Google Drive or Dropbox or environments like Google classroom or Edmodo could be used for delivery purposes.

Levels of potential digital transformation

1. **Accessible and available: developed lots of times, easy and known.**
   This level corresponds to the activity explained in the previous sections.
2. **Under exploration: the technology exists but it is not easily accessible.**
   An advanced solution to the need of practicing giving a class online could be to incorporate a chatbot into de LMS or learning environment. The chatbot should have been nourished with typical questions and comments that students could make and that could be challenging for those students running a class.

Scientific references and good practices

Correia, A. P., Liu, C. & Xu, F. (2020). Evaluating videoconferencing systems for the quality of the educational experience, *Distance Education,* 41(4), 429-452, DOI: 10.1080/01587919.2020.1821607

University of Wollongong. (n.d.). Teaching and Learning with Web and Videoconference Technologies. https://tr.uow.edu.au/uow/file/c194f4b2-3322-4b96-8297-4ef295c23e22/1/Teaching%20with%20Web%20and%20Videoconferencing%20Tech.pdf

Activity 2

Evaluating students' ideas in science with scientific simulations by comparing predictions with obtained results

Activity 2. Evaluating students' ideas in science with scientific simulations by comparing predictions with obtained results

Keywords

Inquiry, modelling, prediction, experiment

Level of digital competence

Intermediate

Level of thinking skills

Analyzing, Evaluating

Assessment agents

Self-Assessment, Teacher's Assessment

Problem and Justification: Why do we need digital transformation?

Science education is strongly related with inquiry and laboratory experiments. These experiments play an important role in teacher education, since they allow students:

- To increase their content knowledge (building and refining scientific models to explain the natural phenomena surrounding us).
- To enhance their pedagogical content knowledge (identifying common misconceptions and exploring strategies to improve students understating of these natural phenomena).
- To deepen their epistemological knowledge (understanding how does science work and the basis of school science).

Despite the value of real hands-on experiments, sometimes these cannot be carried out in teacher training settings, for different reasons:

- Lack of infrastructure (laboratories are sometimes small and the safety distance cannot be guaranteed).
- Lack of materials (samples of tissues, electronic devices, chemical reactants, etc.).
- Lack of time (some experiments are very slow or time-consuming).
- Risk (some experiments can be dangerous or hazardous, especially those using strong acids, high voltage electricity, radioactive materials, etc.).

Virtual simulations have been proposed as a solution. Currently there is a wide variety of simulations adapted to different ages and scientific topics in chemistry, geology, physics, biology, but also for mathematics, engineering, social sciences, etc.

In the following, we will focus on a specific simulation called "Circuit construction kid", oriented for age 10-16: https://phet.colorado.edu/en/simulations/circuit-construction-kit-dc

Skills and learning achievements assessed

Educational simulations aim to promote different scientific competences:

- The capacity to design small investigation by defining and controlling variables.
- The capacity to elaborate explanation about scientific phenomena presented in simulations.
- The capacity to refine the own ideas on the light of new evidence obtained from investigation.

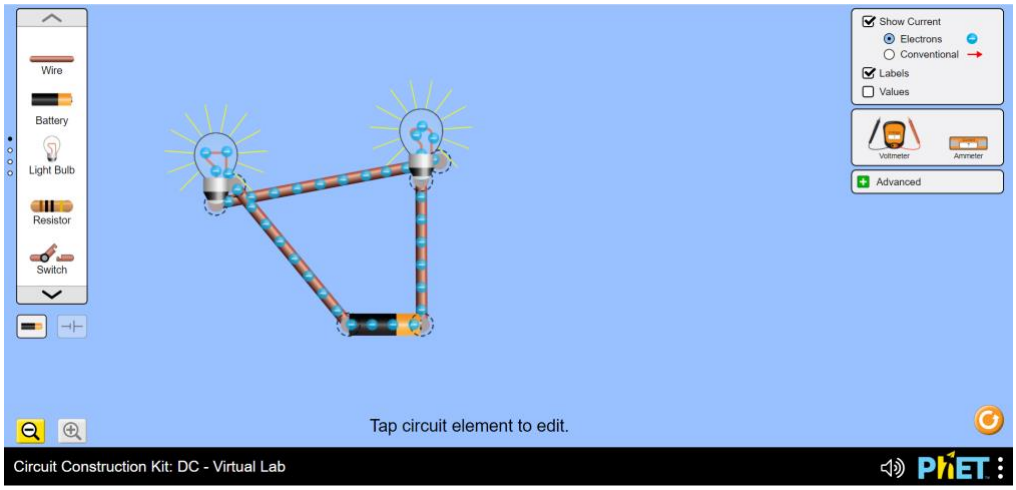
Description of the assessment activity

Within the wide range of activities to be done with simulations, the prediction-based activities allow students to propose a prediction for a specific phenomenon, in terms of "What if…" · These activities are commonly named as POE (Predict, Observe, Explain).

In the case of "Circuit construction kid", teacher can propose to students' different situations by combining bulbs, wires and batteries. This activity can be embedded in different students' day to day life situation, such as the electrical installations of a house or the electrical components of a robot or a toy.

In this activity, students have to predict what do they think is going to happen: the bulb will bright (yes/no), the bulb will bright more / less than in the previous situation. It allows a qualitative approach, since students don't have to calculate neither use numbers, just to reason in terms of "more/less". This activity can also include explanations about why the bulb will bright more / less / no bright in terms of the movement of electrons.

This allow facing students with non-intuitive situations, in which most common misconceptions about the scientific topic arise.

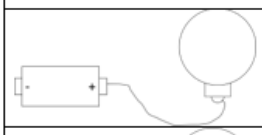
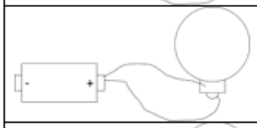
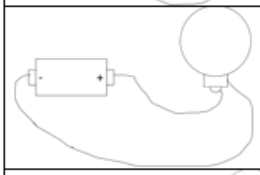
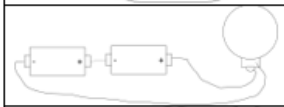


Circuit construction in a Virtual Lab

Assessment strategies and instruments

Prediction-based activities with simulations allow involve students in a formative assessment, since beyond each prediction they make there is a typology of reasoning / a mental model. The prediction forces students to express these mental models, which otherwise could be camouflaged beyond a supposed rigour of calculus and mathematical operations.

2.1. Below we propose different situations. For each one, you must first predict what you think will happen, then test it and compare the result with your prediction:

	My prediction is that the bulb…	Which similarities and differences between my prediction and the obtained results?
		
		
		
		
		

Proposal of an activity for predictions

Assessment criteria & Description of the feedback

As simulation are online and real-time, students can check their prediction whenever they want. Obviously, we should avoid a simplistic approach based on "right or wrong", neither based on "how many answers I guessed", as if it were a betting game.

There are several strategies to involve students reviewing their mental models through a prediction. In this case, students just have to answer, "Which similarities and differences are between the prediction and the obtained results?".

In the specific case of the electric circuits' simulation, the discussion after experimenting with the circuit could be based on the behaviour of electric charges displayed in the simulation.

Type of digital tools used and examples of software

Some of the most world-wide used simulation platforms are:

- https://phet.colorado.edu/ (free without registration)
- https://concord.org/ (free with registration)
- https://www.brainpop.com/ (partially free, partially payment)
- https://wp.labster.com/ (payment, with some free demos)

Level of potential digital transformation

1. **Accessible and available: developed lots of times, easy and known.**

Example of a case

In the 3rd year of teacher education program, students are enrolled in a science education course. In this course, students must learn both the scientific contents addressed to primary school and the pedagogical knowledge to became teachers (so also science teachers).

Scientific references and good practices

Rutten, N., Van Joolingen, W. R. & Van Der Veen, J. T. (2012). The learning effects of computer simulations in science education. *Computers & education*, *58*(1), 136-153. DOI:10.1016/j.compedu.2011.07.017

Wieman, C. E., Adams, W. K., Loeblein, P. & Perkins, K. K. (2010). Teaching physics using PhET simulations. *The Physics Teacher*, *48*(4), 225-227. DOI:10.1119/1.3361987

Activity 3

Roleplay: simulation of a teaching staff meeting at school

Activity 3. Roleplay: simulation of a teaching staff meeting at school

Keywords

Roleplay, oral assessment, dilemma-based learning, thinking skills, communication skills, teamwork skills

Level of digital competence

Intermediate

Level of thinking skills

Applying, Analyzing, Evaluating, Creating

Assessment agents

Self-Assessment and Teachers' assessment

Problem and Justification: Why do we need digital transformation?

Although meetings between teachers in schools are usually face-to-face, digital or hybrid meetings are becoming increasingly common. Moreover, students and teachers are used to videocalls so it would be easy to transform this face-to-face simulation of a teacher meeting into a digital simulation using Meet, Teams, Zoom or any similar tool.

Anyway, what we need is to improve the assessment process, not the simulation. One of the main difficulties for teachers during this assessment is to grade in real-time because they need to be aware to every single intervention (verbal and non-verbal language, discourse, use of strategies or physical resources…) and students usually talk fast and, to maintain the realism of the simulation, you cannot stop them to take notes.

For this reason, we need a digital tool to facilitate the assessment process carried on by the teachers.

Skills and learning achievements assessed

- Solving dilemmas or problems.
- Thinking skills: reflection (see assessment criteria).
- Communication skills: argumentation and expression (see assessment criteria).
- Teamwork.

Description of the assessment activity

Before the activity, the teacher creates groups of approximately 8 students, trying to keep them balanced and heterogeneous. All students receive information about the procedure and the assessment criteria. At the beginning of the activity, the 8 students and the teacher (or teachers, if there are 2) sit around a table. Then, the teacher presents the case or problem to be solved. Students must discuss it aloud for about 25 minutes, simulating a teacher meeting.

Students can use a glossary with definitions and theory they have built during the course, as well as blank paper to write down ideas. They can also ask the teacher for information if they need it. When the time is up, in case that a student feels that they have not been able to provide the reflections or arguments they wanted, they can stay an additional 25 minutes to individually present these ideas in writing. The role play is recorded on audio or video.

Assessment strategies and instruments

During the activity, the teacher has an assessment scale of 4 levels (1-Not achieved, 2-Achieved, 3-Remarkable and 4-Excellent) for each criterion and for each student. With this instrument, the development of each student during the activity is recorded. Some teachers do the assessment scale on paper and others do it digitally (with IDoceo app).

In addition, the activity is recorded in audio or video so that it can be reviewed later.

Assessment criteria

There are 3 assessment criteria:

- Reflection (thinking skills): Contribution of ideas, proposals, conclusions, deductions, connections, extrapolations, analysis ... Pedagogical vision.
- Argumentation: Use of objective, consistent, and coherent arguments. Use of examples. Use of theory to justify practice. Concretion and specificity in the contributions.
- Expression and attitude (communication skills): Correct use of specific technical vocabulary. Adequacy of the language. Assertiveness. Attitude (respecting participation and contributions, non-verbal language, professionalism...).

Description of the feedback

At the end of the activity, the teacher asks the students to evaluate both the assessment activity and their own development (self-assessment). First, they do it orally in group and then individually using a digital form.

Then, if no student stays in the optional written part (which is the most common), the teacher offers instant feedback to the whole group orally. This is not personalized feedback, but general feedback about how they performed.

Finally, a few days after the assessment activity, each student receives their individual feedback from the teacher consisting of one level (from 1 to 4) for each criterion and an overall numerical grade. If any students need more feedback or information, he or she can request an individualized tutoring and review the assessment.

Type of digital tools used and examples of software

- Digital assessment scale (3 criterion and 4 levels for each one). In this activity, the teacher used IDoceo. However, Google or Microsoft Forms, ClassDojo or other similar tools could be used. These tools are used by teachers, but students are aware of the criteria.
- Evaluation form for students (self-assessment). In this case, Google Forms was used, but any similar tool could also be used. The link can be provided through a QR code that students can quickly scan.
- Computer and/or tablet. In some cases, or problems, the teacher can use the computer to show information, images, webs or videos to the students. Also, students can be given a tablet if they want to search for information during the activity.
- Any Learning Management System (LMS), such as Moodle, can be used to send feedback and grades.
- The roleplay activity is recorded on audio or video in order to be able to review it later.

Level of potential digital transformation

2. **Under exploration: the technology exists but it is not easily accessible.**

Example of a case

The activity could be done by a virtual meeting (video call) but what we want to improve is not the assessment activity, but the assessment process carried out by teachers.

For example, it will be useful to have a tool to record, distinguish, and transcript each student speech during the meeting. In this way, a discourse analysis could be done by the teachers (or by the digital tool) to know how long each one has spoken, how many interactions, questions, answers… they perform, if they use or not key words related to the subject, etc.

Scientific references and good practices

Thompson, M., Owho-Ovuakporie, K., Robinson, K., Kim, Y. J., Slama, R., & Reich, J. (2019). Teacher Moments: A digital simulation for preservice teachers to approximate parent–teacher conversations. *Journal of Digital Learning in Teacher Education*, *35*(3), 144-164. DOI: 10.1080/21532974.2019.1587727

Vlachopoulos, D., & Makri, A. (2017). The effect of games and simulations on higher education: a systematic literature review. *International Journal of Educational Technology in Higher Education*, *14*(1), 1-33. DOI: 10.1186/s41239-017-0062-1

Activity 4

Critical incidents in the school placement

Activity 4. Critical incidents in the school placement

Keywords

Communication, management, conflicts, teacher performance, internships, critical incidents

Level of digital competence

Intermediate

Level of thinking skills

Applying, Analyzing, Evaluating

Assessment agents

Self-Assessment, Peer-Assessment, Teacher's Assessment

Problem and Justification: Why do we need digital transformation?

Students that will become teachers should experience or and / or are immersed in different situations that they will face once they are in service teachers. During practicums these situations sometimes do not occur because the interaction with families, other teachers, and other professionals in the school depend on the context and it is completely incidental. Some examples of these experiences could be a conflict with other teachers, intervention in cases of bullying, managing outdoor activities with council representatives and difficult conversations with parents, among others. Therefore, sometimes students during their internships do not have the chance to learn some of the skills related to that and, consequently, they are not being evaluated either.

Technology can offer the possibility to recreate these situations virtually or digitally, so we can make sure they learn the strategies to implement, evaluate how well prepared they are and apply formative assessment with giving them immediate feedback of their performance. Also, they could self-assess their performance and identify their strengths and weaknesses to improve them for their future.

Skills and learning achievements assessed

Some of the competences that we want to assess are:

- Acquiring practical skills on management of school situations

- Act with ethical responsibility and respect for fundamental rights and duties, diversity and democratic values
- Critically analyse personal work and use resources for professional development
- Develop the functions of tutoring and guidance of pupils and their families, attending to the pupils own needs. Understand that a teachers' functions must be perfected and adapted in a lifelong manner to scientific, pedagogical and social changes
- Foster coexistence in and outside of the classroom, resolve problems with discipline and bring about peaceful resolution of conflicts

Description of the assessment activity

Nowadays, these situations might be faced in Practicums. Therefore, the assessment activity related to them is part of the global assessment of their practicum. Students spend several weeks in an school placement. During their time there, internship mentors and internship tutors who tutor them evaluate their performance, attitudes and knowledge, and university teachers assess their planning and reports. Also, the students self-assess their practicum. They vary according to the practicum they are developing; it goes from 2 weeks to a whole year.

Assessment strategies and instruments

There are different instruments applied in the different practicums they develop. They use rubrics, checklists, observation grids, field diaries, portfolios and reports, among others. Students develop a portfolio or a report and, when self-assessment is involved, they usually have at least a checklist. Tutors from schools assess the preservice teachers by answering a set of questions related to the performance of the student. Finally, university teachers assess with a rubric or a checklist the reports and e-portfolios, as well as the production, if there's some of them.

Assessment criteria

The assessment criteria to evaluate the correct interaction are:

- Understanding the teaching profession: functions, strategies, techniques and professional attitudes.
- Understanding of coexistence, approach and strategies for conflict resolution.
- Adequate proposal of solutions/intervention after the observation and analysis of everyday situations in the center of practice and in the classroom.
- Critical reflection and proposals for improvement of the proposal / intervention.
- Self-analysis and self-regulation of own practice and learning processes.

Description of the feedback

The usual feedback in these activities is a combination of different types. All agents are usually involved (preservice teachers, school tutors and university teachers) and they receive feedback on their performance on the spot (when they are doing something good or bad) and afterwards, in the reports and rubrics. Also, the feedback received is oral, written and mixed.

Type of digital tools used and examples of software

Currently, the digital tools used are mainly collaborative and creative tools for developing e-portfolios. Some examples of collaborative tools used are Padlet and Google Drive; and creative tools are Blogger or Wordpress.

Levels of potential digital transformation

1. **Accessible and available: developed lots of times, easy and known.**
   To digitally transform this interaction, we could choose different options that require different level of digital competencies:
   - *A) Transform situations as question-answer type and use an app such as Flipgrid. This option offers immediate feedback and it could be used as self-assessment.*
   - *B) Create videos of role playing and use EdPuzzle to make them choose the best option to face some of the interactions that could occur in a school. This option offers immediate feedback and it could be used as assessment from teachers. Another option would be open questions instead of multiple choice, in this case, a revision from the teacher is needed.*
   - *C) Make them create the videos of role playing the interactions and peer-assess their actions. In this case, teachers could assess their role playing and the peer-assessment.*
   - *D) Create a game with the different situations similar to "choose your own adventure" with a form such as TypeForm. Creating different paths depending on their answer. This would allow self-assessment and assessment from the teachers.*

2. **Under exploration: the technology exists but it is not easily accessible.**
   Create a game with the different situations similar to "choose your own adventure" using a game platform such as Twine, Quest, Squiffy, Ren'Py.
   Create a chatbot to, for instance, make the student have a conversation with a parent to address an issue. Students can reflect afterwards their choices and university or school teachers can revise the conversation afterwards and assess their performance. (https://www.giosg.com/blog/chatbot-builders).

3. **Emerging / Under development: the technology is not available yet, but there are conversations about it and/or it is a work in progress.**
   Create a simulation in an immersive platform such as Open Simulator (http://opensimulator.org/wiki/Main_Page) to make a student react when facing an issue. Students can reflect afterwards their performance and university or school teachers can check their performance during the simulation and give immediate feedback.

Example of a case

Include the three levels on three different practicums to go from checking the knowledge of the practical skill (level 1 options A, B and D) to perform and assess with technology (level 1 option C) and simulate the interactions (level 2 and level 3).

Scientific references and good practices

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Activity 5

Design of learning spaces in schools through immersive digital tools

Activity 5. Design of learning spaces in schools through immersive digital tools

Keywords

Pre-service teachers, primary education, early childhood education, innovative learning environments, design

Level of digital competence

Intermediate

Level of thinking skills

Analyzing, Understanding, Evaluating, Creating

Assessment agents

Peer-Assessment, Teacher's Assessment

Problem and Justification: Why do we need digital transformation?

The design of the learning spaces is a key element to promote not only students learning, but to facilitate the activity of the teacher as a facilitator of knowledge. For this reason, preservice teachers should be prepared to identify and organize the main spaces at the school that might be useful to promote students learning. They should also be able to identify not only which are the best resources and materials that should be placed in these spaces, but to know how to organize them in order to increase students' autonomy in their learning process as well as to promote collaborative and cooperative learning.

Following the OCDE (2017), the seven principles that should be taken in consideration to create an Innovative Learning Environment (ILE) are:

1. ILE should consider people as the centre of the activity, for this reason ILE promotes active engagement of learners and develops the comprehension of their own learning activity.
2. ILE should consider the social nature of learning, for this reason it should promote active and well-organized learning and cooperation among learners.
3. The professionals of learning in ILE are receptive to the learners' motivations and consider the importance of emotions to their achievements.

4. ILE is sensitive to the learners' individual characteristics, including their previous knowledge.
5. ILE should promote activities that become a challenge for the learners, without excessive workload.
6. ILE works with clear expectations and implement assessment activities consistent with the expectations; the emphasis should be placed on the training actions to support individuals learning.
7. ILE should promote the horizontal interconnexion between knowledge areas and subjects, for all the community and the world in general.

Digital Technologies might provide tools and resources to simulate school spaces that preservice teachers can organize according to the variables previously facilitated by the teacher, or the tool itself. So that, through and online platform the teacher will be able to provide the characteristics of the spaces, and to configure different types of learners groups that will act as variables that might be taken in consideration during the design of the space process.

The teacher will be able to follow the activity of the students through the tool, providing feedback to the decisions made by preservice teachers, and will also be able to e-assess the students through it. Furthermore, it will be easy to involve peers in the feedback and assessment processes, since the digital tool might facilitate to access to them in order to check what other students are doing.

Skills and learning achievements assessed

Some of the competences already existing in Primary Education Syllabus that we can assess through this activity are:

- Analysing the practice of teaching and the institutional conditions that frame it.
- Design and regulate learning spaces in contexts of diversity that take into account gender equality, equity and respect for human rights and observe the values of public education.
- Recognise and evaluate the social reality and the interrelation of factors involved as a necessary anticipation of action
- Know and apply innovative experiences in primary education.
- Incorporate information and communications technology to learn, communicate and share in educational contexts.
- Promote cooperative work and individual work and effort

Description of the assessment activity

Currently, students are able to develop these activities during their stages at the schools during the subjects of practicum, as well as in a simulation space in the school of education at UAB.

With this activity they will be able to design the space through digital tools, with no need to access the physical context.

The activity should be done individually since the preservice teacher should be able to demonstrate by himself its capabilities to design the learning space as it was in a real school. Through the feedback provided by their peers and the teacher it would be able to add changes or to focus the attention on some aspects, as it could happen in a real school.

Since during the activity some feedback will be provided, the activity requires some weeks to be implemented. And approximation to the steps to implement the activity could be:

1. Teacher introduces the digital tool(s) to the preservice teachers and explain them which is the main objective of the activity and how can they interact with the platform (a short guidelines/instructions can be provided too).
2. Teacher designs the general structure of the space, and select which are the constrains (learners characteristics, profile of the families, characteristics of the context, profile of the current teachers, expected learning outcomes, etc.) that preservice teachers will have to consider designing the space. Furthermore, the teacher can decide which kind of resources will be available in the tool to design the space, since in real schools the resources are limited.
3. Preservice teachers get used to the platform and start with the analysis of constrains and the available resources. During this phase the student should complete a report where it highlights:
    a. Which are the main constrains of the context?
    b. Which are the main resources available?
    c. How can it be imaginative with the resources available?
4. Preservice teachers start with the space design, considering the constrains and the resources available. They also provide a report where they justify, according to the constrains and the resources available, the decisions they are making while they are designing the space.
5. Teacher and peers will provide feedback to each student considering the space designed, the variables involved and the assessment criteria.
6. Preservice teachers will introduce changes to the space design according to the feedback received by their peers and the teacher. They should also adapt their report according to the changes they are introducing. They should also decide not to consider some of the feedback received. In that case, they should justify why they are not considering it. Once this work is done, they submit it to the teacher, or they can close the application.
7. Teacher will assess the final result and send feedback to the preservice teachers.

Assessment strategies and instruments

There are different strategies to be implemented to assess the implementation of these activity. Since preservice teachers will be working on the activity alone, a rubric would be useful to give

them some information about how they will be assessed. Furthermore, these rubrics will be useful during the feedback and peer-feedback that the teacher and peers will provide in the middle of the activity development.

Furthermore, the report provided by the preservice teacher where they will provide information about the decisions, they have made during the design of the space will be useful, since it will allow the teacher to know the decision-making process and how the constrains and the available resources have been considered.

Assessment criteria

The main assessment criteria are related to the competences to be performed:

- Analysis of the institutional constrains and resources available.
    - Identification of the main constrains of the institution.
    - Identification of the main resources available in the space.
    - Identification of the leaders of the school needs and expectations.
    - Summary of the main information through a scheme or DAFO
- Design of the space considering the characteristics of the learners and its diversity, as well as the needs expressed by the future users.
- Demonstrate the capacity to innovate and think "out of the box" using the resources available.
    - Use of resources in a different way than expected but answering the needs of the users.
- Integrate digital technologies in the space in order to facilitate learners' autonomy, cooperation, etc.

Description of the feedback

Feedback should involve not only teacher but also preservice teachers' peers. The feedback should be made oral, written or mixt. The teacher and peers will be able to provide feedback not only at the end of the activity, but during its development. The feedback will be given asynchronous, through a tool like Corubric.

Type of digital tools used and examples of software

- The presentation of the activity, the tool to be used, etc… could be done through videoconferencing tools (Teams, Zoom, Google Meet, etc..). Some presentation tools like Canva, Powerpoint, etc… could be used during the presentation.
- The main activity (design of the educational space) could be done using a tool such as Sketchup, where students can find resources to fill the empty space.
- The information regarding the characteristics of the space in order to answer the users' needs could be given to the students with a tool like Secondlife, where they can find

people (students, teachers, families, etc..) with different needs and expectations regarding the final space.

- The feedback provided by peers and the teacher could be delivered using Corubric or similar tools.
- The delivery of the report that each preservice student should provide could be done using a Learning Management System (LMS) such as Moodle, Classroom, Teams or any similar tool.
- The assessment of the teacher could be done written or oral feedback using the LMS' tools such as tasks.

Levels of potential digital transformation

The digital transformation is in the design of the main activity, since the tools used for the feedback (from peers and teachers), assessment and delivery systems can be done using existing tools known by teachers. The main activity can be developed at two different levels:

1. **Accessible and available: developed lots of times, easy and known.**
   Using a tool like Sketchup app. This application allows the user to put furniture and other elements in an empty space, which can be configured previously with the characteristics of the architectural space.

2. **Under exploration: the technology exists but it is not easily accessible.**
   Using a tool like Second life, pre-service teachers can navigate in the area, and identify stakeholders linked with the space they should design. These stakeholders might be other teachers, families, students or other professionals. In that case, students should talk/ask questions to the people they find. The questions and answers should be the basis to create the new space, since each stakeholder will give them information about the characteristics of the students, how the curricula is organised, other resources and spaces available in the school, other activities that might be organised in the school in collaboration with other schools and institutions, projects where the school is participating, etc.

Scientific references and good practices

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Activity 6

The Debate on Sustainable Development Goals (SDGs)

Activity 6. The Debate on Sustainable Development Goals (SDGs)

Keywords

SDGs, sustainable development, debate, critical thinking, structuring and mapping arguments

Level of digital competence

Beginner

Level of thinking skills

Remembering, Understanding, Analyzing, Evaluating, Creating

Assessment agents

Self-assessment, peer-assessment, Teacher's Assessment

Problem and Justification: Why do we need digital transformation?

Sustainable Development Goals (SDGs) are 17 goals and 169 objectives, which 193 governments – members of the UN - agreed to be reached by 2030. These goals target to eradicate poverty and inequality, promote sustainable development, good governance and sustaining peace, and also address climate change issues.

Debate is recognized as one of the top activities for increasing learning outcomes over time, a simple activity that can help teachers introduce difficult topics and get students collaborating, communicating, being creative and thinking critically about issues and problems in the world. Using debate, the teacher can engage students in thinking critically about the Sustainable Development Goals and help them work towards solving real problems that affect their world. Moreover, this gets them actively engaging in their own learning.

Just as other technologies have helped to enliven survey research (e.g., the development of online survey platforms like QuestionPro, which has a rich suite of research tools) the availability of new technologies can help jump start innovations in teaching and learning. On the other hand, whilst many of us have been readjusting to working in isolation due to COVID-19, the entire digital landscape of education has transformed itself.

Thus, in these times, choosing a digital tool can not only give every student a voice and enhance students learning and motivation, but there's no talking over each other and students can have the space to explore arguments at their own pace, working asynchronously. Moreover, using a

collaborative platform encourages students to work together to find the best way to express each idea.

Skills and learning achievements assessed

- To allow students to engage in a critical manner and develop a better understanding about SDGs.
- To encourage / promote critical debate skills about the SDGs, so that students are aware of the SDGs, have critically evaluated them in their own minds and have drawn their own conclusions.
- To develop debating, speaking, listening and literacy skills through debate training and competitions that will ultimately improve self-esteem, collaboration, communication, logical thinking, team-work, decision-making skills, and academic achievement. Boosts cognitive skills, meta-cognitive skills, socio-emotional skills, research skills, active listening, knowledge acquisition, argumentation and presentation skills.

Description of the assessment activity Description of the assessment activity

Preparation in Advance of the Debate. This activity requires students to have completed preparation in advance of the debate. E.g., to review the SDGs.

The teacher divides the class into 6 groups using the chart below. Each group will represent a different viewpoint on the debate.

Table 2. Chart to develop a debate activity

	Pros (the Global Goals are a waste of time - For)	**Cons (the Global Goals are not a waste of time - Against)**
LOCAL scale viewpoint	Group 1	Group 2
NATIONAL scale viewpoint	Group 3	Group 4
GLOBAL scale viewpoint	Group 5	Group 6

The teacher asks students to prepare the case for their argument **as a group**. Each group will prepare to present one key point and **select a speaker**, to support his group's argument for approximately 1 minute. The group members should seek evidence (data, quotations, etc.) to emphasize their point. Teacher will provide ideas (links, documents, guides etc.) for helping students prepare for the debate.

The SDGs Debate. The teacher has to prepare the setting up for the debate (changing the classroom furniture, providing bottles of water, sheets and charts printed with the 17 SDGs etc.).

The teacher introduces the motion and chairs the debate. The teacher tells the students to listen carefully to all arguments on both sides of the debate as they will be asked about their opinions later. The audience members should make notes of the points they find most convincing as they listen.

After the debate there will be 5 mins to allow the students the opportunity to consider what they have learned after both sides have had a chance to share their findings.

Assessment strategies and instruments

- Teacher Observation
- Draft challenge responses from students
- Case study presentations

Teachers should consider focusing their assessment on skills beyond the pros and cons contributions. For instance, teachers can encourage students to get active in the comments nested within each pro or con. It's here that students discuss individual contributions or provide sources to further establish or debunk claims. Focusing on this layer of detail will help students see how claims must be backed up -- and that moderation is an important part of healthy online discussion. Teachers can use formative or summative assessment. Teachers could develop a set of rubrics that look at things like:

- Students' use of evidence and examples
- Whether comments build on those of other people
- Whether responses to other participants address their arguments directly

Assessment criteria

To assess the impact of the debate exercise we can use a rubric such one of Stanford debate rubric, based on assessment criteria such as organization and clarity, use of arguments, use of examples and facts, use of rebuttal and presentation style. See details: https://web.stanford.edu/class/cs326/classroom_debate_rubric.pdf.

Description of the feedback

In general, there are three ways that classroom debates can be evaluated.

- Students evaluate their own debates.
- Students evaluate each other's debates.
- The teacher evaluates the debates/each student's performance in the debate.

However, in all events, evaluation is based on a certain set of criteria (see above). For class purposes content and style are usually the most relevant ones. In our case, the feedback is oral and synchronous.

Type of digital tools used and examples of software

With Kialo-Edu, the teacher can have engaging and well-structured classroom discussions with students about any given topic. Students can: a) apply their knowledge through active

participation and b) grasp the complexity of the topic being discussed. It also provides moderators with a set of tools that enable collaboration. These tools shape the ways moderators interact with each other. For example, moderators can "flag" problematic claims for a finite number of predetermined reasons, they can provide feedback to other participants, and they can discuss problematic claims with other moderators and writers via two separate chat tools.

Levels of potential digital transformation

1. **Accessible and available: developed lots of times, easy and known.**

Kialo Edu is a highly useful tool for helping students develop skills essential for civic participation. Students must use critical thinking skills to evaluate information and social and emotional skills to understand different points of view. Students also must back up claims with reasonable evidence to convince others involved in the debate of the veracity of the claim. Teachers can also easily create discussions that extend beyond traditional arguments, using the platform for fun conversation or even as an outlining tool for essays.

E.g.: Assign students to write a Kialo-Edu discussion instead of an essay - or use Kialo-Edu discussions to outline larger writing projects. Kialo's argument-tree structure leads students to consider counter-arguments, develop a logical outline of their argument, and visualize how their ideas fit together".

While almost every LMS offers discussion forums, Kialo Edu's interface is far better-suited to organizing and assessing ongoing discussions of contentious issues. The site creates an environment for students to share ideas, validate sound arguments, and really "listen" to each other -- something lacking in a lot of social discourse online. The visualization and nesting of claims also clearly models how arguments are built, and the clear tracking and filtering of individual students' contributions makes it easy for teachers to get a bird's-eye view of the full spectrum of student participation.

On the other hand, Kialo-Edu.com requires very minimal preparation and planning that fosters a variety of useful participatory skills. More organized than a discussion board. Easy to filter individual student contributions.

Example of a case

- Discuss and Debate Sustainability - https://www.kialo.com/tags/Sustainability
- Climate change – myth or reality? - https://www.kialo-edu.com/p/7002eca9-3ef8-4464-9769-2f5099d7b50f/1090 (In Romanian)

While no one grading rubric can apply to all assignments on Kialo-Edu - and adaptations will always be necessary depending on the subject and background of students – we list below a sample grading rubric below as a reference.

Table 3. Example of a rubric for assessing a debate activity.

Learning Outcome	Advanced Proficiency	Baseline Proficiency	Emergent	Not Proficient
Clarity of Expression	Claims are on-topic and explicitly connected, the connection to parent claims is clearly communicated in a way that facilitates comprehension.	Claims are on-topic and explicitly stated.	Claims are mostly on-topic, but the main point is often implicit.	Claims are not clearly on-topic; it is difficult to determine the main point of claims.
Engagement with Material	Source material from class, as well as outside material when appropriate, is explicitly woven into the discussion at multiple levels. Additional sources are used to support claims without redundancy.	Source material from class is used consistently throughout the discussion, although sometimes implicitly. All major branches of a discussion have some support but there may be some redundancy. Claims at lower levels of a discussion may be less well sourced.	Source material is referenced, but generally only at the higher levels of a discussion. Some branches of a discussion may not have source material referenced. Ideas and concepts from source material may be mentioned, but connection to specific source materials not clearly stated, relying instead on context to determine relevance.	Source material is not directly engaged with at all, or only engaged with at points where it is irrelevant. There may be some implicit references to the source material, but the context provides insufficient background to clarify this reference.
Mastery of Material	Usage of source material is accurate and insightful, demonstrating consistent knowledge of meaning and nuance of source material.	Usage of source material is accurate but may fail to go beyond redescribing ideas and information contained in text. There may be small inaccuracies in usage of source material, but not in a way that seriously impedes demonstration of comprehension.	Usage of source material is mostly accurate. Ideas are presented in ways that are simplistic or that fail to go beyond restatement. There may be a few significant inaccuracies, but they do not seriously change the overall significance of material	Source material is not directly used at all or is used in a way that demonstrates serious misunderstandings.
Ability to Construct a Thesis	Thesis is clearly and concisely stated. Top level claims provide clear, comprehensive and concise coverage of main strategies to defend or attack thesis.	Thesis is clearly stated. Top level claims identify main strategies to defend or attack the thesis. While there may be some gaps in the comprehensive nature of these strategies, claims presented cover sufficient ground to either accept or reject the thesis.	Thesis is stated in a way that is generally accurate but may not be clear or precise. The topic is stated, but the argument is not made clear by the thesis. Top level claims for the most part identify strategies to defend or attack the thesis but do so in a noncomprehensive way. Connection between top-level claims and the thesis is only present implicitly, and not clearly communicated.	What is presented as the thesis does not qualify as a thesis. The general topic is either not identified or identified too vaguely to convey the topic being approached. There is no explicit relation between top-level claims and the thesis.
Logical Structure of Kialo Claims	Arguments are clearly organized, and organization is explicitly communicated. Pros, cons and comments at all levels follow from a thesis claim. Claims become progressively more specific and detailed moving down the tree from the thesis. Arguments are easy to understand and respond to at every location.	Arguments are well organized, particularly at top levels. Specific claims are brought in at the relevant thread, and grouped together with related claims.	Arguments are somewhat organized but contain some problems that impede clarity. These may include: some duplicate claims, posts that contain more than one claim, or claims that don't clearly fit within the Pro/Con structure.	The discussion contains claims, but the argument requires additional work to locate and understand. Claims are often too long, misplaced, or do not follow from a central thesis.

Constructive Interaction	Substantial contributions provide feedback, comments, or sub-claims to promote further discussion. This work is done in such a way as to expand upon and clarify the texts and sources used in the discussion. Interactions include a mixture of questions and suggestions. Suggestions are made to facilitate the quality of the discussion as a whole.	Contributions added timely, informative, and respectful comments to the work of other contributors. There are a mixture of questions and clarifications.	Contributions demonstrate a willingness to help others but sometimes make unclear or untimely comments. There is a greater emphasis on "reactive" contributions (responding to someone else) then on proactive contributions.	Contributions either fail to respond to comments or respond in such a way that hinders further discussion.
Ability to Present Both Sides	There are meaningful claims and comments that have been added to both sides of the discussion. Contributions have demonstrated a nuanced understanding of the negatives and positives on both sides of the discussion. The strongest versions of claims on both sides are presented, irrespective of the student's own position.	There are claims on both the pro and con sides that are relevant to the discussion. Straw man arguments are avoided.	The student has attempted to add claims on both sides of the discussion, but some may be unclear or unrelated. Positions on one side may sometimes be overly simplistic straw man arguments.	The student has either failed to add claims or comments on one side of the discussion, or has added claims that are not relevant. One side or the other may be presented in an extreme way, with clear straw man arguments.

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Activity 7

Media Competences for Digital Citizenship

Activity 7. Media Competences for Digital Citizenship

Keywords

Digital citizenship, online risks and opportunities, digital culture, fake news and disinformation, media content and effects, media literacy

Level of digital competence

Advanced

Level of thinking skills

Remembering, Understanding, Applying, Analyzing, Evaluating, Creating

Assessment agents

Peer-Assessment, Teacher's Assessment

Problem and Justification: Why do we need digital transformation?

Recent studies and research reports have underlined the raise of the media use and online time spent during the last period (and more accentuated by the pandemic restrictions) by the youth and adult population. Along with the online immersive lives, besides benefits and opportunities, different approaches and challenges have occurred: the use of the internet in a safe and creative manner, online behaviour: networking/ social relations, active participation to the communities online life, information search, leisure and professional/ educational time. The internet has been changing our life and society and transform it in a mediatized society, not just for the iGen generation, but for all (Millenials, Gen X, Baby Boomers etc.). Even if the process started 20 years ago, the contemporary context stressed out more than ever the need for forming, assessing and practising media competence and digital skills in order to: critical understand and evaluate media (in terms of content, effects and practices), to actively participate within society (at all levels) and to create/ produce media content with an added value for ourselves and society.

Thus, in line with the need to develop the digital skills at a more advance level, as pointed in these strategic policy documents, the proposed activity addresses the aim to enable the future teacher with a digital competence at more advance level, trans-curricular, so she/he can guide not only the students, but the parents, and other relevant stakeholders to navigate in the digital world and society.

Furthermore, the teacher needs for this so called meta-competence, as enlarged general culture and of his/her specialization culture, as all teachers preparing to teach social sciences, education for democratic citizenship, social education, etc. (see all subjects of the curricular area Man and society, as foreseen in the curriculum for primary and secondary school) need to master the Information and Data Literacy & Communication and Collaboration, as foreseen in the DigiComp Framework for teachers (EU, 2017).

Skills and learning achievements assessed

The specific pinpointed competences that are to be developed are to be found in the following media dimensions (DeBenedittis, 2003): Access, Analyse, Evaluate, Produce.

- *Dimension of the Media Analysis / Specific competences:*
  - To analyse the media context of the media message
  - To draw up media content interpretative tests and analysis criteria
- *Dimension of the Media Accessing /Specific competences:*
  - To identify optimal and legitimate information sources depending on personal and professional needs
  - To decode and interpret perturbing, pathological message contents
  - To use communication and information means in a diversified way
- *Dimension of the Media Assessing / Specific competences:*
  - To establish evaluation objectives and criteria in view of observing efficient and authentic information and communication principles
  - To use evaluation techniques and tools, specific to the educational process in the context of communication and mass media education
  - To evaluate the educational approach in view of identifying the media and technological informational requisite
- *Dimension of the Media Production / Specific competences:*
  - To use the new and the traditional media creatively and ingeniously in the instructional educational process
  - To conceive digital and media-oriented didactic materials and strategies
  - To exercise action schemes to acquire/polish practical skills

Description of the assessment activity

The description of the assessment activity is described in the following tables (Table 4, 5, 6 and 7).

Table 4. Dimensions of the Media Analysis

Activities	*Achieving modalities*	*Scope*
1. Selecting ways and means	By identifying media sources, necessary and concordant to individual needs.	Institutional setting – classes, homework; Informal setting – entertainment.
2. Organising didactic content	By using active learning methods based on critical thinking; By using media resources as didactic-material resources.	Institutional setting: Classes; applicative activities; Non-formal setting: Media circles, laboratories.
3. Promoting sensible media consumption	By monitoring and evaluating age-specific media programmes; By positive usage of programmes with educational content; By analysing the dysfunctions noticed between media content and media message.	Institutional setting: Classes; applicative activities; Institutional partnerships between schools and media institutions.

Table 5. Dimension of the Media Accessing

Activities	*Achieving modalities*	*Scope*
1. Supporting/guiding information search and selection	By tutoring in view of identifying the proper media sources in concordance with personal needs (time, information volume, degree of difficulty, etc.); By establishing the optimal necessary information as a ratio between requirements and quantity at hand; By accessing various sources for documentation; By applying media information and technologies, creatively in an original way in solving the task.	Institutional setting: Work environment; The relationship with media; Class of students; Family environment.
2. Ensuring information exchange and access to various media	By technical means and by developing the material resources according to the personal training needs and requirements (educational software); By ensuring optimal communication channels.	Formal and non-formal setting
3. Coordinating media communication process	By ensuring an efficient feed-back following media information selection activities; By developing efficiently and rapidly syntheses, analyses on information exchanges (discussions, debates, role games,…) By encouraging information sources legitimacy identification and extracting useful and adequate information.	Instructional educational process

Table 6. Dimension of the Media Assessing

Activities	*Achieving modalities*	*Scope*
1. Monitoring/evaluating the instructional educational process	By assessing evaluation methods and criteria in view of integrating media in the instructional educational process; By monitoring curricular and extracurricular activities; By publicizing examples of good practices.	Instructional educational process
2. Assessing training needs	By identifying dysfunctions and the respective causes when using information and communication techniques, of media content as well; By implementing correction actions; By monitoring the impact of training; By correlating the identified training needs with training programmes.	Institutional setting: Non-formal setting: Media circles, laboratories.
3. Assessing general media evaluation models	By encouraging and developing critical spirit; By achieving common projects: school-family-community.	Instructional educational process Informal setting

Table 7. Dimension of the Media Production

Activities	*Achieving modalities*	*Scope*
1. Integrating ICT and media	By using media in different domains and curricular areas (digital or analogue); By encouraging sensible media consumption concordant with the needs of information, entertainment, communication, etc.	Instructional educational process Informal education.
2. Original conception	By conceiving and using media material as teaching props and auxiliary didactic materials; By identifying media elaboration mechanisms, media conceiving modalities.	Instructional educational process Non-formal setting: Media circles, laboratories.
3. Encouraging critical thinking and creative content	By expressing authentic emotions and values in conceiving, creating personal media materials (web page, blog, magazine, film, etc.); By activities of educating critical spirit and positive use of original media materials.	Non-formal setting: Media circles, laboratories. Instructional educational process Informal education.

Assessment strategies and instruments

Exercises and group projects.

Assessment criteria

Individual project: Analysis of 3 case studies, at choice, according to the model discussed at the seminar

- The project will be uploaded in pdf format in the G-Suite Classroom and present on the date set by the teacher responsible for the seminar
- The project represents 5 points from the final grade
- The following will be presented and argued: selection of the chosen case study, analysis and role of communication techniques, impact analysis, deconstruction of the message and media content, means and indicators of verification
- All information mentioned in the project comes from credible sources
- The project will comply with the writing and grammar rules of the Romanian language.

Description of the feedback

Evaluation/Assessment (mixed) 3-2-1

- 3 concepts that can be named and were interesting for them
- 2 ideas that they would like to learn more afterwards
- 1 skill that they master after the graduation of the course

Type of digital tools used and examples of software

- Collaborative – G Suite
- Slido, Mentimeter, Polleverywhere or any tool that offers live polls, Q&A, quizzes and word clouds, to engage students, capture their views and make everyone feel connected.

Levels of potential digital transformation

1. **Accessible and available: developed lots of times, easy and known.**
   This level corresponds to the activity presented in the previous sections.
2. **Under exploration: the technology exists but it is not easily accessible.**
   An advanced solution to the need of practicing giving a class online, could be to incorporate a chatbot into the LMS or learning environment. The chatbot should have been nourished with typical questions and comments that students could make and that could be challenging for those students simulating running a class.

Scientific references and good practices

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Activity 8

Microteaching in Practicum

Activity 8. Microteaching in Practicum

Keywords

360º peer-feedback, practicum, mentorship management, microteaching

Level of digital competence

Intermediate

Level of thinking skills

Remembering, Understanding, Applying, Analyzing, Evaluating, Creating

Assessment agents

Self-Assessment, Peer-Assessment, Teacher's Assessment

Problem and Justification: Why do we need digital transformation?

The faculty tutor – student – school mentor relationship is difficult to manage given that at university level, a coordinator has to deal with large groups of students distributed to numerous schools and preschool institutions. While different universities and higher education institutions have implemented 360-degree assessments to varying levels of success, some teachers and teachers reject the idea based on the premise that the evaluations shift the power structure, putting their livelihood in the hands of their students. In contrast, others accept the assessment as a valuable tool for personal development and helping create educational environments that are conducive to learning. Peer to peer feedback also contributes to learning practicum and needs digital transformation in order to be more effective and relevant, as a part of the larger 360º feedback, to be performed mainly while analysing a lesson.

However, digital solutions would facilitate the relationship between the three actors involved in the areas related to guidance, feedback, assessment, control and monitoring, both in designing and running a lesson.

Skills and learning achievements assessed

- Practical competencies in analysing the activities carried out by the school mentor / peer / faculty tutor;
- Reflection and the ability of giving, receiving and integrating proper and real feedback;
- Communication and collaboration skills.

Description of the assessment activity

Before the activity, the faculty tutor asks the students who are guided by the same tutor from the school to carry out a didactic activity together. The project of the activity will be verified both by the faculty tutor and by the practice tutor.

The activity will be held online, so it must combine different teaching strategies. It also has to be interactive and have synchronous and asynchronous parts. For the asynchronous parts, the content must be done in a manner that students can accessed it even after the end of the activity. Therefore, it will be requested to make some previously recorded materials that will be designed as sequences of the lesson.

During the activity, peers will collaborate and will play students role. They will also reflect on each part of the lesson so that they could give feedback at the end. The simulated activity for one group will last for 30 minutes. After it, 15 minutes will be dedicated to feedback and assessment. In this sequence it will used shared assessment: firstly, it will be a self-assessment, in which the student assesses their planned and reached output or learning outcomes; in the second step, it will be a peer assessment, where students evaluate their peer' output, from two perspectives: as students and as critical friends; and thirdly, it will be co-assessment, where school mentor, faculty tutor and students jointly assess the output or learning outcomes.

Assessment strategies and instruments

During the activity, both the faculty tutor and the school mentor will have an evaluation scale of the lesson and will mark the level of achievement of each type of activity, the way of interaction with the students, the clarity and coherence of the activity, the level of achievement of the proposed objectives. Peers will also have the opportunity to assess each activity according to a same scale after they give oral and written short feedback, using Mentimeter or Socrative.

Assessment criteria

The school mentor, the faculty tutor and the peers will give written feedback in a digital way. The following criteria will be taken into account:

The preparation of the activity:

- the relevance of the subject for achieving the proposed competencies;
- formulating operational objectives;
- optimal selection of strategies;
- the quality of the teaching materials.

The implementation of the activity:

- speech quality
- time framing
- achieving the proposed objectives
- other aspects related to the level of implication of the students or the attractively of the activities proposed.

Description of the feedback

360 peer-feedback - is a revolutionary method of offering consistent feedback, support, and growth opportunities. Also known as the 360-degree review, this system is a holistic upgrade from conventional L&D approaches and annual performance analyses in organizations.

Type of digital tools used and examples of software

- *Screencasting tool*: Loom – to create online lessons with the possibility of pre-teaching registration
- *Eportofolios*: Weebly, Google Site, Adobe Spark – a website builder to keep all the materials, lessons that students are creating
- *Creating and delivering micro-learning - 7tap*.com
- *Virtual panel*: Padlet, Miro or Jamboard– to create collections of useful materials and samples of good practices in the field of interest
- *Digital feedback*: Mentimeter, Slido, Socrative, Vocaroo or Mote for vocal feedback
- *Data analysis tool: questionpro,* surveymonkey or typeform
- *Web-conference*: Zoom or Google Meet, MS Teams
- *LMS*: G-Suite, Moodle, msteams etc.

As an alternative, it can be used PeerGrade software, an online platform specially designed to facilitate peer feedback sessions with students.

Level of potential digital transformation

1. **Accessible and available: developed lots of times, easy and known.**

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Activity 9

Digital citizenship as interdisciplinary competence

Activity 9. Digital citizenship as interdisciplinary competence

Keywords

Digital citizen & citizenship, rights, responsibilities, communities

Level of digital competence

Beginner

Level of thinking skills

Understanding, Applying, Analyzing, Evaluating

Assessment agents

Self-Assessment, Teacher's Assessment

Problem and Justification: Why do we need digital transformation?

Digital citizenship is a topic that is essential in the modern world. We are trending towards a society where more people are more connected, and as such, it's vital that we are all aware of our responsibilities and able to navigate our own digital lives. In terms of defining digital citizenship, there are different approaches that could be summarized into the ability to use digital technology and media in safe, responsible and effective ways.

Digital citizenship aims to teach everyone (not just children) what technology users must understand in order to use digital technologies effectively and appropriately. The challenge for educators is to move beyond thinking of IT as a tool, or "IT-enabled education platforms". Instead, they need to think about how to nurture students' ability and confidence to excel both online and offline in a world where digital media is ubiquitous.

But digital citizenship has often been overlooked by educators, parents and local communities. This is in spite of the fact it is fundamental to a person's ability to use technology and live in the digital world, a need which arises from a very young age and continues through the whole life. A child should start learning digital citizenship as early as possible, ideally when one starts actively using games, social media or any digital device.

Ultimately, national educational policy makers need to understand the importance of digital citizenship as the foundation of a digital society. National educators' leaders should make it a priority to implement digital citizenship programs as part of an overall digital society framework and curriculum.

Moreover, individuals should initiate digital citizenship education in their own sphere of influence: parents in their homes, teachers in their classes, and leaders in their communities.

There is no need to wait. In fact, there is no time to wait. Children are already immersed in the digital world and are influencing what that world will look like tomorrow.

More than that, digital citizenship is an evolving concept. This continuous urge is underlined worldwide, through different continents, different level of education (and beyond them) and through different (international) organisations, institutions and/or educational providers and stakeholders, as we can see on scientific literature, reports and/or (local, national and international) initiatives (OECD's Better Life Initiative, the 17 UN Sustainable Development Goals (UN SDGs), Coalition for Digital Intelligence (CDI) etc.).

Thus, in line with the need to develop the digital skills at a more advance level, as pointed in these strategic policy documents, the proposed activity addresses the aim to enable the future teacher with a digital competence at more advance level, trans-curricular, so she/he can guide not only the students, but the parents, and other relevant stakeholders to navigate in the digital world and society.

Furthermore, the teacher needs for this so called meta-competence, as enlarged general culture and of his/her specialization culture, as all teachers preparing to teach social sciences, education for democratic citizenship, social education, etc. (see all subjects of the curricular area Man and society, as foreseen in the curriculum for primary and secondary school) need to master the Information and Data Literacy & Communication and Collaboration, as foreseen in the DigiComp Framework for teachers (EU, 2017).

Moreover, the aim of this activity is to introduce the prospective teachers to the whole concept of the digital citizenship, which, through different increasing level of knowledge, could be used for different ages and educational levels, starting even from kindergarten. The proposed activities are designed for children from primary schools, but also to be used in homework activities that could be done together with their parents.

By proposing these activities, the following elements of the digital activities are envisaged: Access: full electronic participation in society: Communication: electronic exchange of information; Literacy: process of teaching and learning about technology and the use of technology; and Digital rights and responsibilities – that could be extended to everyone in offline and also a digital world.

Skills and learning achievements assessed

- Awareness
- Analytical and critical thinking
- Digital and technological skills
- Adaptability
- Resilience

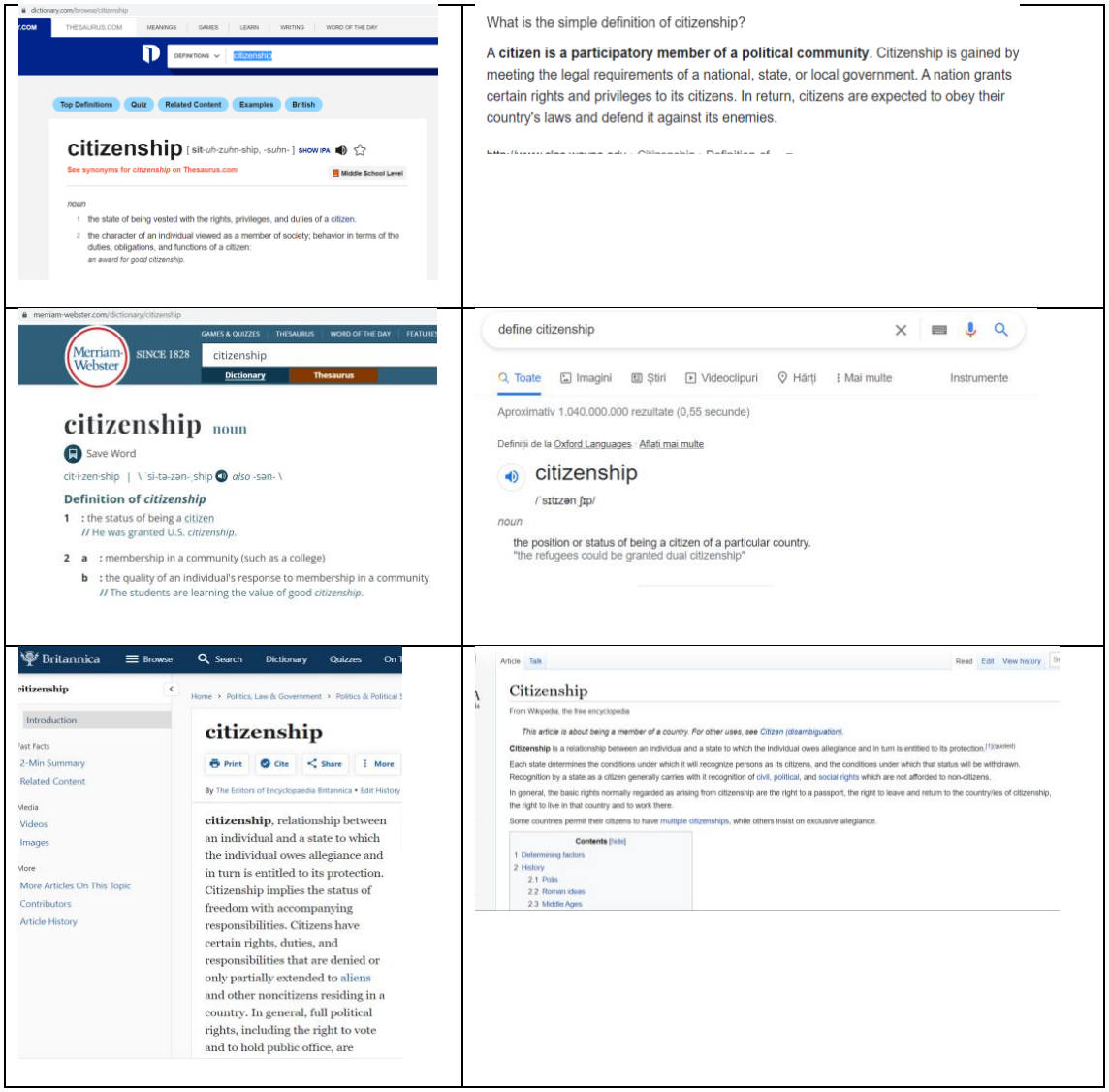
Description of the assessment activity

Sub Activity 1 – Understanding the main principles of citizenship

While the definition of "citizenship" is certainly evolving, especially given the number of online and offline communities we all belong to today, the central principles of "good citizenship" are evergreen. Learning these principles gives students a framework for digital citizenship. This comes in handy as they discover that while most offline communities have rules and norms that have evolved over time, the same does not always hold true for online communities which are newer. Thus, these principles can help guide youth towards the understanding of what it means to be a good citizen, online and off.

First, the students, together with their parents, will look online for the word "citizenship". Depends on their way of searching, they could find some answers as it is shown in Figure 2.

Figure 2. Examples of a search for the word citizenship.



Source: own captures

Secondly, as they will find terms somehow difficult to understand like: citizen, nationality, nation, state, membership, community, status, refugee, responsibility, duties, obligations, legal requirements, rights, privileges etc., they will discuss with their parents their meaning as well as their importance.

Tips for parents:

1. Ask: Do you remember if you have ever travelled anywhere in a car? (Of course they know and have!). Ask: What happens when we arrive at a stop sign or red light? Did we stop, slow down, proceed? How does the driver know what to do? What gives any driver the authority to drive?
2. Ask: If there is a line of shoppers waiting to pay at a grocery store, do you cut to the front of the line? Why or why not?

Sub Activity 2 – Membership of a community

Thirdly, tell your parents to discuss to the students that we all belong to, or are "citizens" of many different groups or "communities" Mention that:

A CITIZEN is a member of a community.

A COMMUNITY is a group of people sharing a space or having characteristics in common.

Tips for parents:

1. The smallest community their children belong to is probably their short family. Ask them to think of some of the other communities they are members of, such as their extended family, their class, school, a sports team, a vicinity, church, city, state, etc.
2. Have them take a moment to list their 3 most important communities.

Sub Activity 3 – The meaning of a good citizen

Explain that being a "good citizen" is guided by at least 5 important principles:

1. Honesty is being truthful and fair. A good citizen must be honest with others, and with himself or herself.
2. Compassion is the emotion of caring for people and for other living things. Compassion gives a citizen an emotional bond with his or her world.
3. Respect is showing regard or consideration for others. Sometimes respect is even directed toward inanimate things or ideas. A good citizen should have respect for laws.
4. Responsibility is about being answerable and accountable. For example, one of the main responsibilities of a student is to learn. They must educate themselves so that they can achieve their full potential.
5. Courage is doing the right thing even when its unpopular, difficult, or dangerous. Many people throughout history—such as Martin Luther King Jr., or Mahatma Gandhi—have demonstrated great courage.

Tips for parents:

Make them reflect to those principles in regard with their sport's team! (see an example, below)

1. Honesty: It takes honesty to tell each other how to play better!
2. Compassion: It's important to show compassion towards the other team's members if they lose!
3. Respect: Shaking hands with opponents after a game shows respect!
4. Responsibility: It takes responsibility to show up to games on time and do well!
5. Courage: It takes a lot of courage to go up to the plate and attempt to hit the ball.

Sub Activity 4 – How to be a good online citizen

Now that the students understand the guiding principles of "good citizenship" offline, it's time to help them apply these principles to online communities they might belong to, or will belong to in the future. Many online communities lack guidelines or have rules that are unclear (or buried in their "Terms of Use"), that's why it's important to help the students understand how to be good citizens even in these digital spaces!

Ask them to list some of the online communities they, or other people they know, belong to today (i.e., multiplayer games, online classes, group chats, Facebook, Twitter, Snapchat, Instagram, Pinterest, even Google Classroom!). Explain that they are about to explore how the same principles that guide us offline, help us when we are online too.

Explain that an online community is any digital space where members interact and communicate with one another. Ask your children to think of an online community they might belong to now or in the future (i.e., TikTok, Fortnite, YouTube, Google Classroom, Instagram, Snapchat). It doesn't matter if they actually belong to these online communities or not.

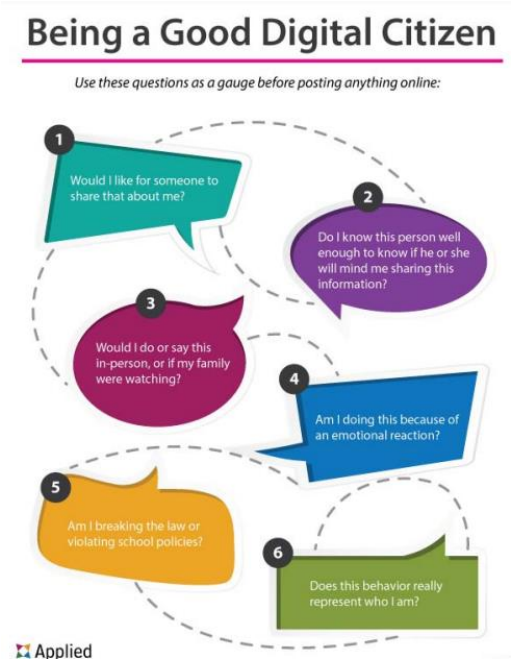
By giving the children a large piece of paper and ask them to draw five boxes and in each box to write and explain briefly underneath only one of the principles of citizenship underlined before (and keeping in mind they can associate an online community only once), they will analyze and reflect in order to both associate appropriately and without to have duplications.

Thus, in a limited period of time (ex 10 minutes), they will be challenged to think about how they might exhibit the principle within that online community, like in figure 3:

Example of exhibition of the principle. Source: cyberwise.org

Then, they should also think of a possible consequence of NOT demonstrating that principle within each online community. For example, a possible consequence of not showing compassion on YouTube might be that a recipient of negative comments might feel hurt or depressed. A kind comment might mean the world to them! Remind your children it is possible to honest without being hurtful. Additionally, posting a positive comment sometimes encourages others to post positive comments too, just as negative or offensive comments often encourage the same. Showing compassion in all communities, often inspires others to show compassion too.

By discussing that participation in any community is a huge responsibility and that their actions impact other community members, they will reflect on the following image, by associating each callout with a digital citizen principle.



Example of questions for defining being a good digital citizen. Source: aeseducation.com

Sub Activity 5 – How to be a good and ACTIVE online citizen

Instead of limiting digital citizenship lessons to "golden rule" type messages, there are many ways to guide students and give them practice in interacting thoughtfully in online discussions, Mattson (2017) says. She offers these tips for helping students — and parents! — engage in effective online communication:

1. Exchange ideas with one or more users - Approach online conversations as an opportunity to learn new things; read, ask questions and hear others out as much as — or even more than — you speak.
2. Tag and mention community members - Reference a particular person, line of thinking or portion of the original text. Stay on topic.
3. Uphold the digital community's agreed-upon norms for interaction. - If you don't know the norms, look to how others are behaving or ask for guidance etc.

To illustrate some of the practices mentioned above, educators can give students & parents sentence frames to help them structure respectful responses in debate or disagreement situations (ISTE U Course, Digital Citizenship in Action).

1. *Scenario: A digital citizen wants to present a new idea that is rooted in evidence but may seem controversial.*
    - Sentence frame: According to _____, we should think about _____ in this way: _____.
2. *Scenario: A digital citizen reads a viewpoint they agree with.*
    - Sentence frame: Thank you, _____, for presenting your viewpoint. I agree because _____.
3. *Scenario: A digital citizen wants to respectfully bring up an idea or viewpoint that is opposite that of the original poster.*
    - Sentence frame: I appreciate the experience shared by _____, but in my experience _____.
4. *Scenario: A digital citizen does not understand the view of someone else in the community and would like more information or an explanation.*
    - I realize my views on _____ are limited. _____, would you mind expanding on your idea a bit more?
5. *Scenario: A digital citizen wants to acknowledge their new learning as a result of their community interactions.*
    - I used to think _____, but now I understand_____.

Summary of the activity (the 5 sub activities):

- Activity takes place in small groups (family), big group (classes) with individual assignments (i.e., debates), or unknown number for the group (online communities)
- Duration: 3-4 weeks
- Methodology: Online collaboration, brainstorming, debate and reflection
- Risks and opportunities:
    1. One of the main risks are associated with their parents' involvement in doing the initial task, due to various reasons: lack of connectivity, lack of time, lack of digital skills etc.
    2. by investigating about citizenship together with their parents they will find out there are some people not connected, excluded from a digital society.

Assessment strategies and instruments

- Oral and written questions
- Scenarios
- Actively involving students in their learning
- Asking to reflect and checking for comprehension
- Summarizing
- Handing signals
- Observation
- Classroom discussions
- Web and concept map (graphic organizers)

Assessment criteria

The main assessment criteria are related to the competences to be performed:

- Design of the space considering the characteristics of the learners and its diversity.
- Demonstrate the capacity to innovate and think "out of the box" using the resources available.
- Integrate digital technologies in the space in order to facilitate learners' autonomy, cooperation, etc.

Description of the feedback

The usual feedback in these (sub) activities is a combination of different types. All agents are usually involved, but especially teachers and parents. The received feedback on students and parents' performance on the spot (when they are doing something good or bad, reflecting also themselves through the activity – ex, sub-activity 4) and afterwards, in the reports and discussions. Also, the feedback received is oral, written, and mixed.

The technique 3:2:1 is used:

- 3 important facts
- 2 interesting ideas
- 1 insight about yourself as a learner

Type of digital tools used and examples of software

- Typeform
- Coggle
- Lino
- Remind
- AnswerGarden
- Wooclap
- Miro
- The Queue
- Brainio
- Google Classroom
- Google Meet and/or Zoom
- Kialo/ /Argunet Editor/Rationale/ Argdown

Level of potential digital transformation

1. **Accessible and available: developed lots of times, easy and known.**
   As exposed in the previous section, digital citizenship is an evolving concept. Thus, one of the main digital transformations will be a continuous professional development of teachers, but also regarding the designing the main activity and the sub activities in terms of better respond to the new development of the digital citizenship principles, also in terms of interaction with parents, gather appropriate feedback in correlation also with the tools used etc.
   There is also a risk associated with using new and existing tools that are more or less known by teachers and parents.

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Activity 10

Engaging with scientific literature for writing a research report

Activity 10. Engaging with scientific literature for writing a research report

Keywords

Online research, information literacy, audio feedback, self and peer assessment

Level of digital competence

Intermediate

Level of thinking skills

Understanding, Applying, Analyzing, Evaluating, Creating

Assessment agents

Self-Assessment, Peer-Assessment, Teacher's Assessment

Problem and Justification: Why do we need digital transformation?

University students are required to write a variety of reports for assessment purposes. A research report is one type that is often used not only in the sciences or engineering but also in psychology and educational sciences. Hence the aim is to build a list of references necessary for a literature review when students write about a research topic. To accomplish this task, usually the students go to university library and access it informational resources (books, journals, periodicals, films and videos, databases etc.). In addition to individually-focused studying, students come to a library for various purposes, such as group learning, collaborating, or socializing.

But with the advent of Internet and web technologies, digital libraries and online databases are quickly becoming the norm at colleges and universities as ways to expand the materials available to students and to help them refine their research skills. On the other hand, today's students don't know the world without the internet. So, this "laptop generation, whose idea of research is a quick troll through Google" (Sharp, 2005), needs to be encouraged to explore its school's digital libraries. Moreover, the COVID-19 pandemic, with campuses closed for extended periods, has forced students to remain and study at home. So, they rely on digital and other research facilities, such online repositories or databases, provided by universities.

Therefore, we can think at a digital transformation with multiple benefits, in terms of:

- helping students make better use of online library information
- facilitating students' interaction with their and other colleagues' work through digital library services
- reducing teachers' time load when digital assessing students' work.

Skills and learning achievements assessed

- Developing a search strategy, solid online research skills (using search keywords, Boolean operators, online databases thesaurus etc.)
- Locating appropriate scientific literature
- Synthesis and critical thinking / evaluation (teaching students how to be critical evaluators of information they encounter during online research is an essential life skill)
- Critical reading (to ensure critical writing)
- Critical writing of references following APA standard
- Communication, research and organizational/learning skills are core competences acquired by scientific research activity

Description of the assessment activity

This assignment will familiarize the students with the process of accessing the University library system through the web. In particular, the goal of this assignment is that students will conduct a literature search using specialized computerized online database containing references for articles and books related to educational sciences.

The teacher will group the students in pairs and set topics for each pair. There will not be 2 pairs with the same subject. Then, he/she will ask students to complete the task individually and at the end to discuss it in pairs. It will be emphasized that this is an individual exercise that will help guide students through doing an online literature search on a class research topic using the online databases (ERIC, PsychINFO, EBSCO and Proquest) and academic search engines (Google Scholar, Microsoft Academic Research and Semantic Scholar). The assumption throughout the assignment is that the found papers will be used for a literature review in writing a research report.

The students know that have to limit their search to articles and books from the past 10 years. The final search for this assignment should be narrow enough so that students' search results is no more than 30 articles, book chapters, or books. Students are instructed to read abstract articles or book descriptions, look for authors' keywords and online databases descriptors and thesaurus terms, and reflect on the usefulness of the content for their topic.

At the end the students are asked to list all references in APA format in a document, in alphabetical order, and embed it into the assignment on LMS. For this assignment we estimate a maximum of 2 seminars. 1 seminar unit = 90 minutes. Notes:

a) It is important that teachers make sure that students know the basics of how to use these databases and search engines.
b) The task can be taken to a higher level, asking students to include references in the field of gray literature, especially Youtube videos, TED speeches, reports from various organizations such as UNESCO, OECD, …; to identify one or more figures within selected article that shows meaningful data for student's project or to write a summary (1-2 paragraphs) of selected articles.

Assessment strategies and instruments

Teachers can make use of a set of questions (as a digital checklist or a questionnaire), to ask students to reflect upon their assignment (and to discuss with teacher or their peers):

- What are some of the criteria/limitations you can tell the database to use in order to search for a topic?
- What do you do to find articles in which you can see the 'full text' online?
- How did you narrow your search enough so that you had 30 or less "hits" (i.e., articles, books, or chapters) for your topic? What did you find most helpful in narrowing your search?
- If you encounter a problem in conducting your literature search, please explain in detail what the problem was.

Students will do a peer-assessment using the grading rubric below and then discuss in pairs (share ideas, compare references etc.). Thus, the students have the opportunity to revise, before submitting for teacher assessment (TA) and further comment. The evaluation from the peer and TA are intended to provide feedback as the student proceed with the research for term paper.

At the end, each pair will share their opinion in front of the class.

Assessment criteria

Table 8. Rubric for peer assessment

Question	**Circle answer and explain STUDENT1**	**Circle answer and explain STUDENT2**
Is the research topic reflected in the search terms?	No – a little – somewhat – definitely *Suggestions for improvement?*	No – a little – somewhat – definitely *Suggestions for improvement?*
Does the search process cover the subject under investigation? (How many databases and search engines did the student use? Did he use Boolean operators or other search operators?)	No – a little – somewhat – definitely *Suggestions for improvement?*	No – a little – somewhat – definitely *Suggestions for improvement?*
All references are cited correctly in APA format?	No – Yes	No – Yes
Is the writing of references effective? *(correct, in alphabetical order, using indentation etc.)*	No – a little – somewhat – definitely *Suggestions for improvement?*	No – a little – somewhat – definitely *Suggestions for improvement?*

Grading Scheme for formative/summative assessment

A – Focused around a clearly research questions. The search was performed with at least 2 databases and 2 search engines. The final list reflects analysis, interpretation and synthesis of information (less than 10 years, educational sciences content etc.). All references are cited correctly. The writing is excellent.
B – The research question is clearly stated. It is unclear how many databases or search engines were used. There is some original thinking but is not as well focused as an A paper. All references are cited correctly. The writing is good.
C – The research question is unclear. Writing and organization are mediocre.
D – The research question is unclear. There is inadequate detail with no analysis. Writing is poor.

Description of the feedback

In our case, the feedback is asynchronous written (on LMS), oral or video feedback and self and peer assessment (individual and in pairs).

Type of digital tools used and examples of software

Besides LMS (G-Suite, MS Teams or Moodle) and web-conference tool (Zoom, Google Meet etc.) we suggest as applications the following:

- Student:
  - A Concept Map (Coggle, MindMeister, Mindomo, Weje, MindMup etc.) – mapping the terms of search strategy.
  - For grading rubric (peer-assessment) – WEJE, - a virtual panel board to work in collaboration (Padlet.com can be an alternative).
  - A slideshow software (e.g. MS PowerPoint, Google Slides, Prezi, Canva etc.) for final presentation in front of class.
- Teacher:
  - CheckLI for organizing questions as a checklist (in this case the student will only check the value of truth).
  - A survey tool (it can be a LMS tool such as GoogleForms or MSForms, but also an external one, like Surveymonkey, QuestionPro etc.).
  - To give feedback (recorded while correcting) that also support self and peer evaluation: screen-casting videos. This is also a great way for students to create class presentations, share them, or receive feedback from one another. Resources needed: a screencast software (e.g. TechSmith Capture, Screen-Cast-O-Matic, , Loom, or ScreenApp). As free web-based alternatives for vocal feedback – Vocaroo or Mote.

It can also be use Miro.com – an online collaborative platform that has all the necessary features for this task and can be used by students and/or teacher.

Levels of potential digital transformation

During university or college study students will be confronted with academic literature for the first time. It is essential that they learn what academic literature is, where to find it and how to use it correctly. To succeed in this, students need to develop new skills - information literacy skills. These skills are part of the academic skills taught during college education.

A major shortcoming of current courses is the lack of self- and peer- assessment components. Therefore, a central innovative approach of our activity will be the implementation of technology-based assessment components which allow students to get feedback on their learning success and hints on how to improve its.

1. **Accessible and available: developed lots of times, easy and known.**
   This level corresponds to the activity explained in the previous sections.
2. **Under exploration: the technology exists but it is not easily accessible.**
   An advanced solution to the need of practicing giving a class online, could be to incorporate a chatbot into the LMS or learning environment. The chatbot should have been nourished with typical questions and comments that students could make and that could be challenging for those students simulating running a class.

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Activity 11

Time management skills assessment for an internship program in Higher Education

Activity 11. Time management skills assessment for an internship program in Higher Education

Keywords

Time management, skills assessment, survey, COVID-19 pandemic, traineeship

Level of digital competence

Intermediate

Level of thinking skills

Analyzing, Evaluating, Creating

Assessment agents

Self-Assessment, Peer-Assessment, Teacher's Assessment

Problem and Justification: Why do we need digital transformation?

The Digital Society School (Amsterdam University of Applied Sciences) offers a 20 week-traineeship program, which aims to support learners grow their skills and develop their full potential in innovative interactive media. Specifically, every semester, 50 diverse learners participate in this hands-on learning experience, which involves practice-based work with industry partners and applied research. The diversity of our learner population and of the tasks they have to complete leads to significant differences with respect to how learning is shaped by participating in this program. Since this is a every practice-oriented program, it relies on the on campus interaction of the students with experts in digital transformation, the participation in hands-on workshops and collaborative projects. Every team of learners is assigned to a coach, who guides them throughout the program. Since March 2020, when the COVID-19 pandemic started, the program has been offered partially or fully online, which has created additional complexity to the learners' experience. Quantitative and qualitative data collected from our graduates over the last two years has demonstrated that our learners need additional support in managing their tasks, behaviors and emotions while being online. The learners use SCRUM and Design Thinking methodologies to complete their projects, working in sprints. This rigorous working pattern requires well-developed time management skills, even more when working remotely. The goal of this e-assessment activity is to evaluate the time management skills of the learners to enable them to complete their tasks while working remotely on their traineeship project.

Skills and learning achievements assessed

- Time management
- Task prioritization
- Use of technology for skills assessment

Description of the assessment activity

First, we ask from the learners to reflect for how they are spending their time. Taking a good hard look at how they spend their day (especially when working remotely) can give us insights on where time is being wasted. The initial proposal for the whole group of learners is to spend a week "journaling" how their time is spent. This will be accomplished by keeping an online record using Miro board. Miro is a Standard collaboration tool for the traineeship at the Digital Society School, so everyone is familiar with it. At the same time, they have access to their peers' online records and their tutor has access to this Information. Once they all have integrated their online record for the whole working week, they organize a brainstorming session to reflect on good practices for time management skills. This session ends with "actions" to be taken from each learner to improve their time management skills. After this, and on weekly basis, the students fill in the time management personal online survey and at the end of the semester they reflect with their tutor on the progress made.

Summary of the activity: Activity takes place in big group with individual assignments

Duration: 20 weeks

Methodology: Online collaboration, brainstorming and reflection

Assessment strategies and instruments

Strategies:

- Identification of the strengths of the learners
- Identification of the areas for improvement
- Track progress of the learners
- Collect feedback on current time management practices

Tools:

- Collaborative online board
- Online survey
- Teleconferencing tool

Assessment criteria

Please see the questions in bullets as suggestions for the more specific assessment criteria or for the creation of the customized rubrics.

Quality of the online records

- are the records specific?
- are the records noted daily?
- are the records noted a few times a day (at least 5)?
- are the records descriptive?

Critical reflection and participation in the brainstorming sessions

- has the student given feedback to other students during those sessions?
- has the student asked questions?
- has the student participated actively in the brainstorming sessions?
- has the student attended the brainstorming session?

or at the end of the semester

- has the student participated actively in 90-100%, 80%-90%, 70%-80%, 60%-70% of the sessions?
- have 90-100%, 80%-90%, 70%-80%, 60%-70% of the sessions been attended?

Timely completion of the “time management personal survey”

- has the survey been completed by the student by the deadline?
- has the survey been completed by the student at all?

or at the end of the semester:

- have 90-100%, 80%-90%, 70%-80%, 60%-70% of the surveys been completed by the student by the end of the semester?

Description of the feedback

- Oral feedback during the online sessions (synchronous)
- Written feedback in the collaborative online board (asynchronous)
- Agents involved: learners and coach

Type of digital tools used and examples of software

- Miro Board
- Google forms
- Zoom

Levels of potential digital transformation

1. **Accessible and available: developed lots of times, easy and known.**
   Miro Board, Google forms, Zoom are available with a free account. This activity does not require a specific software and the ones mentioned can be replaced with the more familiar equivalent. They neither require high technical skills. During the remote teaching and learning these have been tools that have been resorted to by teachers frequently. This activity could also include a rubric that allows for self-assessment. It could also be a part of a massive open online course (MOOC).

Scientific references and good practices

Adams, R. V. & Blair, E. (2019). Impact of Time Management Behaviors on Undergraduate Engineering Students' Performance. *SAGE Open, 9*(1), 215824401882450–. https://doi.org/10.1177%2F2158244018824506

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Activity 12

Effective Speed Reading of academic literature

Activity 12. Effective Speed Reading of academic literature

Keywords

Speed reading, applied research, traineeship, literature review, desktop research

Level of digital competence

Intermediate

Level of thinking skills

Understanding, Applying, Analyzing, Evaluating, Creating

Assessment agents

Peer-Assessment, Teacher's Assessment

Problem and Justification: Why do we need digital transformation?

This traineeship program aims to support learners grow their skills and develop their full potential in innovative interactive media. Every semester, diverse learners participate in a hands-on learning experience, which involves practice-based work with industry partners and applied research. The diversity of the learner population and of the tasks they have to complete leads to significant differences with respect to how learning is shaped by participating in this program. Since this is a every practice-oriented program, it relies on the on-campus interaction of the students with experts in digital transformation, the participation in hands-on workshops and collaborative projects. Every team of learners is assigned to a coach, who guides them throughout the program. Since March 2020, when the COVID-19 pandemic started, the program has been offered partially or fully online, which has created additional complexity to the learners' experience. Quantitative and qualitative data collected from our graduates over the last two years has demonstrated that our learners struggle with the search of academic literature when conducting desk Research for their projects. Especially during the COVID-19 pandemic, with much less contact with academic experts on campus and internet as the only way to find the right Information for their projects, it is more needed that necessary to help them improve this skill. Our graduates have witnessed spending hours reading a full paper, which ends up being useless for their projects. The goal of this e-assessment activity is to enhance learners' speed-reading skill when searching for academic literature at home for their projects.

Skills and learning achievements assessed

- Speed-reading
- Academic readings comprehension
- Using technology for skills assessment

Description of the assessment activity

An online template is created where the learners will have to provide a 200-word summary of 2 academic articles published in peer-reviewed journals related to the project of the traineeship (one summary per article) and a 100-word justification of how useful this paper is for their project. A timer will show to the learners and their coach the time they needed to read the articles and write the summaries and the justification of the usefulness of the papers for their project. After this first activity, the coach of the trainees shares, through an online session, strategies for skimming through an academic text and comprehend it at faster reading speeds. The activity will be repeated twice and the coach will provide feedback after each template submission. The templates of the whole group will be published (anonymously) in the SharePoint space of the traineeship, so everyone can read the summaries and the justification, as well as the feedback from the coach.

Summary of the activity:

Activity takes place in big group with individual assignments

Duration: 6 weeks (the first 6 weeks of the traineeship, when learners engage mostly with academic literature)

Methodology: Big group workshop, individual assignments with personalized feedback, which will be shared to the whole group.

Assessment strategies and instruments

<u>Strategies:</u>

- Identification of the strengths of the learners
- Identification of the areas for improvement
- Track progress of the learners
- Provision of good practice / effective speed-reading examples

<u>Tools:</u>

- Online survey
- Web-based collaborative platform
- Teleconferencing tool

Assessment criteria

Quality of the summaries of the articles

- are the entries summarizing the main arguments?
- are the summaries well-written? (Grammatically correct, concise and coherent in style)?
- are the summaries following the criteria (200-word long, at least 2)

Quality of the justification of the usefulness of the articles for the traineeship project

- is the justification of the usefulness of the articles for the traineeship included?
- is the justification well-argued (quality: high, intermediate, low)?
- are the justifications following the criteria (100-word long)?

Progress in speed-reading

- Is the time spent on reading the articles becoming less? (yes, somehow, no)

Possible variation of the activity: discuss the assessment criteria among all students to make sure they share a common understanding of the quality standards

Description of the feedback

- Oral feedback during the online session (synchronous)
- Written feedback in the web-based collaborative platform (asynchronous)
- Agents involved: learners and coach
- Possible variation of the activity: include self-assessment and peer-assessment at some point

Type of digital tools used and examples of software

- SharePoint
- Jotform
- Zoom

Levels of potential digital transformation*:*

1. **Accessible and available: developed lots of times, easy and known.**
   Jotform and Zoom are available with a free account. This activity does not require a specific software and the ones mentioned can be replaced with the more familiar equivalent. They neither require high technical skills. During the remote teaching and learning these have been tools that have been resorted to by teachers frequently. With these tools, it is also possible to record the online sessions and keep the material, so it can be used later for discussion during the feedback sessions.

Scientific references and good practices

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Activity 13

Mastering body language in online meetings

Activity 13. Mastering body language in online meetings

Keywords

Body language, online meetings, communication skills

Level of digital competence

Intermediate

Level of thinking skills

Applying, Analyzing, Evaluating

Assessment agents

Self-Assessment, Peer-Assessment, Teacher's Assessment

Problem and Justification: Why do we need digital transformation?

This traineeship program aims to support learners grow their skills and develop their full potential in innovative interactive media. Every semester, diverse learners participate in a hands-on learning experience, which involves practice-based work with industry partners and applied research. The diversity of the learner population and of the tasks they have to complete leads to significant differences with respect to how learning is shaped by participating in this program. Since this is a every practice-oriented program, it relies on the on-campus interaction of the students with experts in digital transformation, the participation in hands-on workshops and collaborative projects. Every team of learners is assigned to a coach, who guides them throughout the program. Since March 2020, when the COVID-19 pandemic started, the program has been offered partially or fully online, which has created additional complexity to the learners' experience. During this period the vast majority of the learners' meetings (with peers, the coach, the industry partners) take place online (via zoom). These meetings require from all participants to be aware and present, and body language is just as important in an online setting as it is in person. The goal of this e-assessment activity is to evaluate the body language of the learners during these meetings to enable them to demonstrate the same professionalism they used to show in the on-campus meetings.

Skills and learning achievements assessed

- Leveraging authenticity and strengths
- Understand body language
- Be self-aware of the body language you use

Description of the assessment activity

First, we ask from the learners to take the LinkedIn course "Body Language for Authentic Leadership" and the quiz of the course at the end. Then the coach shares a template on body Language in virtual meetings related to the following aspects: framing, presentation, posture, facial expressions, use of hands. The coach, who is present in most of these virtual meetings, observes the body language of the trainees and provides them with both group and individual feedback. This is repeated on a weekly basis (1 meeting per week). The feedback is registered in the web collaboration platform of the traineeship.

Summary of the activity:

Activity takes place in big group (virtual meetings)

Duration: 20 weeks (with one observation per week)

Methodology: Autonomous learning, big group discussions, group feedback, individual feedback

Assessment strategies and instruments

Strategies:

- Identification of the strengths of the learners
- Identification of the areas for improvement
- Track progress of the learners
- Provision of good practices

Tools:

- Observation
- Web-based collaborative platform
- Teleconferencing tool

Assessment criteria

- Completion of the self-paced course
- Integration of the feedback in next meetings
- Improvement of body language throughout the semester
- Use of communication strategies in digital media

Description of the feedback

Group feedback (oral, synchronous)

Individual feedback (written, asynchronous)

Agents involved: coach and learners

Type of digital tools used and examples of software

- SharePoint
- Zoom
- Digital Observation template

Level of potential digital transformation

1. **Accessible and available: developed lots of times, easy and known.**
   Zoom is available with a free account. This activity does not require a specific software and the ones mentioned can be replaced with the more familiar equivalent. They neither require high technical skills. During the remote teaching and learning these have been tools that have been resorted to by teachers frequently. A possible variation of this activity could be to use a digital rubric to be completed by all the assessment agents, using the same criteria – which would have been discussed in advance. This variation would promote reflection on the progress, thus leading to higher learning.

Scientific references and good practices

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Activity 14

Building daily trust in online settings

Activity 14. Building daily trust in online settings

Keywords

Trust, traineeship, values

Level of digital competence

Intermediate

Level of thinking skills

Understanding, Applying, Evaluating

Assessment agents

Self-Assessment, Peer-Assessment, Teacher's Assessment

Problem and Justification: Why do we need digital transformation?

This traineeship program aims to support learners grow their skills and develop their full potential in innovative interactive media. Every semester, diverse learners participate in a hands-on learning experience, which involves practice-based work with industry partners and applied research. The diversity of the learner population and of the tasks they have to complete leads to significant differences with respect to how learning is shaped by participating in this program. Since this is a every practice-oriented program, it relies on the on-campus interaction of the students with experts in digital transformation, the participation in hands-on workshops and collaborative projects. Every team of learners is assigned to a coach, who guides them throughout the program. Since March 2020, when the COVID-19 pandemic started, the program has been offered partially or fully online, which has created additional complexity to the learners' experience. During this period the vast majority of the learners' meetings (with peers, the coach, the industry partners) take place online (via zoom). In this context, peer relationships may have an important influence on learners' cooperative behaviors. Having good social support facilitates better cooperation between individuals; the stronger the peer relationship, the higher the quality of cooperation in pursuit of goals shared with cooperative peers. Similarly, individuals are more likely to engage in cooperative behavior among those they trust. The goal of this e-assessment activity is how learners can inspire trust to their peers for the development of effective and harmonic relationships.

Skills and learning achievements assessed

- Leveraging authenticity and natural strengths
- Provide evidence of honesty, reliability and openness
- Explore how behaviors align with spoken values.

Description of the assessment activity

First, we ask from the learners to take the LinkedIn course "2. Daily trust Builders" and the quiz of the course at the end, a more appropriate culturally alternative can be presented. A possible variation for this would be that the teacher creates their own materials, instead of taking the LinkedIn course. Then the coach shares a template with examples on how to prove someone's reliable, competent, honest, and shows concern for their peers (similar values can be listed depending on the needs). The learners should create a journal where they will be reporting activities and examples from their collaboration with their peers which show growth on the elements that appear in the template. It is expected from the learners to write a new journal entry on a weekly basis. The coach will be providing feedback on these entries and the learners are expected to integrate this feedback in their next entries. At the end of the activity, learners will collect feedback from their peers on how well they managed to demonstrate the skills that appear in the template during their collaboration.

Summary of the activity:

There is a big group meeting (teleconference) for the explanation of the task. Then, learners work on their own journal, interacting with their coach. There is a peer feedback activity at the end.

Duration: 20 weeks (with one new journal entry per week)

Methodology: Autonomous learning, individual feedback (learner-coach) group feedback (peer-to-peer feedback).

Assessment strategies and instruments

<u>Strategies:</u>

- Identification of the strengths of the learners
- Identification of the areas for improvement
- Track progress of the learners
- Collect feedback on learners' progress

<u>Tools:</u>

- Online Journal (students can use a multimedia journal, for diverse feedback options and higher quality evidence)
- Online collaboration platform
- Teleconferencing tool

Assessment criteria

Completion of the journal activity. Has at least one entry per week been submitted?

Integration of the feedback from the coach in next journal entries

Peer-to-peer feedback on the skills that appear in the template. Has the feedback been collected from at least 5 people??

Description of the feedback

Group, peer-to-peer feedback (written, asynchronous)

Individual feedback, coach to learner (written, asynchronous)

Agents involved: coach and learners

Type of digital tools used and examples of software

- Grid Diary for the journals of the learners
- Zoom for the initial group meeting
- Digital template
- Miro Board (for peer-to-peer feedback exchange)

Levels of potential digital transformation

1. **Accessible and available: developed lots of times, easy and known.**
   Miro Board and Zoom are available with a free account. This activity does not require a specific software and the ones mentioned can be replaced with the more familiar equivalent. They neither require high technical skills. During the remote teaching and learning these have been tools that have been resorted to by teachers frequently.

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