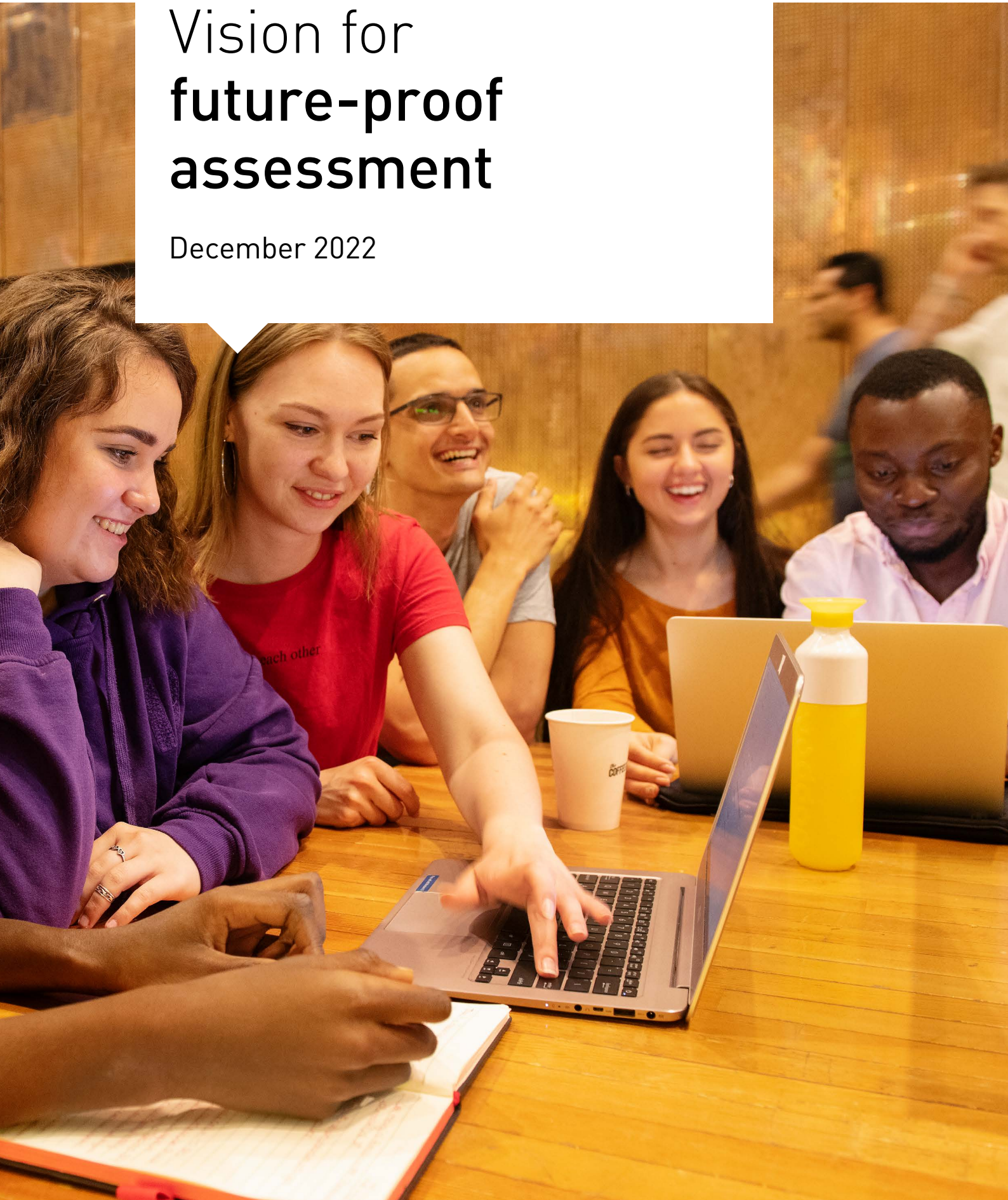
VRIJE UNIVERSITEIT AMSTERDAM

# Vision for **future-proof assessment**

December 2022



# Content

# 1. Vision for future-proof assessment

Assessment is an integral part of education. Because education and assessment are intertwined, this assessment vision also addresses the learning process (education). The assessment vision tries to clarify the relation between the learning process and assessment.

It is common to distinguish between formative and summative assessment.
Summative assessment focuses on determining whether the learning objectives have been achieved. Associated with summative assessment are evaluations and progress decisions. Formative assessment has been interpreted by the working group as a formative dialogue.[1] The formative dialogue is an essential part of the learning process and focuses on answering three formative questions: what the student is working towards (feedup), where the student is standing now (feedback) and how the student can grow towards the desired situation (feedforward).[2] When the learning process and summative assessment are well balanced, the formative dialogue and summative evaluation moments complement each other.

The assessment vision aims to describe how the learning process and assessment can relate to each other and invites programme management and teachers to search for the optimal balance between formative dialogue and summative evaluation moments.

1 It can be noted here that formative dialogue does not need to take place exclusively verbally, but can be manifested in teaching in various ways.

2 Dominique Sluijsmans and Mien Segers, 'Wat is nodig voor een toetsrevolutie in het hoger onderwijs? Vijf kernboodschappen voor de praktijk', in: Dominique Sluijsmans en Mien Segers (ed.), Toetsrevolutie: Naar een feedbackcultuur in het hoger onderwijs (Culemborg, Uitgeverij Phronese, 2018) 216-232: 222..

## 1.1 The VU educational vision

The core values open, personally engaged, and responsible guide education and assessment at the VU. The VU is open to diversity in society and in students. Based on trust, respect and interest, differences in an open dialogue lead to new insights and development.[3] The *community of learners*[4] at VU creates optimal conditions for students to go through their personal learning process. Through active blended education, students are challenged with active learning tasks that match their personal learning needs.[5] This includes reflection on personal development. Programmes encourage students to take responsibility for their own learning process, but also for the world outside the university.[6] The VU wants to educate students who are involved in society.[7] They have an open attitude towards what is going on in society and what society needs. This document further specifies the educational vision in a vision of future-proofing assessment.

## 1.2 Focus on the learning process: the core value 'open' in assessment

Student development is central to education at VU, and the formative dialogue is crucial in this respect. This open dialogue is an important part of the learning process. The learning process is fed by three formative questions: what is the student working towards (feedup), where is the student standing now (feedback) and how can the student grow towards the desired situation (feedforward).[8] These questions guide each individual student's personal learning process.

To enhance the learning process, it is important to have an open feedback culture. Students learn to be receptive to feedback and learn to use it in their learning process. They also learn to actively give feedback themselves. Giving, receiving and using feedback are skills that students also need after their studies to continue developing throughout their lives. Daring to give and receive feedback presupposes a safe learning environment. Learning involves making mistakes.

For assessment, this implies that students can repair inferior performance on exams and that the subject matter is repeated. This leads to a development-oriented form of assessment, aimed at the development of students during the learning process.

**From the core value 'open' follows design principle 1:**

**Assessment is an integral part of the learning process**

a. A safe learning environment is essential for the learning process
b. The learning process provides sufficient space for an open formative dialogue

## 1.3 Ownership: the core value 'personally engaged' in assessment

The educational vision states that the VU wants to offer students the opportunity to discover and flourish their own personal talents and take responsibility for their own learning process and study success.[9] When students feel ownership of their own learning process, motivation increases. As owners, they are not a passive consumer of education, but an active partner who is part of the education and thus involved in their own learning process.[10] With that comes thinking about how they can demonstrate that they have achieved the learning objectives and start working on that.[11] Students need different ways of assessment and guidance depending on the phase they are in (within a study programme or within a programme component). This requires a focus on developing the right skills in students to take and experience responsibility for the learning process.

**From the core value 'personally engaged' follows design principle 2:**

**Assessment gives students the opportunity to experience ownership of the learning process**

3 VU Strategy, 13.
4 VU Educational Vision concretised, 6, 7, 12.
5 VU Educational Vision, 7.
6 VU Educational Vision, 7, 9.
7 VU Educational Vision concretised, 3.
8 See footnote 2.
9 VU Educational Vision concretised, 11.
10 See also 'The student as a partner in innovation and education' in: VU Educational Vision, 12.
11 VU Educational Vision, 11.

## 1.4 Work field and society: the core value ‘responsible’ in assessment

The VU wants to be at the centre of society and make a societal contribution through its activities.[12] The VU therefore wants to teach students to relate ‘to today’s increasingly complex and diverse society’.[13] The increasingly complex society, and the constantly changing work field, calls for more attention to acquiring specific skills in academic programmes. Think of problem-solving skills, self-regulation and socio-cultural communication.[14] However, building a knowledge base remains important: skills are coloured by an academic discipline and are therefore preferably taught and assessed within the context of the theoretical education of the discipline.

A programme’s learning outcomes evolve with changes in the needs of society and the work field (academic and non-academic). This requires the programme management to be open to changes in society when regularly reflecting on the learning outcomes. According to the principle of *constructive alignment,* a change in learning outcomes will demand that assessment is also revised.
The VU encourages teachers and students to contribute to solving societal problems.[15] In education, this is reflected in assignments that connect to societal problems, such as Community Service Learning.[16] These assignments are characterised by the scientific approach to societal problems. The connection with society can also be expressed by using reality-based assignments within the assessment, where the assignment is relevant to the professional field. Assessing students on products they will also produce in working life after graduation will inspire students, clarify the relevance of the study and increase the learning effect.

**From the core value ‘responsible’ follows design principle 3:**

**Assessment prepares for acting in the professional field and society**

a. In training courses, theory and skills are also assessed in conjunction
b. Assessment contains reality-based assignments

12 VU Educational Vision, 5.
13 VU Educational Vision concretised, 11.
14 Ministerie van Onderwijs, Cultuur en Wetenschap, *Strategische agenda hoger onderwijs en onderzoek: Houdbaar voor de toekomst* (Den Haag, 2019) 72.
15 VU Educational Vision, 9.
16 VU Educational Vision concretised, 20.

# 1.5 The basic conditions: assessment quality

To determine whether students have achieved the required final level after graduation, it is important that assessment is valid, reliable, usable, comparable and transparent. The basis of this is the principle of *constructive alignment*: based on the learning objectives, it is determined what is assessed and how the assessment is done. This means that those forms of assessment are selected that match the learning objectives.
At programme level, the composition of a diverse assessment programme is in line with the programme's learning outcomes.

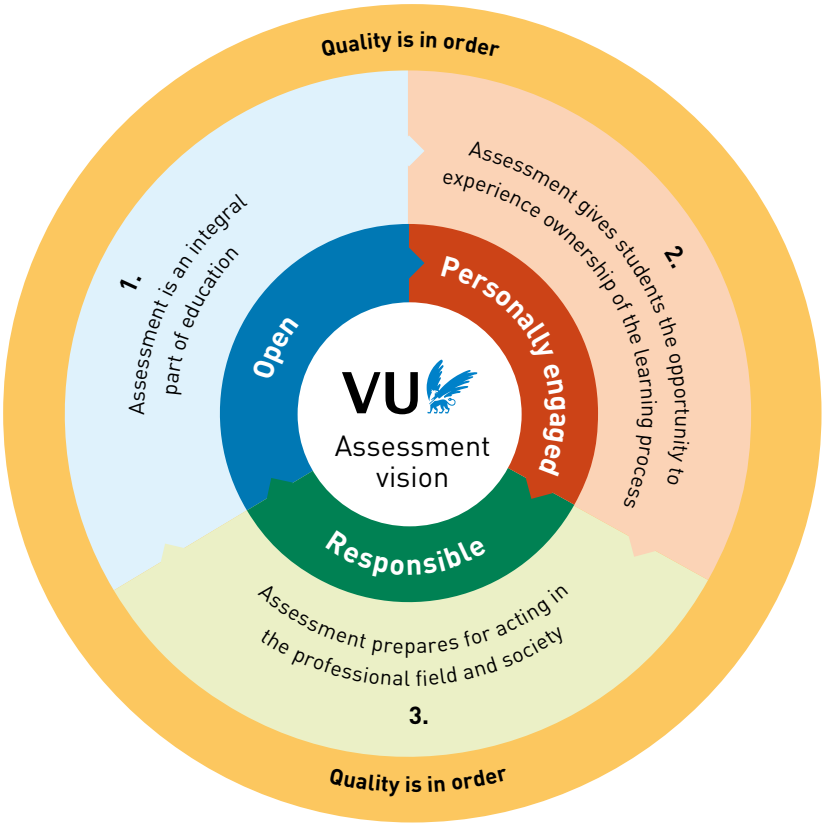
In the context of quality control and assurance, it must be transparent and traceable how a summative decision was reached.

**The basics:**

**Quality is in order**

a. Assessment aligns with learning outcomes and learning objectives
b. Assessment is traceable

**Figure 1: The vision on assessment in relation to the core values of the VU.**




The draft principles for future-proof assessment are intended to serve as a basis for all programmes at VU. They form the foundation of a programme's assessment programme. Programmes make choices in the focus they place on the various design principles, depending on the nature and educational vision of the programme. When designing the assessment of a course unit, a learning pathway/minor or a programme, the teacher or programme management considers the alignment of the assessment programme with the design principles.

# 2. The assessment vision in practice

To give educational professionals insight into how application of the assessment vision can make their assessment more future-proof, the design principles are explained in more detail in the text below.

Each design principle is elaborated at three levels: programme component, learning pathway/minor, study programme. For illustration and inspiration, the text is supplemented with boxes containing examples of *best practices*. For each *best practice* an indication is given to what extent the various design principles are expressed in the *best practice*, as most *best practices* combine several design principles. Finally, for each design principle the opportunities and challenges for the organisation are mentioned.

The basic conditions belonging to 'The quality is in order' form the foundation of all assessment at the VU. They are essential everywhere in higher education and therefore not new to the VU. The basic conditions are therefore not further elaborated in this chapter.

## 2.1 Design principle 1

**Assessment is an integral part of the learning process**

a. A safe learning environment is essential for the learning process
b. The learning process provides sufficient space for an open formative dialogue

The first design principle emphasises the intertwining of teaching and assessment. During teaching, an open dialogue continuously addresses the formative questions[17] that provide both students and teachers

17 The three questions related to feedup, feedback and feedforward (see also page 4).

with information to adjust the learning process. These questions stimulate the learning process of students. Much attention to the formative dialogue will benefit the learning process because it draws attention to development and improvement. This promotes motivation to keep developing. Summative forms of assessment evaluate whether students have reached the desired level. As soon as assessment contains a summative element, the focus is on the judgement and any associated decision. Summative assessment distracts from the improvement perspective. A focus on student development therefore requires careful planning of summative evaluation moments.

Educational design considers both the quantitative and qualitative relationship between formative and summative forms of assessment. When the learning process and summative evaluation moments are well balanced, the formative dialogue and summative assessment complement each other and both are put to optimal use. Formative forms of assessment are most effective when the insights gained are used in a subsequent (pre-conceived) step.[18] In a carefully considered balance, assessment is embedded in the learning process. This can lead, for instance, to a learning path in which many formative forms of assessment are combined with a few summative evaluation moments, or a learning path in which information about student development is collected at many moments, which add up to a joint summative decision.

Here it is important to keep in mind that the division between formative and summative is not black-and-white: the formative dialogue can lead to summative assessment, and summative assessments can serve as input for the formative dialogue. Summative assessment is essentially a form of feedback: it looks at where students stand (relative to the norm).

In teaching practice, however, it is advisable to separate formative dialogue and summative evaluation in time where possible, so that both are better served. Formative forms of assessment provide room for development and improvement, where summative assessment implies an end point and thus motivates students less to use any feedback given meaningfully in their learning process.

## Level: programme component

When organising teaching within a programme component, the teacher determines the relationship between formative and summative forms of assessment. To promote the learning process, the teacher provides a formative dialogue with several feedback moments during the programme component. This feedback can be arranged in different ways appropriate to the programme component, such as via formative interim exams, peer feedback, oral feedback. Here, it is important to determine when and in what way it is established whether students have achieved the learning objectives of the programme component and how the outcomes of the summative activities are recorded. Formative assessment forms and summative assessment moments are aligned.

### Students formulate their own formative multiple-choice questions

Peerwise is used in the bachelor's programme Pedagogical Sciences (FGB). Peerwise is a tool in which students can make up multiple-choice questions for each other and then answer each other's questions. The teacher keeps track of the submitted questions. In this way, students are actively engaged with the material, they help each other and it becomes clear to both the teacher and the students which knowledge has already been mastered and which still needs to be worked on. This is a great example of students taking each other to the next level.

Want to know more? More information can be found via this link (in Dutch).

Design principle 1: ●●●●●
Design principle 2: ●●●
Design principle 3: ●

Level: programme component

18 René Kneyber, Dominique Sluijsmans, Valentina Devid and Blanca Wilde López, *Formatief handelen: Van instrument naar ontwerp* (Culemborg, Uitgeverij Phronese 2022) 14-16.

## Peer feedback with FeedbackFruits

In the Pharmaceutical Sciences and Drug Discovery and Safety (BETA) programmes, peer feedback is used in several programme components. The FeedbackFruits tool is used for this purpose.

In the programmes, students regularly give feedback on work made by fellow students, including research papers, motivation letters, working group assignments, presentations, as well as on collaboration in group work. The feedback is given using the same criteria that teachers use to assess the final assignment. This increases the similarities between the learning activities and the final assessment, which creates a feeling among students that the assignments are truly meaningful. There is room for a dialogue about and reflection on the feedback and how it can be used to improve their own work. Unlike the final assignment, students do not receive a grade for the assignments on which feedback is given. However, making these assignments and giving the feedback is mandatory. In case of feedback of insufficient quality or missing an assignment, students have to complete an additional assignment. In addition, the related meetings are less meaningful for students when they have not done the preparatory work (*flipped classroom* principle).

In this way, peer feedback is instructive for both the students giving feedback and the students receiving the feedback. Also, this formative form of assessment works activating. It is an example that the formative dialogue can also take place between students.

Design principle 1: ●●●●●
Design principle 2: ●●
Design principle 3: ●

Level: programme component

## Team-based learning

In the bachelor's programme Communication Studies, the programme components News and Journalism and Introduction to Communication Studies use the teaching model of team-based learning. In the bachelor's programme Dentistry, team-based learning forms a structural part of all basic subjects in the first two years.

Team-based learning is a form of guided discovery learning, in which students are taught to apply knowledge and think about diverse and complex issues in teams. Students work in a fixed sequence of individual learning and joint analysis and application of knowledge. This model uses two exams: the individual Readiness Assurance Test (iRAT) and the team Readiness Assurance Test (tRAT). These tests are identical, with the difference that the first exam is taken individually by students, and the second exam in groups. As a team, students try to figure out the correct answer to each question by interacting with each other and comparing and discussing each other's individual answers. The team gets immediate feedback on whether the answer is correct. If not, the team keeps trying until the correct answer is found. The number of points earned from a question depends on the number of attempts needed to find the correct answer.

The team can also file an appeal if they disagree with the question or answer. With sound argumentation, they can convince the teachers that the question is wrong and that their answer is correct. Teachers review this and decide whether to grant the appeal based on the strength of the argumentation. In that case, the answer is considered correct in the final evaluation.

This form of assessment stimulates discussions between teammates, which then provides more depth to the material. As such, it is also a great example of formative dialogue between students. By putting together heterogeneous teams, students learn the most from each other. Therefore, this is also an application of the Mixed Classroom model. Furthermore, it is an example that formative dialogue can also take place between students.

Want to know more? Via this link more information can be found on team-based learning.

Design principle 1: ●●●●●
Design principle 2: ●●
Design principle 3: ●

Level: programme component

### Feedup, feedback and feedforward

In the Integration Practicum course (part of the BSc Interdisciplinary Social Studies) at the University of Amsterdam, students determine their personal learning goals in the areas of problem-solving and collaboration skills at the beginning of the course (feedup). During the course, students have to monitor their own progress (feedback) and learn to reflect on their own actions and learning by writing reflection reports. At the end of the course, students are able to set new personal learning goals based on their previously accumulated self-knowledge (feedforward).[19]

Design principle 1: ●●●●●
Design principle 2: ●●●●
Design principle 3: ●

Level: programme component

19 Ilja Boor, Debby Gerritsen, Linda de Greef and Jessica Rodermans, *Meaningful assessment in interdisciplinary education: A practical handbook for university teachers* (Amsterdam, Amsterdam University Press, 2021) 15, 20.

## Level: learning pathway/minor

Teaching (complex) skills cannot usually be achieved within one programme component. For this reason, it is advisable to offer (complex) skills in continuous learning pathways. A learning pathway is defined as a learning pathway that comprises several programme components, in which students progress towards the complex final level. Preferably, only at the end of the learning pathway summative evaluation of the learning objectives takes place.

When assessment is an integral part of the learning process, skills and theory can be assessed more cohesively. This involves identifying which learning outcomes require development-oriented assessment, after which continuous learning pathways are developed. When developing learning pathways, it is first determined which programme components are part of the learning pathway. Then, for each programme component, it is determined which formative and summative forms of assessment are appropriate for the combination of theoretical content of the subject and the skills from the learning pathway, and how these are filled in, taking *constructive alignment* into account.

## Programmatic assessment in the master's programme Dentistry

Since academic year 2020/2021, ACTA is working with Entrustable Professional Activities (EPAs) within some clinical learning pathways of the master's programme Dentistry. EPAs are 'observable tasks/responsibilities entrusted to sufficiently competent students in the programme.'[20]

With the introduction of the EPA system and the associated digital portfolio, assessment within these learning pathways has been set up according to the principles of programmatic assessment: instead of a system of only high-stake assessments, the student's development towards the intended final level is considered. With the implementation of the EPA system, ACTA aims to ensure that student development takes place in a gradual and insightful manner. Insight into the student's development arises through a mix of data points where each data point is feedback-oriented.[21] Students continuously collect evidence of their development into independent healthcare professionals via EPA forms and other feedback forms in the portfolio.

Guidance in the clinic focuses on the following questions: 'What action do I entrust the student-in-training with?' and 'What guidance is needed in the process?' That guidance is determined according to the difficulty of the case and the student's competence on an EPA.

Students choose which EPA they want to complete, although a set minimum distribution of EPAs must be met. After each clinic day, an EPA form is saved in the digital portfolio. The student first completes this form themselves. After the student's self-assessment and reflection is completed, the teacher provides feedback on it. The form concludes by establishing the retrospective supervision level, which records how much supervision was needed that day. Dashboards are included in the digital portfolio, allowing both students and teachers to quickly understand the student's development. Based on the entire portfolio, a final summative evaluation is given at the end of the clinical pathway.

Design principle 1: ●●●●●
Design principle 2: ●●●●
Design principle 3: ●●●●

Level: learning pathway/minor

## Formative dialogue in practice

At Applied Physics within the Bachelor of Engineering at Harvard University, the formative dialogue has been given a place. At the beginning of this semester-long programme component, students are informed about the learning outcomes (feedup) and immediately given a description of how the assessment of those learning outcomes can be brought to a successful end result at the end of the programme component (feedforward). During the programme component, students receive regular information about where they stand in the learning process (feedback). The grade is determined on the basis of different types of assignments. Students decide when they hand in the assignments. The assignments are not graded with a grade, but according to the scheme a) exemplary; b) meets requirements; c) revision required and d) not graded. This reduces the teacher's numerical stress and gives a good overview of how students are doing. After the first submission, students can improve their product based on feedback. The final grade is determined by the number of assignments assessed with an A or B.[22] In this way, the final grade is not a snapshot, but a reflection of what students have achieved during the semester. Students can make mistakes and learn from them to achieve an improved product, without directly affecting the final grade.

Design principle 1: ●●●●●
Design principle 2: ●●●●
Design principle 3: ●

Level: learning pathway/minor

20 Olle ten Cate, Huiju Carrie Chen, Reinier G. Hoff, Harm Peters, Harold Blok and Marieke van der Schaaf, 'Curriculum development for the workplace using Entrustable Professional Activities (EPAs): AMEE Guide No. 99', in: Medical Teacher vol. 37, no. 11 (2015), 983-1002.

21 Liesbeth Baartman, Tamara van Schilt-Mol and Cees van der Vleuten, *Programmatisch toetsen: Voorbeelden en ervaringen uit de praktijk* (Den Haag, Boom, 2020).

22 Ilja Boor, Debby Gerritsen, Linda de Greef and Jessica Rodermans, *Meaningful assessment in interdisciplinary education: A practical handbook for university teachers* (Amsterdam, Amsterdam University Press, 2021) 16-17.

## Level: programme

At the programme level, further integration of learning and assessment can also be strived for. Much attention to formative dialogue during the entire programme focuses attention on development and improvement. This promotes students' motivation to keep developing.

At the programme level, for each learning outcome it is determined which programme components contribute to the development of students towards these outcomes. Choices will then be made regarding the relationship between formative and summative forms of assessment in the various programme components. The assessment programme describes the contribution of the programme components to achieving the learning outcomes. Programme components can make a formative and summative contribution to achieving the learning outcome. Summative evaluation moments determine at the end whether students meet the learning outcomes. During the development of students summative evaluation moments can determine the intermediate level of students.

### Programmatic assessment in the Master's programme in Medicine

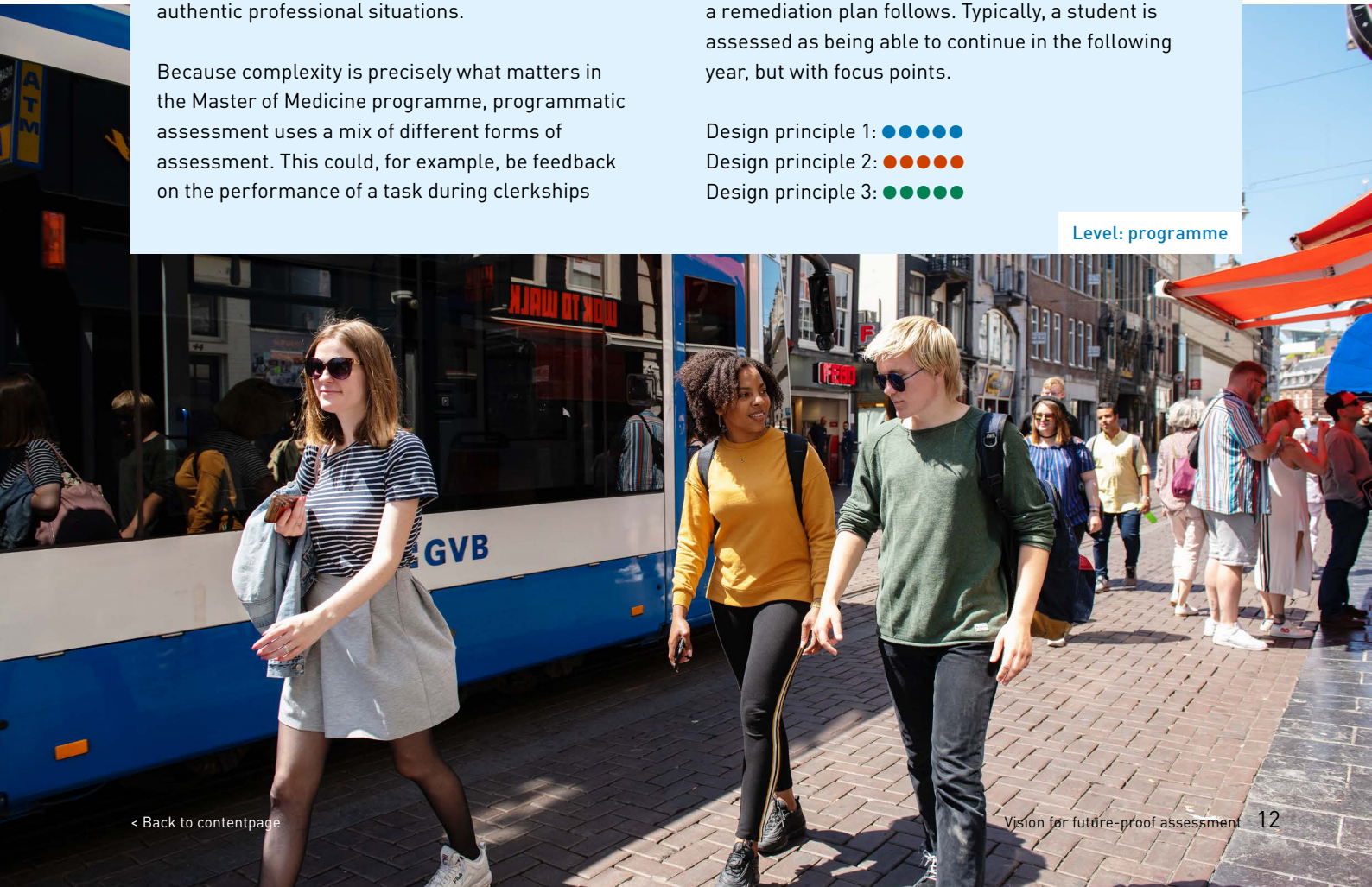
An example of integrated assessment at programme level is the programmatic assessment implemented in the Master of Medicine programme. According to this assessment concept, students learn not only before the assessment but also from the assessment. There is room for student development. As a result, students are not judged on one unsatisfactory result, but on a pattern over a longer period of time. Programmatic assessment is particularly suitable when complex skills or competences are involved that students learn to master during the programme. Students in the Master of Medicine programme develop these complex skills and competences during internships and clerkships (coschappen), where they deal with authentic professional situations.

Because complexity is precisely what matters in the Master of Medicine programme, programmatic assessment uses a mix of different forms of assessment. This could, for example, be feedback on the performance of a task during clerkships (coschappen), a result of a progress test or feedback on an essay. These are called low stake data points. Low stake means that no fail-success decision is made on the basis of a single exam. The term data point is used to indicate that it contributes to a series of data points leading to a decision. Data points primarily provide students with rich feedback. Students use this feedback to continue working on their learning goals. Data points are collected in a portfolio.

At the end of each master year, the master assessment committee decides whether or not the standard is met based on the data points in the portfolio. Two examiners independently assess a student's portfolio. Assessment takes place using holistic assessment criteria. When students have not met the standard, a remediation plan follows. Typically, a student is assessed as being able to continue in the following year, but with focus points.

Design principle 1: ●●●●●
Design principle 2: ●●●●●
Design principle 3: ●●●●●

Level: programme



# Opportunities and challenges

## Opportunities:

- Attention to the formative dialogue during teaching gives students and teachers a picture of where students stand in the learning process. This allows students to adjust learning strategies and teachers to adjust teaching.
- When students receive feedback on a summative exam for which they have scored a pass, they are less likely to use this feedback constructively for the learning process. By putting the formative dialogue at the forefront of teaching, feedback will optimally benefit the learning process. Assessment with feedback is most useful during a programme component and not at the end.[23]
- Students are encouraged to actively and continuously engage in their own learning process. During the learning process, students' development is regularly monitored, providing feedback that can serve as input for the learning process. This prevents students from acting only for a (all-important) final summative evaluation moment.
- Providing complex and academic skills in learning pathways in which assessment is integrated into the learning process allows students to develop in the mastery of these skills over a longer period of time based on the formative dialogue.
- In addition, integrating assessment into the learning process emphasises the intertwining of learning and assessment. This promotes the coherence that students experience throughout the programme. The benefit is that students are consciously engaged in their development towards the intended end point. After all, assessment and the associated feedback is used as information to further learning.
- When the learning pathway integrates assessment into the learning process, summative evaluation moments can be spread over the different components of the learning pathway. After all, not all learning objectives of the learning pathway that are addressed in a programme component need to be summatively evaluated upon completion of that programme component. This can lead to a reduction of summative evaluation moments and the associated workload for students and teachers.
- Formative forms of assessment can be designed in many ways. This gives the teacher the opportunity to work with creative work form. Students can benefit from a wide variety of feedback forms as input for their learning process. After all, variety can be motivating and not every student benefits from the same form of feedback: variety provides meaningful feedback for every student on a regular basis. Finally, the use of rich formative forms of assessment requires less from the (assessment) organisation. After all, a formative interim exam does not require surveillance.

## Challenges:

- To make best use of the feedback function of assessment in education, both teachers and students must be sufficiently skilled in giving and receiving feedback. This calls for feedback training for teachers and students and guidance for students aimed at dealing with feedback. Trainings for students should also focus on peer feedback.
- To optimise formative dialogue in education, a safe learning environment is essential. There must be room to make mistakes, because mistakes are instructive.
- For the formative dialogue to be meaningful, especially on complex(er) skills, it is necessary for teachers to have sufficient space to get to know students. As a result, the role of teachers shifts from directing to more guiding. This should be taken into account when designing guidance for students, especially in the later phase of the programme, when complex(er) skills become a more important component of education.
- Students need different forms of formative dialogue and summative evaluation depending on the stage they are in (within a programme track or within a programme component). For example, the optimal frequency, nature and extent of feedback and feedforward (the formative dialogue) will not be the same for a first-year bachelor's student and a final-year master's student.
- Further integrating the formative dialogue into teaching will initially require a large time investment from teachers.
- When skills are offered in continuous learning pathways with development-oriented assessment, it is important that the different teachers teaching in the learning pathway align both the formative dialogue and summative evaluation moments.
- To successfully track student development, a digital system in which students can compile and store collected feedback and other information about their own progress, such as an e-portfolio, is a prerequisite.
- Implementing changes at the programme level in the relationship between formative and summative forms of assessment often requires adapting the entire curriculum. Depending on the desired adjustments,

23 It does follow from the basic conditions 'The quality is in order' that it must at all times be traceable how the final grade was arrived at. This implies that assessment forms do contain information on what was done well and what was done less well.

this may involve introducing a new educational concept, which will often require a change in working methods and a lot of time.
- When introducing a new educational concept, such as programmatic assessment, it is important to do so completely. If a new concept is only partially or hastily introduced, the goal will not be achieved.

## 2.2 Design principle 2

**Assessment gives students the opportunity to experience ownership of the learning process**

In this design principle, student ownership of the learning process is central. Students are not passive consumers of the education offered, but active partners who are part of the education and thus involved in their personal learning process.[24] Students learn to build responsibility for their personal learning process. This ownership can be stimulated and expressed on both a small and larger scale during the programme.

Assessment that fits in with this gives students space to think for themselves how they can demonstrate mastery of the learning objectives or outcomes. Clear explanation of the learning objectives or outcomes at the start of the learning process (feedup) gives students the opportunity to reflect on how they can achieve the learning objectives and outcomes (feedforward) and can demonstrate that they have achieved them. In this way, the formative dialogue activates students to actively direct their learning process and gives students the opportunity to experience ownership of the learning process.

Teachers can encourage this by not communicating about the learning objectives or outcomes in the form of one-way traffic to students, but engaging in dialogue with students about them.

This can lead to alternative routes to achieve the learning objectives or alternative ways of demonstrating how the learning objectives have been achieved. Student reflection on how they have achieved the learning objectives will also increase ownership of the learning process. This can take the form of self-assessment, for example, in which students reflect on their own learning process in achieving a final product. The teacher evaluates the self-assessment, in which case students' final product need not be evaluated.

### Level: programme component

At the level of the programme component, students can be given the opportunity to contribute to the way in which it can be demonstrated that the learning objectives have been achieved. This can be done, for example, by not only introducing the learning objectives at the start of the study component, but also by entering into a dialogue with students on how these are expressed in the assessment. This could include involving students in the formulation of criteria used to assess whether students have achieved the learning objectives. This can be done by discussing how the learning objectives are expressed in a previously made product (from a previous edition of the programme component) or by having students themselves formulate (extra) criteria on which they would like to be assessed.

Students can also be given the opportunity to choose their own form of assessment, for example by letting them choose from several forms of assessment selected by the teacher. In this way, students can choose the assessment format that meets their personal needs, thereby accommodating the diversity in the student population. In a more extreme alternative, students are given complete freedom in how they demonstrate that they have achieved the learning objectives. Students thus choose the way they are assessed. Even if one form of assessment is offered, students may be given the opportunity to propose another form of assessment if they can demonstrate that this form of assessment is more appropriate in their case.

24 See also 'The student as a partner in innovation and education' in: VU Educational Vision, 12.

### Students determine their own form of assessment

In the honours course Big data meets small data (FSW), students can choose their own form of assessment to show that they have achieved the learning objectives. In groups of about five students, they conduct research on a topic of their own choosing, trying to combine quantitative social media analysis with qualitative research.

In the first meeting, the teacher discusses the learning objectives with students. This includes the question: how do they think they can show that they have mastered the learning objectives? The teacher invites them to look carefully at the assessment rubric. Students are told in this first meeting that they themselves can come up with a good idea to present the research. Some conditions: the product must show that they have achieved the learning objectives and the rubric must be applicable. Can't they come up with anything themselves? Then it will be a poster with a presentation.

Once the groups have started the research, they can announce their preferred form of assessment to the teacher. The latter checks with students whether the chosen form succeeds in showing that group members have achieved the learning objectives. This results in interesting and creative group presentations, such as a radio programme, a series of interviews, recorded presentations and, yes, still, posters with a pitch.

Design principle 1: ●●●●
Design principle 2: ●●●●●
Design principle 3: ●●

Level: programme component

### Self-assessment as a tool for increased learning efficiency

In the honours course Rebuilding Education, students are closely involved in their personal learning process through self-assessment. In the self-assessment process, students combine defining their personal learning objectives and project criteria with self-assessment of their own final project and work process. This means that in addition to their own course project, students are responsible for defining, monitoring and assessing the quality of the project and process themselves. The course coordinators support students in self-assessment through individual coaching and team support.

The starting point of self-assessment is a personal assessment form. At the start of the course, a blank assessment form is provided to students. This lists the four main components of the course, without formulating learning objectives and criteria. Students formulate their own team learning objectives and criteria for these four components during the course, while also working on a fifth, personal learning objective. Detailed examples of an assessment form are provided for support. During the course, the assessment form is updated during an individual coaching session, discussions with the project team and in own study time. The result is a personal assessment form with learning objectives, specified assessment criteria and an explanation by the student.

This method reinforces the learning process in several ways. First, it focuses students' attention on their personal learning by asking students at the start of the course: what do you want to learn from this course? Then, during the course, the learning process is reflected upon regularly when students update the assessment form. This ensures continuous attention to the questions of the formative dialogue, on the basis of which students can adjust their learning. At the end of the course, the completed assessment form provides a clear overview of the student's reflection on the personal learning process.

Want to know more? You can find out more about this course via the Rebuilding Education website (www.rebuildingeducation.com).

Design principle 1: ●●●●●
Design principle 2: ●●●●●
Design principle 3: ●●●

Level: programme component

### Freedom and frameworks: Free assignments in teaching and assessment

In the first-year course 'Ethnographic Monographs' of the bachelor's programme Social and Cultural Anthropology, students experiment with different ways of conveying a message. The content of conveying a message is a major topic of the course. So, in this course, form and subject are beautifully aligned.

In one of the assignments, students work together on a project, investigating the effect of a chosen form or medium on how a message comes across. In this, students jointly decide on the choice of form. Students' creativity has resulted in, for example, short films, poems, and websites as final products in this assignment. In a reflection report, students motivate the choices made, and reflect on what they have learned from them and how this connects to the learning objectives of the course.

The focus on course learning objectives promotes students' awareness of the learning process. This awareness, combined with the freedom given to students in choosing a format, encourages ownership of the learning process among students.

Design principle 1: ●●●●
Design principle 2: ●●●●●
Design principle 3: ●●●

Level: programme component

### *Screencapture someone's imagination:* Students demonstrate their mastery of statistics in a screen capture

At Amsterdam University College (AUC), courses cover the entire 16-week semester. Here, continuous assessment is used and assessment is spread over the semester. Teachers have a lot of freedom in designing the assessment of their course.

In the statistics course, this has led to part of the assessment being a screen capture. In the screen capture, students show through a recording of their computer screen how they approach a statistical problem in the software used for it. In doing so, they verbally explain why they make certain choices and how they interpret the results of their choices. In this way, students demonstrate their achievement of learning objectives with the help of the recorded film. The screen capture encourages students to think about how they can demonstrate this and gives a good picture of students' deeper level of mastery.

This form of assessment originated during the corona pandemic and pleased students and teachers so much that it was retained after the corona pandemic.

Design principle 1: ●●
Design principle 2: ●●●●●
Design principle 3: ●●●

Level: programme component

## Level: learning pathway/minor

Also within a part of the programme, such as a minor or learning pathway, assessment can be used to increase the ownership students experience over the learning process. This can be done, for instance, by giving students the opportunity to choose how and/or when they demonstrate that they have achieved the learning objectives. A personal portfolio, in which students collect evidence, can be used. Students can then indicate themselves when (in which study component) they have collected sufficient evidence, which can be used to assess whether they have achieved a particular learning objective. Students can also be asked to reflect on the personal learning process and how the assessment has contributed to it.

### Academic and personal development

In the bachelor's programme Criminology, students are guided in developing competences through the professional and personal identity (PPI) learning pathway. Students are responsible for their own development and are supported by a teacher-coach and a student-coach (senior student). Students keep track of professional and personal development in an e-portfolio. The activities of the learning pathway PPI provide students with tools that they can apply in education and in their future work field. This is a good example of giving students ownership. During the presentation of the VU Education Awards 2021, the Faculty of Law won the Innovation Award with PPI.

Design principle 1: ●●●●
Design principle 2: ●●●●●
Design principle 3: ●●

Level: learning pathway/minor

### How students develop into academically trained museum curators

Within the two-year dual master's programme Curating Art and Cultures, students are trained to become academically trained museum curators. This joint programme with the UvA aims to integrate academic education and preparation for the professional field through close collaboration with the professional field. During one year of the programme, students work in a museum, under the guidance of an experienced curator, to develop competences formulated by the programme. These are elaborated in the five-point plan, a description in five domains of the museum curator's range of tasks, which the programme has drawn up in consultation with the professional field.

At the start of the internship, a work plan is drawn up based on the five points, which clarifies in which exhibition and research projects the student will work. Every three months, in a meeting with the student, a representative from the master's programme and the internship supervisor the progress and development of the competences from the five-point plan is discussed. Halfway through the internship year, students evaluate themselves using a job profile of museum curator, which is derived from actual profiles from the field. This provides the student with insight into the end result the student is working towards (feedup), into their current performance (feedback) and the points that still need attention in the second half of the internship year.

At the end of the internship, students submit a report on the internship year, in which they reflect on the profession of museum curator based on their experiences in practice. Based on the assignments completed, students describe their own performance and evaluate the competences developed from the five-point plan. In this, students show insight into their own development, which encourages ownership.

Students start the programme with six months of substantive courses at the university. They then start the one-year internship, after which the programme concludes with a master's thesis. This structure of the programme is designed to promote the integration of theory and practice.

Design principle 1: ●●●
Design principle 2: ●●●●●
Design principle 3: ●●●●●

Level: learning pathway/minor

## Level: programme

At the programme level, ownership of the learning process can be promoted by allowing students to participate in thinking about how the programme's learning outcomes are reflected in the palette of final projects. This form of formative dialogue will contribute to students' perceived ownership. Here, it is possible to have students submit a proposal in which they indicate how they intend to demonstrate that they have achieved the learning outcomes of the programme. For students who prefer this, there could be a proposal from the teacher (as a back-up). This design principle can be put into practice by giving students the opportunity to personalise the final paper. Of course, this principle can also be applied to one (part of the) learning outcome(s).

Ownership can also be encouraged by having students write a personal learning plan at the beginning of the programme. This helps students to better understand why they are following a programme and what they want to get out of it. Part of this could also be a personal assessment vision in which a student considers for himself: how will assessment help me achieve my goals?

### Portfolio Accounting and Control

In the Portfolio Accounting & Control (SBE), students work within four modules on assignments that invite them to learn what it means to move on from the Accounting & Control master's programme to the professional field. The modules are based on themes that are current and relevant within the field. The portfolio is organised as an online self-study course. During the programme, students can work on their portfolio at their own pace, at times convenient for them. Students also have freedom of choice in the order in which they want to complete the modules, and they can complete the course at different times during the year. There is also freedom of choice in terms of content: within the modules, students decide for themselves what they find interesting and what they want to develop. In this way, students show that they take responsibility for their own learning, knowledge and actions.

The four modules each conclude with an assignment, which together form the 'portfolio'. The first assignment, a professional bio, provides an overview of educational background and work experience and a reflection on professional plans and goals. The next assignment is an information technology (IT) study, in which students develop IT knowledge or skills on a relevant IT topic of their choice. The third assignment is about bridging theory and practice. Students have to write a professional memo for an organisation on how academic insights can be used to analyse a real-world problem. In the final assignment, for the responsibility module, students develop a 'personal code of ethics' and think about how it can be useful when dealing with ethical dilemmas in practice.

If a desk review shows that the portfolio meets the minimum criteria, a final interview is scheduled in which the student explains the portfolio and a discussion about the portfolio is held with two assessors (a teacher from the programme and an external assessor one from the professional field). A rubric weighing the written work and the discussion is used to determine the final grade. Due to the close connection to the professional field, the activities and assignments students have to carry out are seen as valuable and relevant. In addition, the portfolio's freedom of choice and flexibility promote students' responsibility and independence, leading to a sense of ownership.

Design principle 1: ●●●●
Design principle 2: ●●●●●
Design principle 3: ●●●●●

Level: programme

### Pro tasks

Fontys University of Applied Sciences' ICT programme wants students to experience ownership of their own studies from day one. And therefore also feel responsible for their own progress and performance. Commitment to continuous feedback ensures that students know where they stand and where the next development goal lies.

This is reflected in so-called 'pro tasks'. This involves students using an assignment to deliver a product for a (virtual) client. The pro task is an invitation to learn by means of a practice-oriented assignment. To achieve results, students will have to research certain knowledge areas and then translate these into a working end product.

Teachers provide formative feedback during the process. This gives students an interim view of their own performance and is recorded by students in the portfolio as evidence for the final assessment. At the final assessment, a comprehensive portfolio review takes place and students have to defend their work. This looks at which subject-related and professional skills have been demonstrated.

This form of teaching changes the role of the teacher to a coaching role. Teachers do less classroom teaching, but are guiding students instead in finding a solution (or the knowledge needed).
This form of didactics makes assessment more flexible. During the programme, the Professional Development learning pathway works with an overview of the competences students will develop in themselves. So it may well be that students take achievements from other subjects, or even from a private project, as proof of their development.

This text is based on the website https://www.ambitieplanfontysict.nl/ambitieplan-2013-2017/ambitiethemas/kwaliteit-van-toetsing/.

Design principle 1: ●●●●
Design principle 2: ●●●●●
Design principle 3: ●●●●

Level: programme

# Opportunities and challenges

## Opportunities:

- When students have the opportunity to co-determine how and when they are assessed, it will increase students' involvement in their own learning process. This way, assessment gives students the opportunity to take responsibility for their own learning.
- When students are involved in the choice of form of assessment, the connection to the learning objectives of study components and/or the learning outcomes of the programme will be discussed. As a result, students become more familiar with the learning objectives of study components and the learning outcomes of the programme and thereby are more aware of what they are working towards.
- Attention to learning objectives and learning outcomes in the course of the programme (feedup), ensures that students do not just hop from programme component to programme component, but experience coherence in the programme and are able to actively monitor and reflect on their own development.
- When students are encouraged to think about which form of assessment best suits their learning objectives and their personal learning process, this will additionally activate and motivate students. After all, an appropriate form of assessment relieves the pressure sometimes experienced with a pre-prescribed form of assessment, such as a traditional written final exam.

## Challenges:

- Where one student may easily choose a form of assessment, another will need more guidance.
- For freedom of choice in forms of assessment to be successful, teachers need tools to set frameworks for students, which student-provided forms of assessment must meet.
- If this principle is applied at programme level, to prevent students from repeatedly opting for the same form of assessment, frameworks will also be needed at this level, with which a student's 'personal assessment programme' must comply. It should also be worked out VU-wide where monitoring of such a personal assessment programmes is to be invested.
- Given the role of the examination board in assuring assessment quality, the role of the examination board in free(er) forms of assessment will have to be elaborated.
- When students are given the responsibility of demonstrating for themselves that they have achieved

learning objectives, a digital portfolio system is a prerequisite. With such a system, students can be given the opportunity and responsibility to collect varied evidence.
- In order to ensure that a student's personal assessment programme complies with the set frameworks, it is necessary that results can be registered individually in the student information system, whereby the form of assessment and the moment of registration may differ per student.
- The law requires that the Teaching and Examination Regulations (TER) specifies how a study component is assessed. A distinction is made between written exams, oral exams and other.[25] If programmes choose to introduce a personal assessment programme, space will have to be provided for this in the (model) TER.

25 Wettenbank Overheid.nl, 'Wet op het hoger onderwijs en wetenschappelijk onderzoek', artikel 7.13, lid 2, sub h, l, https://wetten.overheid.nl/BWBR0005682/2022-08-01#Hoofdstuk7_Titeldeel1_Paragraaf1.

# 2.3 Design principle 3

**Assessment prepares for acting in the professional field and society**

a. In training courses, theory and skills are also assessed in conjunction
b. Assessment contains reality-based assignments

Assessment at the VU prepares students for acting in the professional field and society. This means that students are partly assessed on products they will produce in working life after their studies. Students' experiences in this way during their studies are characterised by a strong scientific basis. The combination of reality-based assignments and a scientific approach makes VU students especially attractive to the professional field after graduation.

Through reality-based study assignments, students experience what similar tasks might look like in working life. Students can choose a career outside the university after their studies, in addition to a career in science. While some programmes are more vocationally oriented than others, assignments from the non-academic work field help students experience what to expect after their studies. With this, reality-based assignments provide a motivation boost to students, as they immediately see the relevance of an assignment.

## Level: programme component

There are several ways for a teacher to engage in reality-based assessment in the context of a programme component. These could be simulations (students perform actions as if they were professionals), teaching a classs, writing a rebuttal in response to feedback after submitting an academic paper, or delivering reports and papers for (imaginary) clients outside the university.

## Assessment in another dimension

The skills pathway in the bachelor's programme Law concludes with Moot Court, in which students experience a 'toga profession' in practice. Students take the role of a lawyer or prosecutor and are going through legal proceedings, writing pleadings and, as the climax, pleading during the final hearing. In the course, three reality-based assignments are evaluated summatively: two written procedural documents and pleading at the final hearing. Students can practice during the learning process with oral skills training, written feedback, feedback interviews and using PleitVRij.

PleitVRij is a VR programme that simulates a courtroom. The student gets VR glasses on and thus enters a virtual courtroom, where the student can communicate live with the judge. The judge can be a student assistant or teacher. The student makes a plea, while the use of a VR headset gives him/her the feeling of being in a real courtroom. The other students jointly watch what happens in the virtual room via a screen. After the pleading exercise, students give each other feedback using a rubric. The same rubric is used for the final assessment. The (peer) feedback helps students get better at pleading.

By applying different modes of feedback to a reality-based assignment, Moot Court prepares students for their future jobs as, for example, lawyers.

Design principle 1: ●●●●●
Design principle 2: ●
Design principle 3: ●●●●●

Level: programme component

## Educational innovation and innovation policy in practice

In the master's track 'Education & Innovation' (one of the tracks within the master's programme Pedagogical Sciences), students within the course Policy and Practice of Educational Innovation go on working visits to various organisations involved in education and innovation. Following these visits, students write an advice or policy note in groups in response to concrete questions from the organisations. During the lectures, they are guided in this and learn more about the relationship between policy and educational practice. In recent years, for example, students have written policy notes for the municipality of Amsterdam, TNO and the VU Education Lab.

Since it is a challenging task for students, the teacher creates space for feedforward: the teacher enters into a conversation with students about where they are, where they need to go and what they need to achieve this. The teacher then reaches out to them with tools to help them on their way.

Besides this feedforward, there are also some feedback moments. Students receive peer feedback on their policy notes once. Students present their draft versions of the policy notes explaining the feedback they have received. The teacher also has the opportunity to give feedback here. A few weeks before the final version is due, students have another chance to receive feedback from the teacher. Both peer feedback and feedback from the teacher are given using a pre-prepared assessment form. Finally, students feedback their policy note to the organisation that gave them the assignment.

This way of learning and assessing aims to better connect theory and practice. Working visits and working on the policy note make this one of the most practice-oriented courses in the programme.

Design principle 1: ●●●
Design principle 2: ●●
Design principle 3: ●●●●●

Level: programme component

### Contributing to health and well-being in the city through Community Service Learning

Both first-year and second-year students from the bachelor's programmes in Health and Life and Health Sciences (BETA) participate in the 'Health in the City' course. In the course, they address a societal problem put forward by an external client from the field, with students using their academic knowledge to contribute to society. Although the societal problems the students address vary, the topic is always related to contributing to well-being in the city. For instance, students have conducted research on stress among students, on loneliness in Amsterdam Nieuw-West, and, for the Trimbos Institute, on smoking behaviour among young people.

Summative assessment of the course is divided into three assignments. First, students work collectively on a final scientific report, incorporating the results of individual in-depth interviews with stakeholders. Second, in smaller groups, students deepen a subsection. The form in which students present this is free and students use creative ways to present the subject matter to the partner who introduced the topic. Third, the course pays close attention to the role of academic health professional in the issue. Several times during the course, students reflect on their role as a health scientist in society, on working with external partners, on the research process and outcomes and on the group process, the functioning of individual group members and their own functioning. This reflection pays attention to linking practical experience to theoretical knowledge.

Design principle 1: ●●●●●
Design principle 2: ●●●●●
Design principle 3: ●●●●●

Level: programme component

## Level: learning pathway/minor

By using reality-based assignments in the longer term during a learning pathway, students' development in this area can be made visible. The assignments offered in the learning pathway are chosen in the context of the professional field of the relevant study programme (mastery of a particular skill, for example).

In their minor, students choose to specialise and/or be introduced to a topic that lies within or outside their own programme. A minor that commits to reality-based assessment offers students the opportunity to delve deeper into a subject in the short term, linking it directly to practice.

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## Community Service Learning in the Global Health minor

In the minor in Global Health (BETA), students work during the first semester on a Community Service Learning (CSL) project proposed by an external partner. The minor consists of about five courses, covering relevant content topics. As part of a Comenius grant, the minor was recently revised. In this revision, parallel to building the knowledge base and understanding, the application of the knowledge in the context of a problem from society was added in the form of a CSL project. This uses the challenge-based learning model.

The projects are proposed by partners from the CSL network or partners that teachers from the minor already work with. These partners can be local, from the Amsterdam region, but there are also partners abroad. To promote student motivation for the project, students are assigned to a topic based on preference. Whenever possible, students from different programmes work together in a project so that a transdisciplinary team can be used to tackle the societal problem. This results in a final product for which students select a form that contributes most to solving the problem. This could be, for example, a campaign on social media, a website or an advisory report.

Students are supervised weekly throughout the project by the same teacher. As a result, the teacher has a good overview of the entire learning process and assumes a coaching role. A special learning pathway addresses the development of competences. From the programme, three competences relevant to Global Health practitioners have been formulated that students develop in the minor. These competences are dealt with in a series of workshops that grow in depth during the minor. In addition, students work on personal learning objectives in the CSL project.

Half of the summative assessment of the minor consists of assessing the knowledge base and understanding from the five courses. The other half is based on the CSL project. Here, not only the final product is considered, but the grade is largely determined by the process in which the final product was created. For the assessment of the final product, a rubric has been developed that is independent of the form of the final product. This rubric is also used by teachers to provide feedback during the project. During the project, students reflect on the competences to be developed. They do this collectively on the group process and individually on the individual learning process. By focusing the assessment on the process, there is sufficient room to develop skills and a safe learning environment is created in which making mistakes is part of the learning process.

In the CSL project, assignments are not just reality-based, but actual reality. As a result, students learn to apply their academic skills to societal problems. By working on real societal problems, students see the relevance of their work and become extra motivated.

Design principle 1: ●●●●●
Design principle 2: ●●●●●
Design principle 3: ●●●●●

Level: learning pathway/minor

## Projects learning pathway

In the Science, Business and Innovation bachelor's programme, there are four innovation projects during the first two years that combine theory with a practice-oriented assignment. These are scheduled in the short four-week teaching periods (periods 3 and 6).

The four different projects that students engage in are designed to teach the different personality traits associated with business. The projects require students to be entrepreneurial and to come up with a solution where the link to business can take on different levels depending on students' experience. This ranges from a more generic challenge that is equivalent for all groups to a unique challenge where a group works directly with a start-up. The learning pathway ends with the bachelor's project where students undertake an individual research internship at a company of their choice. Thus, over the course of the innovation projects and with the bachelor's project, students build extensive experience with increasing freedom and responsibility.

During the projects, there is extensive learning support. For example, each student has a coach who can help them in their development and answer any questions they may have. Students receive feedback on the projects and entrepreneurship competences from the coach and/or fellow students. At the end of each project, students write a reflection report in which >

they reflect what they have learned, what they thought of and did with the feedback, which competences they have worked on (feedup) and what still needs to be worked on (feedforward). In the bachelor's project at the end of the programme, students are also encouraged to learn from the experience. Both teachers and a supervisor in the company provide feedback, which forms the basis for a reflection interview and a reflection report.

The projects connect to the field in different ways and provide insight into practice. In the first project, students work with students from the Pharmaceutical Sciences programme on a plan for the development of a drug. In the second project, students develop and advise on a business for a challenge provided by a company from the energy sector. In the third project, students work with a young start-up technology-driven company, in the medical physics world, and advise on how the company can develop further. In the fourth project, students work out a business idea from start to finish in the field of alternative fuels.

The innovation projects become more challenging during the programme and students are asked to play an increasingly independent role in their learning process. For instance, feedback during the first project is mainly given by the coach and peer feedback takes on an increasingly important role from the second project onwards. Feedback is given by means of established rubrics and an entrepreneurship competence framework. The competences from the entrepreneurship framework are uploaded into the FeedbackFruits tool and students can provide feedback on each other's competences. Because the projects run throughout the bachelor's programme, students' developments can be easily monitored from the first year to graduation.

Design principle 1: ●●●●
Design principle 2: ●●●●
Design principle 3: ●●●●●

Level: learning pathway/minor

## Academic workshops (*Academische werkplaatsen*)

The VU participates in several academic workshops. These are partnerships between academic institutions, (public) organisations and governments. The academic workshops focus on cooperation between practice, research, education and policy. The aim is to increase the societal impact of scientific knowledge. In addition, academic workshops help students learn meaningfully as part of A Broader Mind.

It is possible for students to carry out an assignment or thesis within an academic workshop. These involve issues from society, which students tackle with an academic approach. Since 2001, for instance, the Bartiméus foundation and the VU have worked together intensively and structurally within academic workshops in the field of education and research for people with visual impairments and visual and intellectual disabilities. Within these workshops, about 8 bachelor and 12 master students annually carry out a research project as part of final projects of the Pedagogical Sciences programmes. In doing so, they are supervised by scientists involved in the academic workshop. These final projects focus on the translation from academia to society.

Design principle 1: ●●
Design principle 2: ●●●
Design principle 3: ●●●●●

Level: learning pathway/minor

## Level: programme

When a programme is committed to reality-based assessment in the context of the programme, instead of a traditional thesis, an assignment for a company, organisation or institution can be chosen as the final work of the programme.

### The connection between theory and practice in educational programmes

In the one-year master's programmes to become a teacher in Dutch secondary education (*Leraar Voorbereidend Hoger Onderwijs*), theory and practice are offered in conjunction. During the programme, students gain experience in the teaching practice of secondary education at their internships, while learning a research-based approach to that practice in courses at the VU.

This research-based approach to teaching practice involves a number of steps. Teaching is designed based on so-called core practices for a teacher (such as 'making contact' or 'leading') that are both approached theoretically and made concrete in workshops. Prior to teaching, attention is paid to students' expectations and substantiation of planned teaching activities based on theory (vision and design). Then, during the internship, experiences are gained in teaching itself and data are collected (implementation). After the implementation in practice, the meaning of the findings is reflected upon, related to theoretical frameworks. Here, attention is paid to reflection on the teaching given, one's own functioning and points for improvement.

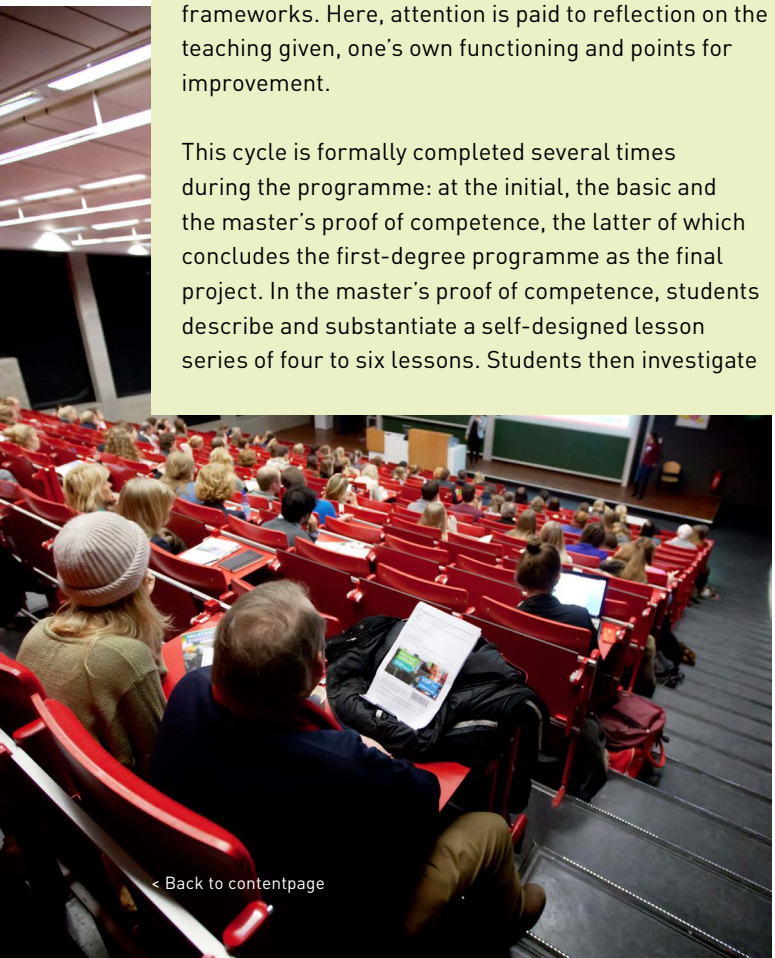
This cycle is formally completed several times during the programme: at the initial, the basic and the master's proof of competence, the latter of which concludes the first-degree programme as the final project. In the master's proof of competence, students describe and substantiate a self-designed lesson series of four to six lessons. Students then investigate whether their assumptions about the learning process in the designed lessons are correct and what the learning outcomes were, through a systematic evaluation of the approach (e.g. through student surveys, interviews, observations and the analysis of an exam). Reflections on the lessons and one's own performance are also included in the assessment of the master's proof of competence.

During the proofs of competence, students are guided by subject didactics experts and mentors from the VU. They support the students, especially in terms of didactic input and process supervision by discussing with students the steps to be taken and reflecting on the steps already taken. In addition, students are given the freedom to find a suitable way to apply (theoretical) developments in the field of education within their own educational practice, in a way that is meaningful for that specific educational practice. They are supervised by workplace supervisors, who are themselves teachers at the placement school. This supports students in acquiring two important skills for a good teacher: reflection and linking theory and practice.

The proofs of competence challenge students to demonstrate many different skills included in the programme's learning outcomes. This makes it a great example of how theory and skills are assessed in conjunction.

Design principle 1: ●●●
Design principle 2: ●●●●
Design principle 3: ●●●●●

Level: programme



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# Opportunities and challenges

## Opportunities:

- Through reality-based assignments, the combination of knowledge and skills is immediately applied in practice and assessed in context.
- When using continuous learning pathways (with developmental assessment), students' development in terms of being able to put skills and knowledge into practice during the learning pathway or minor can be monitored over an extended period of time.
- Reality-based assessment provides students with a clear picture of what is going on in the professional field and how their studies prepare them for it. This enhances students' motivation during their studies.
- Students who gain experience with products relevant in the field during their studies are more attractive to employers.
- This design principle aligns with VU's Community Service Learning objectives. Students deliver products that are immediately applicable and benefit both the client and the students directly and demonstrably.
- Reality-based assignments can spare assessment support, if alternative assignments (partly outside VU) are chosen instead of traditional written exams.

## Challenges:

- A good connection with the professional field requires close cooperation between the programme, career services and alumni.
- Providing reality-based assignments requires extra flexibility from the teacher.
- When students carry out (part of) assignments externally, good coordination is needed between the student, the teacher/thesis supervisor and the representative from the professional field. It should be established beforehand how the supervision is organised and who monitors the execution and quality of assignments carried out externally.
- If an external party is involved in summative evaluation, it should be clear in advance who from the VU fulfils the role of examiner and what role external supervisors play in evaluating the student.
- The role of the examination board in external assignments needs further elaboration.
- Reality-based assignments may require a different kind of (technical) support.
- In addition, it can be a logistical challenge to find suitable spaces for certain reality-based forms of assessment.

# 3. The assessment vision in context

Some developments in higher education are largely beyond the scope of the working group, but are too important to leave unmentioned. Active blended education, the ambition of making education even more flexible and digitisation are examples of such developments.

As these developments are related to assessment, the working group's ideas on these topics are briefly explained here. Furthermore, some consequences and nuances are discussed around applying the design principles for future-proof assessment in practice.

## Assessment in active blended learning

The VU aims for active learning, in which physical and online educational activities are optimally combined for the benefit of the learning process. The aim of active learning is to activate students to engage with the subject matter in a timely and in-depth manner and to prevent students from trying to 'cram' large amounts of knowledge just before a final summative evaluation. There are many ways to activate students. For this purpose, frequent summative interim exams were added to assessment programmes in the past. This may suggest that active blended learning is poorly compatible with the opportunities described under design principle 1 in the assessment vision, which suggests a possible decrease in summative evaluation moments. However, just as active blended learning searches for the optimal combination of physical and online educational activities, design principle 1 calls for a search for the optimal combination of formative and summative educational activities. After all, there are many more ways to activate students that do not necessarily include summative elements.

## Capturing feedback

Focusing on student ownership and more attention to feedback requires a system in which feedback can be requested and recorded. VU has FeedbackFruits in house for this purpose. In addition, there is a growing desire within faculties to introduce an e-portfolio. Depending on the programme's wishes, this digital portfolio system can be used as a development and/or assessment portfolio. Who, when, records what feedback should be determined in advance. This should take into account the study phase of students: depending on the study phase, students will need a different nature, frequency and extent of feedback.

## The influence of study phase and group size on applying design principles

Students' needs change depending on the stage they are at (within a programme of study or within a study unit). For example, the optimal frequency, nature and extent of feedback and feedforward (the formative dialogue) will not be the same for a first-year bachelor's student and a final-year master's student. On the one hand, during the programme, the emphasis in teaching shifts from building a knowledge base at the start of a programme to more complex(er) skills at later stages of the programme. This will also have implications for the amount of reality-based assessment used. On the other hand, students also build more learning skills and ownership during the programme, resulting in a proactive attitude towards their personal learning process.
Group size will also affect how the formative dialogue will be applied. Large programmes and busy programme components are more likely to opt for the introduction of peer feedback, team-based learning, and plenary discussion of common mistakes. In addition, in many programmes, building ownership during the programme runs parallel to decreasing group sizes due to specialisation within the programme.
These factors will therefore have implications for the design of teaching and how the design principles from the assessment vision are applied.

## Development-oriented assessment and implications for working with grades

The focus on the formative dialogue will lead to a development-oriented form of assessment. The formative dialogue focuses attention on student development through the questions of what the student is working towards (feedup), where the student stands (feedback) and how the student can reach the desired level (feedforward). Development-oriented assessment thus encourages the improvement perspective. Although it is important to have established at the end of the course that students have achieved the desired final level, frequent interim summative assessment can hinder the improvement perspective. After all, for many students, a sufficient mark is a sign that the learning process has been completed. Focusing on the formative dialogue during the learning process keeps the focus on further improvement during the programme. The implication is that in the future, grading will be less frequent. This may also have implications for the use of the judicium *cum laude*, for example.

## Assessment and flexibility

There is currently a debate on whether higher education institutions should offer more flexible education from 2023 onwards. This responds to the demand of the studying target group, which is becoming increasingly diverse, for example due to the increase in the number of (working) adults.[26] The VU, too, considers it its duty to give people the opportunity to develop throughout their lives and offers programmes and courses for professionals in addition to initial education.[27] At the time of formulating the assessment vision, a vision is being worked out which way the VU wants to go with regard to making education more flexible.[28] More flexible education matches the importance VU attaches to the personal development of students; the vision aims to make room for the development of talent. Central to that vision is the premise that there is talent in every student. The VU is committed to supporting students to discover and fully develop these talents. Continuous reflection on one's own development is essential for this.

26 'Hoger onderwijs dat voldoende flexibel is om op de behoefte van de student in te spelen', in: Ministerie van Onderwijs, Cultuur en Wetenschap, *Strategische agenda hoger onderwijs en onderzoek: Houdbaar voor de toekomst* (Den Haag, 2019) 57-69.
27 VU Educational Vision, 10.
28 Autumn 2021, a VU-wide working group was launched to formulate a vision on making education more flexible at the VU.

The focus on personal development is linked to a responsible role for students: 'Students are primarily responsible for their own study career and their own study success (...). With our education, we encourage students' autonomy and self-directedness.'[29]
Development-oriented assessment with attention for the formative dialogue provides opportunities to focus on a student's development in their own study path. At the same time, it is a challenge to design flexible education in such a way that the quality of assessment can be safeguarded. It is therefore important, when elaborating the vision into policy and making education more flexible, to also include the consequences for assessment in the considerations.

## Digital and online assessment

In recent years, the development of digital assessment gained momentum. More students and more teachers have come into contact with it and experienced the advantages of digital assessment. For instance, digital assessment offers more and more varied possibilities in terms of assessment and question formats, which can enhance the authenticity of assessment. Digital assessment also offers more opportunities for online and location-independent assessment, which allows assessment to be tailored to the personal learning process of students. For students with specific needs and circumstances, hybrid assessment offers opportunities to increase the accessibility of assessment.
The corona pandemic has shown that there may be disadvantages to online and hybrid assessment under certain circumstances. The working group explicitly does not comment on how much digital and online assessment is desirable. It believes that the choice of an assessment form should always follow from the content and quality of the assessment. This is an educational choice. In this sense, digital and online assessment therefore represents opportunities that can be exploited in the application of the design principles from this vision.

## Workload

Workload within universities has been a topic of discussion for years. In this context, assessment and the accountability pressure that comes with it is regularly discussed. From the perspective of accreditation, pressure is experienced to check and be sure of everything. This leads to a higher percentage of summative assessment. However, less summative assessment does not have to have a negative impact on accreditation when there is a commitment to an educational and assessment vision that focuses on student development. Good substantiation makes it clear how it is reliably determined that students have achieved the learning outcomes.
On the other hand, teachers will potentially need more time to provide feedback to students in formative assessment. However, this work does not always have to be done by the examiner. For example, support staff or student assistants can be used to provide assignments with feedback. Finally, the introduction of peer feedback in a strong feedback culture has the added advantage that students can also use feedback from fellow students in their learning process, which can relieve teachers in this area.[30]

29 VU Educational Vision, 11.

30 VU Educational Vision, 9.

# Appendix 1: Glossary



**Active blended learning**:
Activating teaching activities make students think for themselves, reason for themselves, formulate a goal themselves and then come to a solution themselves. The activating aspect makes knowledge and skills stick better. Blended learning is a learning and teaching method consisting of a mix of face-to-face education (lectures, working groups, tutor groups, etc.) and tasks and assignments that students carry out independently. In blended learning, ICT support is often used to design (online) learning activities, learning resources and tools. The aim is to create a learning experience where learning technology is used to enable effective, efficient and flexible learning.[31]

**Assessment**: Assessment is an inherent part of education. It is common to distinguish between formative and summative assessment. Summative assessment focuses on determining whether the learning objectives have been achieved. Summative assessment is linked to evaluation and progress decisions. Formative assessment has been interpreted by the working group as a formative dialogue.

**Assessment support**: Assessment support consists of the faculty and central support staff who facilitate the administration of assessments. Assessment support is particularly involved in summative evaluation moments, where some form of surveillance is necessary.

31 For more information, visit: https://vu.nl/en/employee/didactics/active-blended-learning-in-practice-at-vu-amsterdam.

**Comparability**: Comparability of assessments is important when working with parallel versions. But the first opportunity and the resit should also be comparable in terms of competence level, course material coverage and difficulty. With comparable assessments, a student with the same command of the course material should be able to complete all assessments equally well.

**Constructive alignment**: The educational concept that states that learning objectives and outcomes, assessment and educational activities are aligned, making them mutually reinforcing. In practice, this means that assessment is determined from the learning objectives and outcomes. The educational activities are then designed on the basis of the assessment.

**Development-oriented assessment**: Development-oriented assessment involves encouraging and monitoring students' development towards the complex final level throughout the learning pathway.

**Exam**: An exam is a form of assessment. The law assumes three forms of exams: written, oral, other. At the VU, for written exams, a distinction is made between written exams that are taken digitally and written exams that are taken with pen and paper. Besides exams, a wide variety of assessment forms with varying specifications are used in daily practice at VU.

**Feedback**: Feedback is an essential part of formative dialogue. Feedback contains information about where a student is now and can be used to adjust the learning process. Feedback is ideally offered in combination with information about what the student is working towards (feedup) and how students can move towards the desired situation (feedforward). See further: formative dialogue.

**Flexibility in education**: Flexibility in education (*flexibilisering van onderwijs* in Dutch) is a complex and comprehensive concept for which no common unambiguous definition is yet used.
At the VU, flexibility in education is used to make room for the different talents of students in a diverse population. Here, flexibility on content is seen as the most important dimension. In doing so, flexibility on other dimensions (unit, form, place, time and pace) is seen as a precondition for flexibility on content.

**Formative dialogue**: Formative dialogue is an essential part of the learning process and focuses on answering three formative questions: what students are working towards (feedup), where a student is now (feedback) and how a student can grow towards the desired situation (feedforward).[32]

32 Dominique Sluijsmans and Mien Segers, 'Wat is nodig voor een toetsrevolutie in het hoger onderwijs? Vijf kernboodschappen voor de praktijk', in: Dominique Sluijsmans and Mien Segers (ed.), *Toetsrevolutie: Naar een feedbackcultuur in het hoger onderwijs* (Culemborg, Uitgeverij Phronese, 2018) 216-232: 222.

Formative dialogue aims to encourage ownership in students' personal learning and can take numerous forms. In doing so, formative dialogue reflects the focus on open interaction and personal attention that characterises education at VU.

**Learning pathway**: An integral learning pathway, encompassing multiple units of study, in which students progress towards the complex final level. A programme of study usually comprises several learning pathways, which come together in the final works.

**Programmatic assessment**: Programmatic assessment is a form of development-oriented assessment. Programmatic assessment involves a structured system of coherent formative snapshots, which emphasises the possibility of student growth and development towards the intended final level. This is in contrast to the classical system of relatively loose summative snapshots. Students do not learn for the assessment, but rather from the assessment. Student performance is not measured by a single moment, but is monitored over a longer period of time. This is done using low stake data points. Low stake means that no fail-success decision is made on the basis of a single exam. Data points provide students with rich feedback, which they use to work further on their learning goals. The series of data points ultimately leads to a high-stake decision at the end of the trajectory, in which many credits are awarded. This holistic decision is about the data points as a whole: no credits are awarded on the basis of a single data point.

**Reliability**: Reliability is the extent to which the assessment measures accurately and consistently. The result of any assessment is influenced by sources of error that affect the result and the timing of the assessment. The results of the assessment should be as 'true' as possible, i.e. influenced as little as possible by elements of chance (e.g. by misleading questions, by typing or spelling errors, by language errors, etc.). By controlling the sources of error as much as possible, adequate judgements can be made.

**Skills**: Competences that students need to become proficient in during their studies in order to successfully navigate their way through society and the professional field during and after their studies. Examples of skills are problem-solving ability and socio-cultural communication.

**Summative evaluation moment / summative forms of assessment**: The aim of a summative evaluation is to pass judgement on a student's knowledge and skills. The results of summative assessment forms have consequences, usually in the form of a mark and/or a (fail/pass) decision. Students are assessed to what extent they show that they have achieved the predefined objectives and a judgement is then formulated based on this assessment.

**Transparency**: Transparency means that assessment procedures are clear to students and are not unnecessarily complicated. The two main interests served by this are (1) that students can prepare optimally for the assessment and (2) that students can check afterwards how the results were reached.

**Usefulness**: The usefulness of assessment refers to the extent to which assessment must meet a number of, partly practical, requirements. Assessment should not only match the course material and learning objectives (constructive alignment), but should also fit the group size and be appropriate to the teaching method employed. The effectiveness, fairness and time available for assessment determine its usefulness.

**Validity**: Valid assessment measures what it is intended to measure, both in terms of learning content (content validity) and in terms of the level of processing students are expected to do, such as understanding and application (concept validity).

# Appendix 2: Bibliography

* Recommended literature for further reading on concepts important in the assessment vision.


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## Accountability

The practical examples in the boxes include the research conducted by student assistant Yasmine Akriaa at NT&L on innovations applied by teachers at VU University.

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The vision for future-proof assessment was commissioned by the STOK and composed by the working group 'Assessment vision for the future'.