Measuring learners' progress

How can we assess and monitor learners' progress online?

This working paper documents the exchange within the ICT4VET Community of Practice (CoP).

Urs Gröhbiel and Christoph Pimmer, 9.7.2020

With contributions of Erka Caro, Franz Kehl, Ivana Georgievska, Katrin Ochsenbein, Sidita Dibra (in alphabetical order)

Content

SNBI

Version history

If you make changes to this document, please describe them in a few words here. Thank you!

Version	Date	Author	Comment
0.1	24.6.20	Urs Gröhbiel	
0.2	29.6.20	All	Adding questions and experience
0.3	6.7.20	Urs	Draft of findings to be published
	13.7.20	All	Review of draft. Revision.
1.0	14.7.20	Urs, Marina	Finalize the document, upload to the public CoP-page

1   Programme of CoP session on Tue, 30.6.

10.00-11.00 a.m., Zoom meeting

1. Welcome, up-date since last meeting
2. Addressing our questions
3. Collect open questions, feedback
4. Next steps:
    a. Draft of results by Urs, review/sign-off until coming Monday
    b. Next meeting on **Tuesday, July 14th 10 a.m.** (no meeting next week!)
       Topic: Training of Trainers

2 Discussed questions and examples

2.1 What purpose do online assessment tools serve?

As it is important to reflect on the purpose of measuring learners' progress, before choosing a tool, we have collected a variety of possible purposes of measuring learner's progress online.

Support of the learning/teaching process

- To support the process of **teaching** – identifying existing knowledge and gaps of the students helps the teacher to be agile and to guide further training (Sidita)
- To support the process of **learning**: Intensive/high volume content can be integrated in assessment. E.g: explanations to multiple choice question and links to learning content help students better understand and revise (Sidita). To motivate/give purpose to the students (Erka) Keeping students engaged and alert (Ivana)
- To increase **interactivity** between learners and teachers (Erka)

Clarify student's level of knowledge and competence for teachers, students and others

- Measure the capacities of students to check, if the learning goals have been achieved and if a certificate can be issued (Erka)
- To support self-assessment of students (Urs)
- Documentation of learning progress of students, e.g. e-portfolio --> documentation for others, to foster self-esteem (Sidita)

2.2 What type of knowledge/competence can we assess online? Which evaluation/assessment methods are effective?

Based on the e-learning landscape we have discussed how we can decide, which assessment/evaluation method and which tools help us measuring which learning goals.
A few examples:

1. Knowledge and comprehension can be measured in different ways, for example:
   a. Distributing/providing questions with separate solutions. This can be supported for example within TV/radio-programmes (e.g. questions at the end, solutions in the next broadcasts), SMS push functions or websites.
   b. Drill & practice features can give students immediate individual responses, once they have given a standardized input. Hints and links to learning content can support the learning process. This can be supported for example by SMS-solutions, mobile apps or learning management systems.
   c. If trainers or tutors can make time to coach some of the students (e.g. during guided self-directed learning of a group), they can test and with their feedbacks train specifically knowledge and comprehension using for example SMS or social software.
   d. Finally, group settings also offer opportunities to support peer-review or to test knowledge of small groups of students. But this rather time intensive approach might better be used as described in the next point.
2. The assessment of application and further "higher" cognitive goals can better/easier be supported in the context of (ICT-supported) human-human interaction, for example:
   a. In individual coaching (see above), trainers can also assess, if students can analyse and evaluate a specific situation. Or if they can design a solution or application existing knowledge to this situation, using for example e-conferencing software, e-portfolios, online project management software or social media.

b. The same assessment can be implemented in group settings, supporting students in peer-review or assess group performance in groupwork with clear roles, using the same tools as under a.).

As we could show, "simple" technologies which do not require internet-connection and sophisticated devices can support the assessment of quite a wide range of learning goals. To measure learning progress regarding "higher" cognitive learning goals requires a more sophisticated infrastructure.

	Human – machine		stud – tutor (1:1)	peer – peer (– tutor) (n:n)
Analysis, Synthesis, Evaluation Learners are able to analyse a situation on their own, create meaningful solutions and evaluate based on their knowledge.			Individual Feedback (assignments with application)	Group Feedback, Discussion, clarification, self-reflection, peer assessment
Application Learners can apply their knowledge				
Comprehension Learners comprehend terms and can explain them.		Drill & Practice	Individual Feedback	
Knowledge Learners remind terms and can reproduce them.	Questions & solutions		Questions to students (S4J)	
Interaction	Human – machine		stud – tutor (1:1)	Human-human peer – peer (– tutor) (n:n)
Functions of media	E-Learning by Distributing	E-Learning by Interacting		E-Learning by Collaborating

4. Assessment process (Ivana)

We have discussed activities during three phases of the process of measuring learner's progress with a focus on preparation and follow-up:

Preparation

- The design of online assessment/evaluation needs to be based on learning goals.
- This can be rather time intensive (e.g. formulating meaningful multiple-choice questions or open questions is not easy and usually needs to be trained)

Implementation of Assessment

Follow-up: Feedback, Improvement

- In the planning of the learning process it is important to reserve some time for reflection of the assessment results/feedback. While this is obvious in formative evaluations, also summative assessments are a valuable basis for self-reflection and planning of the further learning process. Enough time needs to be planned for this phase for the teacher and the students.

6. How to handle assignment/assessment overload?

When online, teachers concentrate more (than during F2F T&L) on documented assessment since this is one of the ways one can verify T&L actually happened. They give many assignments and both parties are **overloaded**. This way the time spent on explaining and interaction is often replaced with homework and feedback not always is complete (mainly due to teachers' workload). While we see this happening in S4J supported schools, there are also good cases we can share (Sidita)

- I find this question from Sidita really important as we see this also as a major issue here in Switzerland and in other projects (Franz)
- I was wondering whether this overload doesn't incentivize teacher to use tools, which are rather at the lower level of the learning taxonomies of Blum (Knowledge and Comprehension), such as multiple choice and others, which do require less time from teachers side (to assess, not to design obviously). Do you see any evidence of this happening (e.g. using multiple choice assessment for checking upon learning outcomes for application/evaluation)? (Katrin)
- Three approaches to tackle these challenges: (Urs)
    o Careful design of assignments (among other points: clearly defining the expected answer, evaluation criteria and time on task. Planning for evaluation/feedback (s. above).
    o Teachers need to agree on time allocation per subject for self-directed/online learning and assessment (the same way they agree on how many lessons are allocated to each teacher/subject).
    o Balancing the time invested in the different phases of the learning process, giving enough space for interaction, self-reflection and assessment (in my experience, conventional lesson plans focus strongly on the presentation and neglect these key areas).

7. Binding character of online assessment

In many cases of distant learning, it was decided (after the process has started) that distant learning assessment won't influence in the final/average grade. This influenced in **low attendance** and engagement of students in distant learning. What is your opinion and experience in this regard? (Sidita)

Two possible approaches that can help: (Urs)

- When we can track student's contributions, make assessments compulsory (as you would do it in class) and check samples, if students can easily copy answers.
- If students are convinced that the assessment is a helpful preparation for the final exam, their motivation might also be higher.

And what are good ways to setup binding assessments in a situation of blended learning and not a crisis situation as we had it now? Are other formats than 1:1 oral exams doable? What formats are out there and have proven to be valid and not (too) prone to cheating – and therefore also acceptable for final examinations and promotion exams? Who has experience with written exams? Who has experience with practical exams that are e.g. documented with a portfolio? (Franz)

- In Switzerland we have invested much into this. I do not think that these approaches are feasible for VET in disadvantaged contexts, because they are too sophisticated/expensive and/or cannot prevent cheating convincingly. In the end you need to control the environment. (Urs)

- I have evaluated distance (higher) education institutions with short training on site that claim that the teachers get to know the writing style of their students, because they have to hand in several essays. This is quite plausible, but not applicable to most VET colleges.
- S4J supported certification exams in Moodle (mesovet.al) for more than 560 students. This LMS provides opportunity to develop individual exams by randomly selecting for each student questions from a "test bank" as per predefined criteria. Compared to google form, Moodle LMS results corelated with students average grade and cheating was difficult as a result of shuffle option. (Sidita)
- In my personal experience (in higher education), what works best is the formative/continuous assessment through a variety of modalities that incentivise creativity (individual assignments, group work, peer assessment, competition, active participation in class discussion), each one of them can be supported by simple online tools – and works best in a blended learning format. (Sidita)

Example of S4J: In the case of Albania the main challenge highlighted by both teachers and student was the assessment process. Teachers point out the challenge of decrease in students' interest and difficulties concerning their evaluation. There were no clear instructions on how to do that by state authorities. During the assessment studies conducted to measure and monitor distance learning in Albania, focus groups brought out concerns and challenges with appropriate evaluation methodology and evaluation fictiveness, while students were concerned with the inaccuracy in evaluation and the evaluation pressure. As such one of the recommendations of the distance learning assessment that was conducted by S4J is related to 1.Teachers' trainings on effective evaluation methodologies for distance education and 2.Facilitate the evaluation process, e.g., by creating a test bank or even introducing suitable evaluation methods for distance education conditions. At the end of the academic year we had some positive experience with testing and assessment of students through online testing conducted in MesoVET platform. (Erka)

7. Assessment after the crisis

Who has already looked into the future after Corona and thought about how schools will deal with assessment after the crisis. I fear that many schools will expect the learners to catch-up quickly and try to implement the plans as if everything were normal. However, the learners will most probably have something to catch-up and find it difficult to meet the requested levels of proficiency as if Corona would not have been there. What policies to apply? How to adapt the levels requested? For how long? (Franz)

- In Albania, Ministry of Education declared that the new academic year will start with covering the topics missed during pandemics. Instructions are still missing though. In my personal opinion, more focus should be put to the competency and/or learning outcome proficiency, rather than a certain part of annual teaching plan not accomplished. This would require individualised learning plans for students – quite challenging but a reality in countries like Finland (Sidita). HERE you can access a webinar organised by European Training Foundation where experiences from different countries (Moldova, Kazakistan, France, Finalnd, Egyp) are shared on final exams.

And second: does anyone work on assessment methods including digital means after the crisis or will the systems just go back to normal? What elements have proven to be so good and effective that it makes sense to continue applying them also during "normal" times? (Franz)

- In my view digital assessments are valuable in the context of formative evaluations. Different methods, depending on the learning goals: standardized questions for basic understanding, essays, assignments etc. I hope that VET schools will use these forms in the "new normal". (Urs)

3 Expertise of CoP members

Area of expertise	Name	Contact
M&E with detailed insights into	Erka	erka.caro@swisscontact.org
Good practice on assignment/ assessment overload	Sidita	Sidita.dibra@swisscontact.org
Swiss experience	Franz	kehl@kek.ch