

The Test Carrousel for examination, assessment and validation



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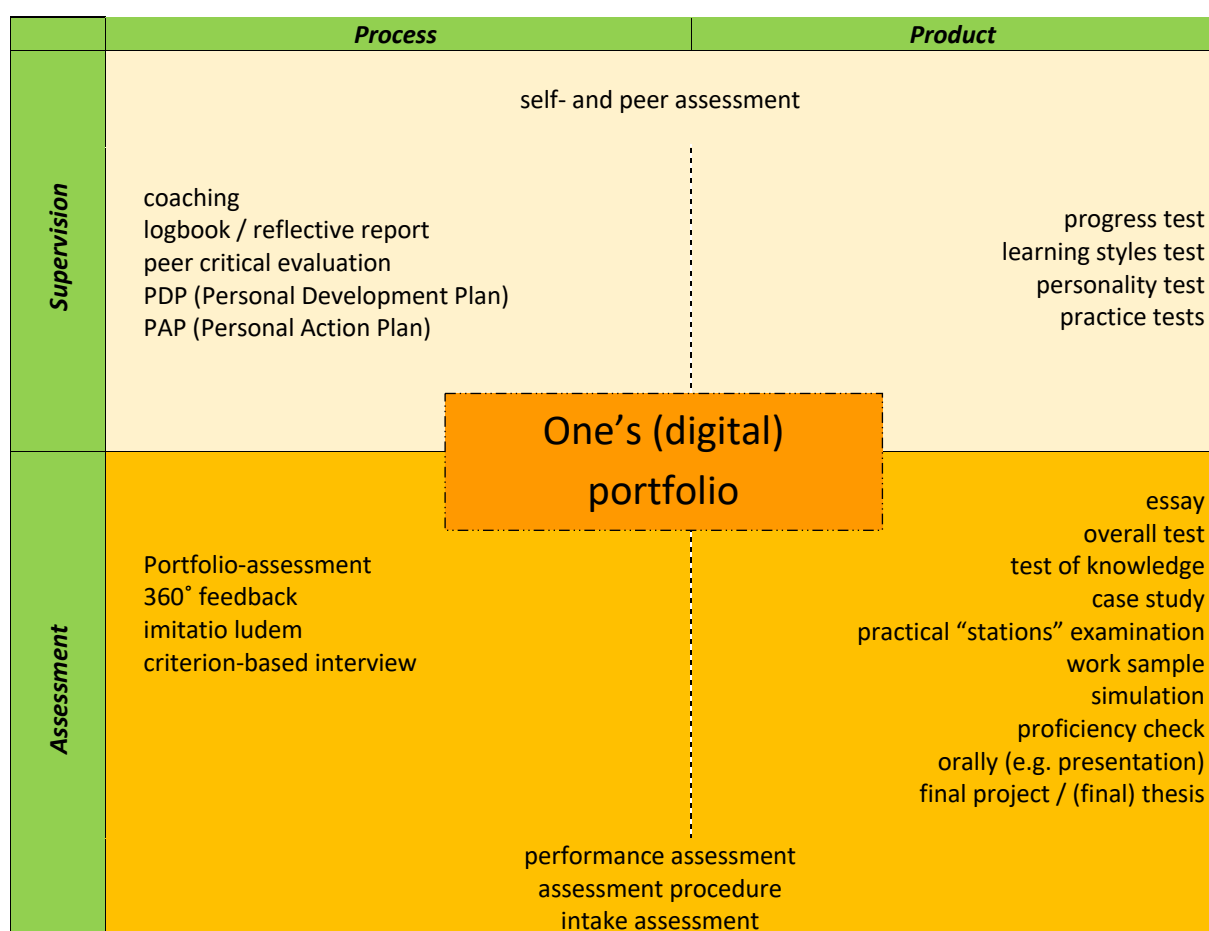
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Assessment-methods in a competency-based learning environment

There is a large number of testing methods in a competency-based learning environment. This working model is based on the functions of testing - supervision and assessment - the role of feedback - and the focus of testing, namely process and product.¹

By positioning function and focus on two axes, four quadrants are formed, into which testing methods are placed. The portfolio is included at the heart of the model because in that testing method, all the components merge. Based on the mix of methods, choice(s) at an organisational level is/are made from each of the four quadrants.



Self- and peer assessment have been included in the model shown in the figure as the input to the *supervision* of the learning process of the learner for both process and product-orientated testing methods. The adjectives in assessment that are used here indicate the method whereby the testing methods listed underneath them are used.

Self-assessment is aimed at reflection on one's own learning process; in this, the learner has insight into the evaluation criteria for the tasks. It is based on one's *self-evaluation* which stimulates learners to systematically

¹ Duvekot R.C. & Geerts, J. (Eds.) (2012). *Handbook for the assessment and validation of pedagogical competences of adult educators*. Timisoara, IREA/Brumar.

Duvekot, R.C. & Schuur, C.C.M. (eds.) (2014). *Building Personalized Learning. A handbook for creating a common theoretical background*. Vught, EC-VPL, Series VPL Biennale 3.

Jaspers, M. & Heijmen-Verstegen, J. (2004). *Toetswijzer competentiegericht begeleiden en beoordelen in het hoger onderwijs*. Eindhoven, COO.

Kappe, R. Smits, R & Bekker, E. (2011). *Training-model for assessors of Inholland University*. Amstelveen, ECI.

look at their own performance and improve it. It is subjective in nature and there is no comparison possible between learners because of diversity of assessment standards.

With *peer assessment*, learners assess each other using assessment criteria. It focusses on reflection, and in addition on collaborative learning.

Performance assessment, *assessment procedure* and *intake assessment* are included in the model in the figure as input to the *evaluation* of the learning process of the learner for both process and product-orientated testing methods. 'A *performance assessment* is an integrated assessment point by the course of the learner's actions and behaviour in a situation that is critical for the profession. This method of testing is used to gain insight into the mastery of competencies which are characteristic for a profession or of decisive significance. The evaluation takes place by means of a standardised observation by qualified assessors, who are trained in observing, recording and evaluating assessments. In this way, reliability is guaranteed as much as possible.'

An *assessment procedure* - also called assessment centre method (ACM) - has a reliable predictive value on performance in work as well as training and learning potential. In principle, it makes use of a variety of instruments, such as those shown in the lower half of the model in the figure. An assessment procedure is costly to develop and to maintain. It requires specific training and continuing development of assessors, their competences are essential for the quality of the assessment procedure.

The *intake assessment* focuses on mapping accreditation or competencies previously acquired elsewhere together with an assessment of potential so as to be able to issue an opinion on the possibilities for (sideways) integration into a given course and competencies still to be developed. It forms the basis for the decision on the training route for a learner and therefore provides input for the personal development plan (PDP).

The Test Carrousel for examination, assessment and validation

The list below contains the most commonly used forms of testing when examining, testing, validating or assessing 'what has been learned'. This list is not exhaustive.

1 (digital) Portfolio assessment	
<i>Purpose</i>	<ul style="list-style-type: none"> - (Self-)assessment of the student - Supervising the student's learning process - Presenting the competences and competence development of the student
<i>Features</i>	<ul style="list-style-type: none"> - Looking ahead, reflection and providing insight into the learning process - Authentic image of the student - Space for individual profiling of the student - Instrument for demand-driven curricula: based on the student's learning needs - Guidance and assessment tool - Content-oriented and development-oriented - Rich in evidence of competence - Interactive and longitudinal
<i>Function</i>	Reflective, summative and formative
<i>Design/design</i>	Student, education and field of work
<i>Those involved</i>	Student, fellow student, education and field of work
<i>Feedback</i>	Continuous
2 Self-assessment	
<i>Purpose</i>	<ul style="list-style-type: none"> - Formulating the documentation of personal learning experiences and results - Reflecting on the personal value of these experiences/results - Possibly and if desired, organizing a peer-reflection on the self-assessment. - Answers the questions: who am I? What have I done in my life so far? What is the value of my experiences? - Provide a framework for the development of a personal action plan, based on the enhanced self-insight into knowledge and ability and the creation of new perspectives in the life areas of work, learning and living.
<i>Features</i>	<ul style="list-style-type: none"> - The test form can be the starting point of an assessment procedure or validation assessment, in which the previous learning experiences are assessed summatively and/or formatively with a view to learning objectives, career or social perspective. - To sketch an authentic picture of personal values, strength & weakness, passion and mission. - Personal ad: who I am, my skills and expertise and motivations. - Reflective process (personal and/or in groups (in learning teams)) - Possibility of a structured approach to the test form in a guided session - Via portfolio assessment option to certification in personal career management
<i>Function</i>	Reflective
<i>Design/design</i>	Student, other students, portfolio trainer/guide
<i>Those involved</i>	Trainer/tutor, possibly an assessor to assess the personal action plan
<i>Feedback</i>	Feedback from trainer, assessor and/or fellow students on the portfolio and the personal action plan of the student

3	Criterion-based interview
<i>Purpose</i>	Assessing competencies by means of in the past concrete perceptible behaviour and/or making explicit the behaviour shown in the past in order to evaluate and reflect on that behaviour by means of a specific questioning methodology (STARRTT: situation - task - action - result - reflection - transfer - theory).
<i>Features</i>	<ul style="list-style-type: none"> - Valid if structured and based on professional analysis - Criteria have been announced to the student in advance - The quality of the interview is strongly dependent on the qualities of the interviewer
<i>Function</i>	Summative, formative
<i>Design/design</i>	Education and possibly student(s)
<i>Those involved</i>	Trained interviewers who can apply the STARRTT methodology
<i>Feedback</i>	Multi-criteria feedback on the student's actions and/or competencies
4	Thesis / graduation project
<i>Purpose</i>	Examination of being competent at master's level.
<i>Features</i>	<ul style="list-style-type: none"> - Task is performed in an authentic context - Student is aware of the assessment situation - Analytic way of assessment - In general, the validity is relatively high - Student is given the opportunity to prove his competence by himself. - Labour-intensive - Contributes to the further development of the profession (innovative capacity)
<i>Function</i>	Summary
<i>Design/design</i>	Education and student
<i>Those involved</i>	Assessor of the training and, if possible, of the workplace.
<i>Feedback</i>	A final assessment, which concerns the combined assessment of the following aspects: to what extent the student can function as an independent professional; to what extent the student is able to critically assess his own product and himself.
5	Oral (including presentation)
<i>Purpose</i>	The ability to present, reason, communicate and discuss a subject orally.
<i>Features</i>	<ul style="list-style-type: none"> - Low reliability - Difficult to guarantee validity - Very strict rules on acceptance and procedure required - This type of test is generally not recommended because of its high degree of subjectivity. - The subject of the test is known in advance: the content, the presentation as a skill or both. - Oral is always taken in conjunction with other test forms
<i>Function</i>	Summary
<i>Design/design</i>	Teacher teams and possibly students
<i>Those involved</i>	Assessors
<i>Feedback</i>	Mostly orally immediately after collection.
6	Skills test
<i>Purpose</i>	The test checks whether the student has the required skills, or can demonstrate that certain professional skills are being performed correctly and adequately.
<i>Features</i>	<ul style="list-style-type: none"> - Training of observers increases reliability - Criteria lists of the assessment may be more detailed or more general in nature, depending on the purpose of the assessment. - Generally ensure sufficient validity - The duration of the assessment should be long enough, this is a problem in the implementation. - Labour-intensive
<i>Function</i>	Summary
<i>Design/design</i>	Teacher's teams and possible field of work

<i>Those involved</i>	Trained assessors
<i>Feedback</i>	A grade and an oral or written explanation. The feedback can be given by the assessors/teachers, fellow students and the student himself (reflection).

7	Simulation, performance assessment
<i>Purpose</i>	Measuring one or more competencies in a realistic, standardized situation
<i>Features</i>	<ul style="list-style-type: none"> - Simulated real-world work environment in role-playing - Focused on customer/learner skills - Standardized situation - Approaches the authentic situation - Requires a lot of preparation - Different types of simulations: the simulator, the conversation simulation, the computer simulation and the actor simulation.
<i>Function</i>	Summative, reflective
<i>Design/design</i>	Training teachers and professional field
<i>Those involved</i>	Trained observers who assess through a list of assessment criteria
<i>Feedback</i>	A score that can be included in the portfolio and in a Personal Development Plan (PDP) or Personal Action Plan (PAP).

8	Worksample / labour test
<i>Purpose</i>	Testing of competence and knowledge and skills.
<i>Features</i>	<ul style="list-style-type: none"> - Task is performed in an authentic context - Student is aware of the assessment situation - Very realistic way of judging - In general, the validity is relatively high - High degree of acceptance for both the person to be assessed and the assessors - Development is relatively expensive - The decrease takes a lot of time, which keeps the number of tasks to be performed to a minimum. This can lead to wrong conclusions.
<i>Function</i>	Summary
<i>Design/design</i>	Training instructors and professional field, possibly a student
<i>Those involved</i>	Assessor of the training and of the workplace, possibly the client or the patient
<i>Feedback</i>	A final grade, which concerns the combined assessment of the following aspects: to what extent the student can function as an independent professional; to what extent the student is able to critically assess his own product; the quality of the student's product and how this comes across to others.

9	Station exam
<i>Purpose</i>	Testing method in which the student, on the basis of various controlled (simulation) settings, has mastered and is able to perform a representative series of skills and, if possible, can respond briefly. The student learns that skills are an essential element of vocational training. Practicing it makes perfect sense. The student also learns to work under time pressure and to carry out a variety of different skills within a time frame of 1-2 hours. Knowledge assessment (see above) can be included in a ward test.
<i>Features</i>	<ul style="list-style-type: none"> - Series of skills that the student carries out according to the assignment in a set period of time in a set number of rooms - A room is called a "station". - The executed skill is immediately observed - A station exam consists of a circuit of multiple stations (8-12).
<i>Function</i>	Summary
<i>Design/design</i>	Teachers/test developers in consultation with the professional field
<i>Those involved</i>	each station, the student is assessed by an observer. The observer is a trained expert or a trained simulation patient with an assessment form. The reviews are completed on a scanning form for automatic (or manual) processing.
<i>Feedback</i>	Assessment on a 5-point scale: insufficient /moderate /sufficient /spacious enough /good

10	Case study
<i>Purpose</i>	Assessing the level of knowledge and skills of a student by means of a problem or case description, in which an appeal is made to the problem-solving ability of the student.
<i>Features</i>	<ul style="list-style-type: none"> - Problem or case, derived from the professional practice - Generic competences are tested - Occupational specific knowledge is tested - Can be part of a knowledge test or omnibus-test - Stimulates multidisciplinary and creative thinking in the student
<i>Function</i>	Summary
<i>Design/design</i>	Teachers/key developers via information from the work field
<i>Those involved</i>	Teachers/test developers and possibly work field and/or fellow students
<i>Feedback</i>	Possibly a follow-up discussion or final discussion with an explanation of the quality of the analysis of the student, quality of the problem solving, way of working of the student.
11	Knowledge test
<i>Purpose</i>	Determining the student's level of professional and subject-specific knowledge.
<i>Features</i>	<ul style="list-style-type: none"> - Different manifestations: tests with closed questions or with open questions or with a combination of both - Can be purchased via paper or computer - In the case of large groups and closed questions, reliability and validity can be easily mapped out. - In the case of closed questions, the test can be checked automatically, offers possibilities for checking the reliability of the test - Often taken at the end of a certain study period
<i>Function</i>	Summative; very good to use also formative as a practice test
<i>Design/design</i>	Content expert lecturers/test developers of the study programme and possibly students or professional field
<i>Those involved</i>	Teachers/test developers of the programme
<i>Feedback</i>	Result, usually a figure calculated from the correct and incorrectly answered questions. If possible, broken down by knowledge area within the test. If automated, also a comparison with the results of the other students in the group.
12	Omnibus test
<i>Purpose</i>	<p>The Omnibus test focuses on five competences and measures to what extent the student:</p> <ol style="list-style-type: none"> 1. A new problem or aspect of a problem situation can be <i>defined</i> by previously studied relevant concepts, models or theories; 2. <i>Analyzing</i> a new problem; 3. The results of the analysis can <i>synthesize</i>; 4. <i>Arguments in favour of</i> possible solutions or decisions to be taken; 5. <i>Evaluate</i> solutions or decisions.
<i>Features</i>	<p>The Omnibus test is developed in a problem-based curriculum. It measures problem-solving skills and has ten characteristics:</p> <ol style="list-style-type: none"> 1. Each test question is based on, and refers to, problem situations as described in articles; the articles describing the problem situations are different in nature. 2. The test is based on a set of articles. 3. The articles describe a problem situation in its entirety. 4. The problem situations were discussed during the educational group meetings. 5. Problem situations are approached from different disciplines. 6. The problem situations are studied during a self-study period. 7. The test questions focus on core aspects of the problem situations. 8. Both closed and open-ended forms of demand are used, whereby both forms of demand focus on a specific level of control. 9. The button has an open-book character. 10. The test is constructed by a multidisciplinary team.
<i>Function</i>	Summary
<i>Design/design</i>	Multidisciplinary team of lecturers/test developers

<i>Those involved</i>	Multidisciplinary team of lecturers/test developers; also, possibilities for co- and peer assessment
<i>Feedback</i>	Students indicate that they need to discuss the possibilities and limitations of what they have learned from variants of the problem task.

13	Essay
<i>Purpose</i>	Testing knowledge, understanding, insight and application of knowledge.
<i>Features</i>	<ul style="list-style-type: none"> - Reproduction of facts - Laying of combinations or applications of knowledge - Answers consist of enumerations, reasoning, arguments and arguments. - Response key required - Reliability is a tricky issue: there are often multiple interpretations possible by the assessors, despite the answer key. - Fast construction versus long correction time - Language is key - Wide range of applications - Student has to formulate his own answers
<i>Function</i>	Summary
<i>Design/design</i>	Multidisciplinary team of lecturers/test developers, where possible coordinated by a test committee
<i>Those involved</i>	Content expert lecturers/test developers of the programme, who are part of the multidisciplinary team.
<i>Feedback</i>	The test results give the student insight into strengths and weaknesses through differentiation into separate scores.

14	360° Feedback
<i>Purpose</i>	Assessing competencies that are central in the workplace, in graduation projects and project education. Examples are social and management competencies or oral communication.
<i>Features</i>	<ul style="list-style-type: none"> - Direct way to gather information about behavioural competencies - Deployment of multiple assessors results in high reliability and validity - Time consuming for many people involved - Depends on good intentions and discipline of the actors involved - Not usable for selection purposes - It only makes statements about competencies 'shown' by the student in the current context. - Written questionnaire filled in by the student, persons at the workplace, the placement supervisor at the workplace and possibly also the placement supervisor of the educational institution.
<i>Function</i>	Summative, provided that the requirements of reliability and validity are met. This key can also be used formatively.
<i>Design/design</i>	Coach and/or Academic Advisor
<i>Those involved</i>	Anyone who "knows" the student (in that situation)
<i>Feedback</i>	Feedback on the student's actions and/or competencies from a number of angles.

15	Personality test
<i>Purpose</i>	Giving insight into the personality of the student and establishing a relationship with the profession for which the student is being trained via a portfolio.
<i>Features</i>	<ul style="list-style-type: none"> - Predictive validity for some personality traits in specific situations - Easy and cheap to maintain - Risk of Privacy Threat - Language test
<i>Function</i>	Formative, may never be used summative from an ethical point of view.
<i>Design/design</i>	Existing and proven personality tests
<i>Those involved</i>	The student and possibly the Academic Advisor or Coach
<i>Feedback</i>	Insight into personal characteristics and motives

16	Imitatio ludum (imitation game) © Ruud Duvekot, 2018
<i>Purpose</i>	Organizing feedback on how to act in professional situations by inviting pupils (internship/workplace), students (learning team) or colleagues (workplace) to imitate the personal actions.
<i>Features</i>	<ul style="list-style-type: none"> - Limited to reflecting on others' own actions. - Enlarging the personal action for the purpose of analyzing personal characteristics in specific situations - Requires a safe context and setting, with mutual trust that actions are imitated critically but not negatively. - Performance preferably after a well-executed internship, completion of a certain task or at the end of a period. - Video recording is desirable in order to analyze the imitated behavior and to realize improvement actions.
<i>Function</i>	Reflective
<i>Design/design</i>	The student in cooperation with the coach/mentor/student counsellor.
<i>Those involved</i>	Depending on the context: pupils, students, colleagues
<i>Feedback</i>	Insight into personal characteristics and feedback from various angles on the explicit/implicit actions of the student