Software: Fronius Welding Simulator	
Qualification: All qualifications in vocational education (all welding qualifications are included)	
SUMMARY	

Teachers and/or trainers, in vocational education, assess/evaluate using Fronius welding simulator.
This simulator works on the principle of serious play.
It has three levels related to the management of the welding process.
The minimum number of points for each level is 0 points and the maximum is 1000.
The teacher/trainer determines the pass threshold, e.g., 60% (that is 600 points).
When performing the exercise, the simulator scores. You cannot go to a higher level if you have not passed the threshold (600 points).
The teacher determines the scale of grades according to the national standard in relation to the achieved points on the simulator.
The assessment is performed similarly to simulators from other fields.

Software: Google Classroom	
Qualification: All qualifications in vocational education (all welding qualifications are included)	
SUMMARY	

Teachers develop practical scenarios for both online and offline assessment. Students connect on Google Classroom and run de scenarios. The teachers evaluate their performance using predefined rubrics. Teachers organize virtual classroom in online education. Students receive invitations to join to the classroom. Each student receives individual scenario fir practice assessment. All class receive one quiz with multiple choice answers for theory assessment.

Software: SOLDAMATIC	
Qualification: All qualifications in vocational education (all welding qualifications are included)	
SUMMARY	

Soldamatic has an evaluation system where you have access to it once the exercise has been completed , that shows in the analysis module the results of the executed exercises. This analysis module gives us details of each analysed parameter that we could hardly see in the real weld.
This will allow us to know in more detail what are the aspects that the student should improve, and therefore, we will be able to design reinforcement exercises that focus on these aspects.
In addition, it contains the video reproduction of the execution from different angles, as well as a view of the piece in 3D.
The execution of the exercise is evaluated by passes.
When an exercise is created in the e-Learning Teacher, each welding parameter is set to Target Value and a range below and above (Target Range), this for each welding pass. These values are used to evaluate the parameter in the analysis module.
Score of each welding parameter (e.g., feed rate) in a pass is the arithmetic mean in this pass with respect to the Target Value and Target Range. The exact formula is a bit complicated, but in general it says: In Target Value you score 100, in Target Range the score drops to 80, otherwise the score

drops rapidly. The total score of a run is the geometric mean of the score of all parameters in this run. The total score of the exercise is the geometric mean of the scores of the passes. For an exercise the following are evaluated: manual skills, equipment settings, defects and if you want to add a bend test even if it is for the new version.

Manual Skills: When an exercise is created in the e-Learning Teacher, you define a cut-off score for the total exercise (target). The total score of a run is the geometric mean of the score of all the parameters in this run. The total score of the exercise is the geometric mean of the scores of the passes and must exceed the target value of the exercise. There are default ranges according to the level of difficulty of the exercise.

Equipment Settings: The score is calculated as the average of the score of all the parameters that comprise it, which must exceed the target value of the exercise.

Defects: We evaluate the possibility of occurrence of a defect in a finished weld point. The score is calculated as the average of the score of all the parameters that make it up, which must exceed the target value of the exercise.

Bend Test: it is only evaluated as pass or fail. In beginner and intermediate it does not impact the grade of the exercise. In advanced, if the exercise is failed, the exercise is failed.