Manual for Digital Assessment

Remote Assessment

(version 1.1 - April 2020)
Contents

1 Getting started with remote assessment: a quick overview .......................................................... 5
2 Options available for remote assessment .................................................................................. 7
  2.1. Blackboard and Brightspace ................................................................................................. 7
  2.2. Examination tool: RemindoTest .......................................................................................... 11
  2.3. Examination tool: Ans ......................................................................................................... 14
  2.4. Online proctoring: ProctorExam ......................................................................................... 16
  2.5. Skype: oral exams ............................................................................................................. 18
3 Creating a secure online test environment .............................................................................. 20
  3.1. Guidelines for a secure test environment .......................................................................... 20
  3.2. Including an integrity statement ......................................................................................... 20
4 Creating online tests ............................................................................................................... 21
  4.1. Open questions and essay questions in a fixed time slot .................................................. 22
  4.2. Take-home exams and open-book exams ......................................................................... 22
  4.3. Possible forms of mid-term testing .................................................................................... 24
  4.4. Test matrix: aligning the test with the learning objectives .............................................. 25
5 Online testing in line with the Course and Examination Regulations .................................... 26
6 Alternatives for students who are unable to take an online test ............................................. 27

Appendix 1 – Differences in user options between Ans/Remindo and Blackboard/Brightspace (i.e.w. Turnitin) ........................................................................................................ 29
Appendix 2 – Points to bear in mind when formulating open questions .................................... 30
Appendix 3 – Working with rubrics ............................................................................................. 32
Appendix 4 – Bloom’s taxonomy ................................................................................................. 34
Executive summary

A brief description of the most common forms of assessment and how they can be used online is presented below. More information about how specific forms of assessment can be adapted for use in online assessment and about the use of examination tools can be found in chapters 2, 3 and 4.

Online test with multiple choice questions

- Available systems: Blackboard, Brightspace, Ans and Remindo.
- A group of students take an individual test at the same time, with a fixed start time and fixed end time (for example, with a duration of 1.5 hours).
- The students can be given automatic feedback on their answers immediately after completing the test, if so wished.
- The test is graded automatically. The teacher checks the test results with a test analysis and, if necessary, makes adjustments afterwards.
- The teacher publishes the results. This can be done quickly, sometimes even within a day.

Online test with open questions or essay questions

- Available systems: Blackboard, Brightspace, Ans and Remindo.
- A group of students take an individual test at the same time, with a fixed start time and fixed end time (for example, with a duration of 1.5 hours).
- The teacher grades the answers. Depending on the number of questions and the number of participating students, this can take a few days or weeks.
- The teacher checks the test results with a test analysis and, if necessary, makes adjustments afterwards.
- The teacher publishes the results.

Open book exam

(This is a variant of a test with open questions)

- Available systems: Blackboard, Brightspace, Ans and Remindo.
- A group of students take an individual exam at the same time, with a fixed start time and fixed end time (for example, with a duration of 1.5 hours).
- While students are taking the exam, they are permitted to use course materials. Agreements are made in advance about what materials are permitted (for example, a course book, a syllabus or the internet).
- The teacher grades the answers. Depending on the number of questions and the number of participating students, this can take a few days or weeks.
- The teacher checks the test results with a test analysis and, if necessary, makes adjustments afterwards.
- The teacher publishes the results.
Take-home exam
- Available systems: Blackboard, Brightspace, Ans and Remindo.
- A group of students take an individual exam at the same time, with a fixed start time and fixed end time (for example, with a duration of a half-day, a day or even a few days).
- While students are taking the exam, there are no restrictions on their use of study materials.
- The teacher grades the answers. Depending on the number of questions and the number of participating students, this can take a few days or weeks.
- The teacher checks the test results with a test analysis and, if necessary, makes adjustments afterwards.
- The teacher publishes the results.

Online oral exam
- Available systems: MS Teams, Kaltura Live Room or Skype.
- A teacher conducts an oral exam with an individual student.
- The teacher checks the student card.
- The teacher records the oral exam, for example using video or audio, or making written notes.

Group product
- Available systems: the group environment in Blackboard and Brightspace.
- Small groups of students are given a group assignment, such as writing a paper together, developing software together or conducting a research study together.
- The learning objectives relate not only to cognition, but possibly also to skills such as collaboration and communication.
- The work is graded on a group basis, possibly with an individual component.
- Grades are based not only on the product, but also on the process.

<table>
<thead>
<tr>
<th>On-site assessment</th>
<th>Online assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple choice questions</td>
<td>Blackboard, Brightspace, Ans and Remindo</td>
</tr>
<tr>
<td>Open questions or essay questions</td>
<td>Blackboard, Brightspace, Ans and Remindo</td>
</tr>
<tr>
<td>Open book exam</td>
<td>Blackboard, Brightspace, Ans and Remindo</td>
</tr>
<tr>
<td>Take-home exam</td>
<td>Blackboard, Brightspace, Ans and Remindo</td>
</tr>
<tr>
<td>Oral exam</td>
<td>MS Teams, Kaltura Live Room, Skype</td>
</tr>
<tr>
<td>Paper</td>
<td>Email (in the same way as before)</td>
</tr>
<tr>
<td>Group product</td>
<td>Group environment in Blackboard and Brightspace</td>
</tr>
</tbody>
</table>

NB: When students are at home, they can consult sources over which you have no control. It is therefore advisable in principle not to use a closed book exam with multiple choice questions. Wherever possible, you should redesign your exam questions as open questions (chapter 4).
Getting started with remote assessment: a quick overview

All of us at Leiden University have suddenly been faced with the challenge of offering our students remote teaching and assessment. Several forms of examination can be held online: oral exams, presentations, or written exams with open questions or multiple choice questions. This manual is intended to provide teaching staff with support in preparing and delivering their remote assessment, and describes the steps they should take, the online assessment options available within our University, and the relevant guidelines.

A quick overview is presented below, outlining the various steps that should be taken (not necessarily in this order) and giving a reference to the relevant section or chapter for more information, where applicable:

1. **Before introducing remote assessment, discuss your plans with your course coordinator/examiner / study programme director/chair and, where relevant, your ICT&Education coordinator**
   Also in the case of remote assessment, the course teacher / course coordinator / course examiner is responsible for careful assessment in accordance with the Course and Examination Regulations (OER), and the Board of Examiners and the study programme director/chair must ensure in the usual way and in consultation that the teaching and assessment comply with the OER (chapter 5).

2. **Choose your tool**
   Several online tools are available for remote written assessments: Blackboard and Brightspace (section 2.1) and the examination tools Remindo (section 2.2) and Ans (section 2.3). If ‘online proctoring’ (remote invigilation) is required, Remindo and Ans can be combined with ProctorExam (section 2.4).

3. **Take note of the guidelines for secure online assessment**
   To a certain extent, tests and exams will always be subject to the risk of cheating, but there are various measures that can be taken to reduce this risk. Although there is a technical aspect to security, it also involves human vigilance. You should therefore comply with the guidelines for delivering secure assessment (section 3.1).

4. **(Re-)design your exam**
   When students are at home, they can consult sources over which you have no control. Some types of questions are therefore less appropriate for remote assessment. It is advisable in principle not to use a closed book exam with multiple choice questions. Wherever possible, you should redesign your exam questions as open questions (chapter 4).
5. **Decide on the time limit**
   You should limit the time allowed to complete the exam, to reduce the risk of searching for information and face-to-face or online collaboration between students. While bearing this in mind, you should still offer a realistic ‘timeslot’: preferably 1.5 hours – 2 hours.

6. **Change the order of the exam questions for each student**
   It is important to change the order of exam questions for each student, to reduce the risk of students consulting each other while taking the exam.

7. **Include an integrity statement in your exam**
   As one of the ways to promote secure online assessment, it is important that students should confirm that they are aware of the University’s expectations in terms of acting with integrity while taking the exam (section 3.2).

8. **Find out whether any students are unable to participate in remote assessment**
   It is important that our education remains accessible for all students, including during the Corona crisis. For students who do not have access to the necessary technology, who do not have a suitable home-working environment, who have privacy-related objections or who have a disability, there may be other options that can be discussed with the study advisors (chapter 6).

9. **Notify every assessment occasion to students at least 5 working days in advance**
   Students must be able to prepare thoroughly for the exam and must be given sufficient time for this. They must therefore be notified of the changes at least five working days before the changed form of assessment will take place (when will the exam be held, what form will it take, what materials will be permitted?). They can be notified via Blackboard, for example. While five working days is the minimum, teachers should preferably communicate with students about this as soon as possible.

---

**Do you need some assistance?**
If you have any questions or need additional information, you can seek assistance via a number of channels:

- Faculty ICT&E coordinators or ICT&E staff: contact information of the ICT&E teams can be found on the website [https://remoteteaching.screenstepslive.com](https://remoteteaching.screenstepslive.com) or via the faculty web pages. They can also offer a more specific manual or set of instructions, for example, and can help you to prepare exams or refer you to the right people for this. The arrangements are different in each faculty.

- You can also ask questions via the Remote Teaching tile in the Helpdesk portal on the staff website, where all questions about delivering online teaching are welcome.

- If you have problems relating to software or other technical questions, the ISSC helpdesk will be pleased to help. Call 071 527 8888 or ask your question via the ICT Helpdesk portal.
Options available for remote assessment

Various options for delivering remote assessment within our University are described below. They are based on the tools that are already available within the University and can therefore be used immediately without any extra costs. The emphasis lies on written tests and exams that are taken at a fixed time and/or within a fixed time period (sections 2.1 - 2.4). Remindo and Ans are specialised examination tools, so students and teachers find them more user-friendly for exams than the more general tools, such as Brightspace and Blackboard. Most of the faculties of Leiden University have a licence for either Remindo (LUMC, Faculty of Humanities, Faculty of Social & Behavioural Sciences) or Ans (FGGA, Leiden Law School, Faculty of Science). We will also look briefly at the use of Skype for oral exams (section 2.5).

The general principle is that the assessment should be designed as effectively as possible within the context of the teaching that has already been offered and the communicated learning objectives (in terms of content and depth). You should choose an assessment method that is both technically and practically feasible (keep it simple: for student and teacher) and as resistant to cheating as possible.

2.1. Blackboard and Brightspace

Blackboard and Brightspace can be used for online hosting of exams. These platforms have the option of releasing exams and questions on the basis of various criteria. All teachers have worked with one or both of these tools, and technical support is available in all faculties. Two options are highlighted here: (1) a Take-home Exam, which is submitted via a Turnitin Assignment, and (2) a Blackboard Test. The descriptions below are based on Blackboard because all faculties have this platform, but both options are also available in Brightspace.

1. Take-home Exam via Turnitin (in Blackboard)

On the day of the exam, an ‘open book exam’ becomes available on Blackboard, and students can complete it when they like within the ‘timeslot’. They save their work in a Word file or in the supplied template, and then submit it via a Turnitin Assignment. This option makes few technical demands, so there is very little risk of technical malfunctions. A plagiarism check can be included.

| Type of exam question | - Avoid closed questions
|                       | - Make open questions very specific: no ‘ready knowledge’ questions
| Guidelines for use    | - The exam should be offered on the same day as the original exam, with a fair and feasible ‘timeslot’. You should also take account of international students, many of whom will have travelled home and... |
will therefore be working in different time zones. A Take-home Exam for a course with international students may therefore need to be available / open for longer.

- Multiple shifts / timeslots can also be used for courses with international students, but in that case you should use different versions of the exam.
- Always state that your deadlines are 'CET'.

A **Rubric or Grading Form** can be linked retrospectively to the Turnitin Assignment, so that teachers can divide the grading work per question and the points are automatically summated. (Please note: a Rubric that is entered in advance is also visible to the students!). See Appendix 3 for **an example of a rubric**.

- It is possible to **work with different versions** of the Take-home Exam – the Groups tool in Blackboard can be used to divide students into groups, each of which can download its own version of the exam.
- If the content of the exam is correct and complete, you can create several different versions by differentiating on the following points: order of questions, changing specific words in the description / examples, the numbers / values that are used.
- Save these different versions (2 to 4) separately as PDF documents. The text should not contain any elements that indicate to students that different versions are being used.
- Each of the different versions is placed in a separate section in Blackboard. Division into groups is then imposed on this: the students are randomly divided across the different versions.
- The students can see only one version of the Take-home Exam in Blackboard, and will not specifically notice that there might also be other versions. A Turnitin link is also placed in each of these sections.
- Turnitin by Groups is used for grading; teachers are enrolled in the group that they are grading, to make it easier for them to remember which version they are grading.

If possible: reformulate questions as **open questions** (see chapter 4).

**Points for attention with Take-home Exam**

- In view of the longer time allowed for submission and the correspondingly greater risk of cheating, it is important to formulate the questions in such a way that they require students to engage in their own analysis and (creative) application, for example by means of arguments or essay questions, or their own research.
- Inform students that the deadline for submission will be observed strictly to the exact minute. Advise them to check their wifi connection in advance, and not to
wait until the very last quarter of an hour to submit their exam. This will avoid the risk of their work only actually being sent after the deadline, and therefore missing that deadline.

### 2. Test via the Blackboard Test Canvas

The standard functionality in Blackboard can be used to deliver a test that is available for a limited time. Students log in to Blackboard with their ULCN account and complete the test, which can consist of open or closed questions, or a combination of these. It is not possible to perform a plagiarism check with this form of assessment.

<table>
<thead>
<tr>
<th>Type of test question</th>
<th>Considerations for use</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Closed questions (MC) can partly be retained; answer options for each question can be randomised</td>
<td>- The exam can be generated in random order for each student (this discourages collaboration between students: 'Question 1’ is different)</td>
</tr>
<tr>
<td>- It is possible to use a rubric that is not visible to students (unlike in the case of Turnitin)</td>
<td>- Test settings: 1 question per screen, no ‘trackback’</td>
</tr>
<tr>
<td>- The question types Essay, Short Answer (both types of open question) and Multiple Choice can be used; these are question types that are familiar to students</td>
<td>- Can be open for a limited time (differentiation for students who are entitled to extra time can be set via Blackboard Groups)</td>
</tr>
<tr>
<td></td>
<td>- Navigation for graders is slightly less intuitive than via Turnitin; brief instructions may therefore be necessary</td>
</tr>
<tr>
<td></td>
<td>- This scenario can have considerable advantages in composite exams (with both open and closed questions), but there is the complication that longer (essay) questions cannot be checked for originality. In that case, you will have to reconsider using Turnitin to exclude the possibility of plagiarism (if this is an important issue for the course concerned)</td>
</tr>
</tbody>
</table>

| Advanced forms | Working with a question pool, from which a ‘unique’ test is generated for each student. Possibilities could be a slightly different question for each learning objective (drawn from a kind of mini-question pool) with different examples or a different case study |

| Additional possibilities for plagiarism check | - In the case of a small course with very few students, support staff can manually submit the text of longer (essay) questions for a student in a Turnitin Assignment (after the exam, when everything has been submitted). NB: in that case, this must be an 'Unavailable' Assignment, which is also invisible in the Grade Center! |
| | - Another option is a Turnitin Assignment in a separate (Unavailable) Blackboard module, in which the essay elements can be checked |
for plagiarism. In that case, the same students must be enrolled here, but if the module is Unavailable then this checking measure can take place without them being aware of the existence of an extra Blackboard module. Teachers can create this in their own ‘Plagiarism check’ page or can request support for e.g. a temporary Blackboard module with this purpose.

- These settings and measures can be organised after the exam has taken place.

Example of procedure to also make the exam available to resit students

Teachers who are planning to perform or coordinate their assessment via Blackboard must ensure that everyone who is enrolled for the exam can actually take that exam. This means that students who are repeating / resitting the exam must also have access to the correct Blackboard module. Equally, it is more convenient for assessors if all the exams to be graded can be found in one place after the exam has ended. The following procedure can be considered for this purpose:

1. The replacement exam (the remote assessment) is placed in the Blackboard module of the current course. This already contains all the students who are currently participating in the course.
2. The other students who are enrolled for the exam must then also be added to this module. The Student Services Centre (OSC) can supply this information as soon as the enrolment period has ended (three days before the exam).
3. To prevent any mistakes, old versions of the course to which students might still have access in Blackboard must be set to Unavailable.
4. Once all the students who are enrolled for the exam are listed in the Blackboard module, you have to switch off the Self Enrollment option.
5. Once all the participants in the exam are listed in the Blackboard module, you can post an Announcement giving the specifications of the new exam. Please note that students have the right to receive this information at least 5 working days before the exam.
6. The exam materials are made invisible, and the availability that was agreed with students can be entered in the Assignment in advance. (If you are in any doubt, please ask someone from ICT&Education to check these settings).
7. The assessors can start work as soon as the exam occasion / time period has ended. In most cases, students will not be intended to see the feedback / grades via Blackboard (at least, not before the grades are known). You should therefore hide the relevant column in the Grade Center and make the correct settings in Turnitin. You are also welcome to ask the ICT&Education staff to help with this.
More information?

- Creating tests and surveys in Blackboard:
  https://help.blackboard.com/Learn/Instructor/Tests_Pools_Surveys/Create_Tests_and_Surveys
- Instruction video on creating a test in Blackboard Test Canvas:
  https://www.youtube.com/watch?v=hm551SOtYzY
- Working with a Turnitin Assignment via Blackboard:
  https://www.medewerkers.universiteitleiden.nl/binaries/content/assets/ul2staff/onderwijs/innovatie/user-manual-turnitin-in-blackboard-for-instructors-eng-only.pdf
- Creating tests and working with a Turnitin Assignment via Brightspace:
  https://universiteitleiden.screenstepslive.com/m/86678

2.2. Examination tool: RemindoTest

Remindo enables you to manage the entire process of testing and examination from a single online environment. You can create tests using combinations of question types; enrich case texts with images, videos and audio clips; present tests in a secure digital environment; and make the results available to the participants (see Box 1).

Remindo can be used for both summative and formative digital tests and exams. The options offered in Remindo allow you to improve the quality of your exams, for example using more authentic question types, direct feedback and analysis possibilities. You can also work more efficiently, for example by building up a question collection and re-using questions.

Box 1 – Various options within Remindo

- **Add media to questions**: images, videos, audio files and PDF documents can be added in Remindo.
- **Score types**: awarding points (single correct/incorrect or multiple correct/incorrect). Closed questions are graded automatically and open questions are graded manually in digital format.
- **Test matrix**: create a test matrix and use this to select which questions will be included in the ultimate test. Remindo can also make a selection from a group of questions.
- **Test analysis**: the following values are available in Remindo: at the test level: Cronbach's alpha, p-, Rit-, Rir-, Rar- and Rat-value and standard deviation; at the question level: p-, Rit-, Rir-, Rat- and Rar-value.
RemindoTest consists of two environments:

- **Management environment (RemindoTest Manager)**
  The management environment contains the question collection. Questions are entered and saved here, and tests are compiled on the basis of a test matrix. The test or test matrix is exported from the management environment to the test environment by activating the test matrix.

- **Test environment (RemindoTest)**
  A test occasion is created in the test environment on the basis of the activated test or test matrix, and students are linked to this test occasion. Students can only access a limited part of the test environment. After students have taken the test, coordinators and/or teachers have access to the results of the test and individual test questions, and an analysis of these.

**Figure 1 – Different types of questions in RemindoTest**
<table>
<thead>
<tr>
<th>Question type in RemindoTest</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>multiple choice question</td>
<td>A question with multiple answer options (usually 3 or 4), of which 1 answer option is correct and the other answer options are distractors.</td>
</tr>
<tr>
<td>multiple response question</td>
<td>A question with multiple answer options, of which multiple answer options are correct and the other answers are distractors.</td>
</tr>
<tr>
<td>hotspot question</td>
<td>The correct point / area must be indicated on an image.</td>
</tr>
<tr>
<td>graphic association question</td>
<td>Correct associations must be made between an image and several answer options (images / words).</td>
</tr>
<tr>
<td>text entry question (number/word)</td>
<td>A question or sentence with a blank space into which text or a number must be entered.</td>
</tr>
<tr>
<td>drop-down question</td>
<td>A question or sentence in which an answer option must be selected from a drop-down list in one or more places.</td>
</tr>
<tr>
<td>order question</td>
<td>The answer options (in the left-hand column) must be placed in the correct order (in the right-hand column).</td>
</tr>
<tr>
<td>drag &amp; drop question</td>
<td>The elements (images) must be moved to the correct place on the large image.</td>
</tr>
<tr>
<td>matching question</td>
<td>A correct match must be made between the horizontal and vertical options.</td>
</tr>
<tr>
<td>upload question</td>
<td>This question involves uploading a file.</td>
</tr>
<tr>
<td>open text question</td>
<td>A question without answer options. The candidate must formulate the answer him/herself.</td>
</tr>
<tr>
<td>composite question</td>
<td>For a composite question, it is possible to add text or an image that relates to multiple questions.</td>
</tr>
</tbody>
</table>

What steps do you need to take?

1. To create an account, teachers in the Faculty of Social & Behavioural Sciences can contact solo@FSW.leidenuniv.nl, and teachers in other faculties can contact ecole@hum.leidenuniv.nl. You will be asked to state the faculty for which you want to use Remindo, what the name of your question collection should be, and the course for which you want to use Remindo.
3. Start by creating a category structure for your question collection.
4. Formulate exam questions for the various categories and place them in those categories. Make sure that you use a variety of question types in your exam (see Figure 1 for the possibilities).

5. Create an Assessment Template.

6. Publish the Assessment, to make it possible for students to take this exam.

7. After the students have taken the exam, you have to grade the open questions (if the exam contained any) in digital format in Remindo. Closed questions are automatically graded by Remindo. You can use the test analysis values generated by Remindo to analyse your questions. Remindo does not include a plagiarism check for open questions.

Processing images for use in RemindoTest
This ‘Images for Remindo’ (12 min.) instruction video explains aspects such as how to install Photoshop, change the resolution for images in Remindo, use images from the internet and use a range of Photoshop techniques:
https://ondw-farmo2.lumc.nl/mp4/div2/Lars/LR_AfbeeldingenMakenInRemindo_01.mp4

More information?
- A detailed manual is available in RemindoTest. To open this, click on the information icon in the top right-hand corner in RemindoTest.
- See Appendix 1 for differences in use options between Ans / Remindo and Blackboard / Brightspace (in conjunction with Turnitin).
- The LUMC offers two very clear instruction modules for using RemindoTest, which are also accessible to external viewers:
  - https://coo.lumc.nl/div2/remindoemodule/remindotoetsmanager/
  - https://coo.lumc.nl/div2/remindoemodule/remindotoets/

2.3. Examination tool: Ans

Ans is a platform that teachers can use to compile and grade exams. The teacher formulates the criteria to be used for grading on the digital platform. The grading takes place horizontally: per question, instead of per student. The platform also immediately produces statistics about the exam, which teachers can use to detect pitfalls for students. After the exam, teachers can publish the questions and answers for the students. The fact that students can see the feedback to their exam questions online and can respond to it immediately makes the exam inspection occasion more accessible.

What steps do you need to take?
1. Go to https://secure.ans-delft.nl/users/sign_in
2. Fill in ‘Leiden University’. You will then be redirected to the Leiden University login page.
3. At the login page, enter your user name and password for your ULCN account. When you log in to Ans for the first time, you must give Ans permission to process your personal data.
4. You will then have access to the dashboard, where you can see all the exams to which you have access and can read more information.

5. Go to the exam in Ans and click on 'Exercises'.

6. The structure of an exam in Ans is as follows: every new exam assignment in Ans is an 'exercise'. Content (for example, information about the case study) or questions (the actual question or subquestion) can be placed under each exercise. You must therefore always start with ADD EXERCISE.

7. You can then fill the exercise via ADD CONTENT and/or ADD QUESTION.

8. If students are going to receive a large amount of information in advance (for example, a case study) and/or if the information concerns more than just one specific subquestion, it is advisable to make that information available via ADD CONTENT > Description. You can also add new content after a subquestion, such as information about how the case study continues. To add a (sub)question, click on ADD QUESTION. All kinds of questions are possible, the most frequently used variant being the 'Open question'. Make sure you use a variety of question types in your exam (see Figure 2).

9. Within an exercise, you can easily change the order of questions or content by dragging these elements. To change the order of exercises, you need to use 'Flow'.

10. Under the 'Flow' tab (at the top of the page) you can do two things: change the order of the exercises, and group exercises together for randomised exams. Each exercise is automatically placed in a separate question group (evident from a grey box). Change the order of the exercises by dragging a grey box.

11. To generate randomised exams, it is possible to group exercises together and to stipulate that each student must receive one or more of the exercises from that group. You can group the exercises as you wish. For example, if you want to make sure that students will in any case receive certain assignments about, for example, a specific topic or with a specific difficulty level, you will group these assignments together.

12. Publish the exam, to make it possible for students to take this exam.

13. After the students have taken the exam, you must grade the open questions (if the exam contained any) in digital format in Ans. Closed questions are automatically graded by Ans. Ans does not include a plagiarism check for open questions.

Figure 2 – Different types of questions in Ans

<table>
<thead>
<tr>
<th>Question type in Ans</th>
<th>Grading options</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open question</td>
<td>Manual with criteria or a rubric</td>
<td>A question without answer options. The candidate formulates the answer him/herself.</td>
</tr>
<tr>
<td>Numerical question</td>
<td>Automatic possible</td>
<td>Students answer with a number.</td>
</tr>
<tr>
<td>Mathematical question</td>
<td>Automatic possible</td>
<td>Students answer with a formula, equation or calculation.</td>
</tr>
</tbody>
</table>
Multiple choice question | Automatic | One or more correct answers are possible.
Order question | Automatic | Students must drag items into the correct order.
Fill in the blanks question | Automatic | A question or sentence with a blank space into which text or a number must be entered. This is graded with criteria entered by the teacher.
Coding question | Manual with criteria or a rubric | Students enter a code as their answer.
Hotspot | Automatic | The correct point / area must be indicated on an image. The teacher defines the ‘hotspot’ in the criteria section.
Hotspot match | Automatic | Multiple correct points / areas must be indicated on an image. The teacher defines the ‘hotspot’ in the criteria section.
Match | Automatic | A correct match must be made between the horizontal and vertical options. One or more correct answers are possible.

More information?
- Support page for Ans: https://support.ans.app/hc/en-us
- See Appendix 1 for differences in use options between Ans / Remindo and Blackboard / Brightspace (in conjunction with Turnitin)

2.4. Online proctoring: ProctorExam

Blackboard / Brightspace, Remindo and Ans do not have any built-in checks for monitoring students while taking the exam. To reduce the risk of students cheating during online exams, there is the option of home examination with remote invigilation; this is also known as ‘online proctoring’. It is achieved by recording images and sound of the student at home. Leiden University recently acquired access to the online proctoring tool ProctorExam. If so wished, ProctorExam can be combined with delivering assessments in any online examination platform, naturally including Blackboard / Brightspace, Remindo and Ans.

Group size
To guarantee stability in the use of ProctorExam, a maximum of 50 students per 15 minutes can be admitted to the system. A maximum of 150 students can participate per exam. If there are more students, an extra exam occasion with a different version of the exam can be timetabled.

Procedure
- Once students have successfully completed an identity check and technical check and the recordings have started, they enter a secure environment in which the
exam can be taken. Students must follow a strict protocol for this, including removal of all materials from their table or desk, switching off all potential ‘cheating’ software and making a scan of the room before starting the exam.

- While taking exams with the proctoring software, recordings are made of the candidate, his/her surroundings and his/her computer screen. Monitoring takes place by means of the screen and the webcam (the phone camera may perhaps also be added here – at present, this option is switched off for reasons of capacity). Photographs of the candidate and his/her identity document are also taken while setting up the proctoring software. These data are stored by the supplier of the proctoring software (GDPR compliant).
- Recordings are reviewed within 48 hours by specialised ProctorExam reviewers on the basis of assessment criteria provided by the study programme. Any suspicious moments are also viewed on the online platform by the teacher, for the purpose of checking. If it is decided that this could lead to the candidate’s exclusion, these images will be submitted to the Board of Examiners, who will deliver a final judgement on the matter.

Privacy aspects
The Privacy Officer of Leiden University was closely involved when this collaboration was established. ProctorExam operates in accordance with the GDPR, and a data processing agreement has been signed by both parties. No biometric personal data are processed. The student’s identification is carried out by a human person, who identifies him/her on the basis of the images and a photograph of the identity document (not a document with the student’s Citizen Service Number (BSN)). After the image material has been deleted, the student can no longer be identified.

Access to the images must be restricted to the necessary individuals. Each study programme / faculty will designate a person who is responsible for deleting the material. This does not happen automatically. The images will have to remain available until the results of the exam have been established, or until the end of an appeal procedure.

If students have objections against taking an exam in combination with online proctoring for privacy reasons, it is possible that an alternative can be offered (see chapter 6).

What is expected of the teacher before and during the online exam?
Teachers must work closely with the ICT&E Education (ICT&E) coordinator to make sure that the exam can be offered in the correct way for online proctoring. Important points for attention here are:

- Exact start time and end time of the exam.
- Clear specification of the actions and materials that are permitted when students are taking the exam (calculator, paper, permitted internet pages, required computer software, etc.). The standard basic principle is that nothing is permitted. You must inform students about this before the exam.
- A half-hour before the start of the exam, the teacher and the ICT&E coordinator must be present in an online conference environment.
• While the students are taking the exam, the teacher (for exam-related questions) and the ICT&E coordinator (for Remindo- or Ans-related support) must remain on standby online. The ProctorExam technical helpline (Tawk) can also be used 24/7 for questions related to the ProctorExam tool. The faculty’s ProctorExam administrator can add these users to the ‘backend’ of Tawk before the exam.

• Tawk-chat offers staff members the possibility of making contact with the student during the exam.

The exam is a streamlined process in which the students go through the correct information and technical checks in good time by means of messages. This process has already been fully organised by ProctorExam and can be supplemented, if desired, by the faculties and/or teachers.

More information?
• All the practical information for students and teachers can be found here.
• ProctorExam demo: Online Proctoring
• How to create an exam: [https://drive.google.com/file/d/1NCh2GXbFDLqgjwOgDdfjFLXMxNZ32_/view?usp=sharing](https://drive.google.com/file/d/1NCh2GXbFDLqgjwOgDdfjFLXMxNZ32_/view?usp=sharing)
• Check what requirements must be met: [https://drive.google.com/file/d/1C-beBxx_yTfkxMA31tmHyfUKgTi8GVxw/view?usp=sharing](https://drive.google.com/file/d/1C-beBxx_yTfkxMA31tmHyfUKgTi8GVxw/view?usp=sharing)
• Taking the exam from the student’s perspective: [https://drive.google.com/file/d/1z5s-wYbjQaoUX1VTMHc1C8z2T8cUzD/view?usp=sharing](https://drive.google.com/file/d/1z5s-wYbjQaoUX1VTMHc1C8z2T8cUzD/view?usp=sharing)
• How students are monitored while taking the exam: [https://drive.google.com/file/d/1zdvDqvU3F3Y-dko92R3Q8-TBwk_0KyhV/view?usp=sharing](https://drive.google.com/file/d/1zdvDqvU3F3Y-dko92R3Q8-TBwk_0KyhV/view?usp=sharing)
• Interview with a student (WUR) about her experience with online proctoring: here (opens in new window).
• Interview with a teacher (WUR) about using online proctoring: here (opens in new window).
• An instruction video from the student’s perspective: here (opens in new window).

2.5. Skype: oral exams

If the student numbers are small, a possible option can be an oral exam via Skype. An oral exam is a good way to assess higher knowledge levels without making demands on the student’s writing skills. The direct form of exchange between the teacher and student also offers the opportunity for the teacher to ask follow-up questions and to give immediate feedback (in the case of a formative test). The rule is that no more than one student at a time may participate in an oral exam, unless the Board of Examiners has decided otherwise.

In certain cases, where there are small groups and very specific teaching, the planned assessment can be replaced by a form of assessment that uses video. For example, a presentation that was intended to be given in the group can be replaced by a presentation that students record themselves – in an assignment organised using Pitch2Peer. Exams in which students must evaluate video clips can partly be taken via Kaltura Live Room. Virtual
Classroom in Brightspace could be a possibility if you want to facilitate students taking turns, with an audience and/or with interaction.

Points for attention
• An oral exam usually takes 45-60 minutes, to obtain reliable results.
• Ask the student to show an identity document to the camera. This can be a public transport (OV) card or another photo-ID card, but if the card includes his/her Citizen Service Number (BSN), this must be covered up.
• Record the session and save the recording, to avoid any subsequent discussion about how the grade was determined. You can also use the recording to score the student’s answers.
• Explain clearly to the students that the recording is confidential and that you will keep it for one year. You must also comply with the GDPR by asking students for prior written consent to recordings being made and retained for the purpose of quality assurance and dispute resolution.
• A second assessor should preferably be present at the oral exam. If this is not possible, the recording can be viewed by a second assessor.
• Make sure that you have enough variants of questions, so that you can vary them for each student. You should assume that students will tell each other about the questions that were asked.
• Make the oral exam into a dialogue. This can help to reduce the students’ tension.

More information?
In this video Kristina Edström (Uppsala University) explains an efficient way to hold oral exams: https://youtu.be/PvZR4yCUimo?t=1696
Creating a secure online test environment

When universities conduct tests using computers, those tests are taken in standard test environments which have themselves been tested for usability and security. In the current situation, remote testing is the only option. This highlights issues such as how to check that the right person is taking the test and how to prevent students using unauthorised sources.

Although it is impossible to guarantee total security, even at ordinary test venues, the risk of cheating can and must be reduced wherever possible. A range of measures are available to do just that. This chapter provides guidelines for secure testing (3.1) and proposes adding an integrity statement to the test (3.2).

3.1. Guidelines for a secure test environment

- Limit opportunities for students to discuss the test material, collaborate or look up information: formulate your questions as open questions or essay questions (see Chapter 4 and Appendix 2), limit the time in which students can take the test (offer a realistic time slot, preferably between 90 minutes and two hours) and present the questions to each student or group of students in a different order.
- Communicate clearly with the students about the form, content, timing and ‘rules’ of the alternative style of testing. At the start of the test, state explicitly which devices (laptop, tablet and/or smartphone, students’ own equipment, etc.) and sources they are permitted to use during the test.
- Make sure that a test in an online assessment tool can only be started once (an emergency procedure is available for use in exceptional circumstances).
- Make it impossible for students to ‘backtrack’ (return to previous questions).
- Always check the students’ identity before they start the test. This is particularly important for tests that are taken outside an online assessment tool. It is part of the procedure in ProctorExam; students taking oral tests by way of video calling should hold up their proof of identity in front of the camera.
- Be aware that it will be almost impossible to prevent test questions being shared after the test is over. This means that you will not be able to reuse those questions.
- Use anti-plagiarism software once the test is complete. Leiden University uses Turnitin, which is available in Blackboard/Brightspace as ‘Turnitin Assignment’.

3.2. Including an integrity statement

To ensure ethical behaviour, all students need to understand the principles they should follow – even more so in an unfamiliar situation such as remote testing. An integrity statement increases transparency around integrity and ensures that students are aware of
what it means to act with integrity. It can serve a protective purpose in identifying risks, clarifying what is and is not allowed and helping students resist temptation.

For that reason, it is a good idea to inform students that, even in these exceptional circumstances, they are still expected to behave responsibly and with integrity (to submit only their own work, not to collaborate, etc.). One way to do this is to get students to confirm at the start of each test that they are aware of what the University expects of them in terms of ethical behaviour whilst completing the test. You can find an example of a general integrity statement below.

Dutch:
Vanwege uitzonderlijke omstandigheden wordt deze toets online afgenomen. Wij vertrouwen erop dat elke student naar beste eer en geweten deze toets zal maken en bij het inleveren van deze toets voldoet aan de voorwaarden van de regels en richtlijnen omtrent fraude en plagiaat van de Universiteit Leiden.

English:
As a result of exceptional circumstances, this test is being taken online. We trust that every student will adhere to answer the questions and perform the assignments in this test to the best of your own ability, without seeking or accepting the help of any source that is not explicitly allowed by the conditions of this test.

Creating online tests

When creating online tests in the situation we currently find ourselves in, it is helpful to distinguish between modules for which the teaching has ended or is still ongoing and modules which have not yet begun. In the case of completed and ongoing modules, it is important to complete the module as thoroughly as possible and not to delay completion unnecessarily. Modules which have not yet begun can be adapted to use remote forms of both teaching and testing.

Remote testing often places particular demands on the design of the questions. This form of testing is less suited to questions, including multiple-choice questions, which primarily test knowledge (‘describe’, ‘name’, ‘identify’, ‘define’, etc.) and understanding (‘distinguish’, ‘recognise’, ‘categorise’, ‘select’, etc.), mainly because these types of questions pose a risk to the security of the test. In general, when conducting tests remotely it is better to set questions and assignments that focus on making connections rather than on direct information that can be found in a book or on the Internet. Open questions and essay questions are good examples of this kind of task, as they are geared more towards understanding and applying knowledge (for more on this, see Sections 4.1 and 4.2).
4.1. Open questions and essay questions in a fixed time slot

Teachers use online written tests to test a group of students. All the students start the test at the same time – the start time – and they all submit their answers before the end time. While they are completing the test, the students are **not allowed to use any learning materials**. An online test with open questions or essay questions facilitates the active retrieval of knowledge from the student’s memory better than multiple-choice questions, for example, which are generally limited to identifying relevant information.

**Tips for creating a valid, reliable test:**

- Compose several alternative questions of equal value, so you can vary the question each student is asked.
- Draft a model answer to each question. Set out certain aspects that must be included in the answer, and state how many points the student can gain for each aspect. Where relevant, refer to common mistakes and explain which mistakes will cause the student to lose points.
- When marking the test, create a rubric for each question to enable you to assess the answers quickly and accurately (see Appendix 3). You can use rubrics in ANS and Turnitin, in association with Blackboard/Brightspace.
- Use case studies. A case study question begins with a description of a specific problem. The description is followed by questions about that problem, ranging from the simple to the difficult.
- Get a colleague to check the test paper before the date of the test (sometimes called the ‘four eyes rule’).

**Points to consider**

- Limit the scope of each answer, for instance by setting a word limit or indicating how many aspects the answer should include.
- Upload a practice paper to give students the chance to familiarise themselves with online testing.
- Make sure the answers include individual elements: get students to apply their knowledge, make their own judgements or provide examples, and ask them to demonstrate how they reached the answer they gave.

4.2. Take-home exams and open-book exams

A take-home exam is similar to an open-book exam. In an open-book exam, all students complete the test at the same time, within a set time frame; in the case of a take-home exam, both the start/end times and the time span can vary between students, for instance over half a day, one full day or even multiple days. The students are **allowed to use course materials** to help them complete the test. Rules are set out in advance regarding the materials that can be used in an open-book exam; no restrictions are placed on the use of resources to complete a take-home exam.
This type of exam is intended to test students’ understanding, analytical skills and ability to apply their knowledge and reflect critically on a topic. This is also a good test of their reasoning and problem-solving skills. To refer to Bloom’s taxonomy, this test type focuses on the learning objectives for ‘understanding’, ‘applying’, ‘analysing’, ‘evaluating’ and ‘creating’. See Appendix 4 for some sample question starters.

Box 2 – Assignment types
- A case study or problem for the student to explore, using particular sources
- Drawing valid conclusions from the text provided
- Interpreting the facts/data provided from the perspective of various different theories
- Comparing and contrasting certain theoretical perspectives
- Identifying the theoretical perspectives present in the text provided
- Commenting on the internal validity of a study
- Writing a research proposal
- Substantiating a statement using a range of sources

Points to consider
- To improve the reliability of the test, it is important to formulate assessment criteria based on the learning objectives, and to discuss these criteria with the students in advance so they understand what will be assessed during the test.
- The assessment criteria and the various achievement levels should be explained in a rubric. Students can also use a rubric to assess or give feedback on each other’s work (see Appendix 3).
- Get a colleague to check the test paper before the date of the test (sometimes called the ‘four eyes principle’).
- Tell the students what you expect of them, for instance that they should not randomly refer to sources, but rather that they should use those sources as the foundation for their exploration of a case study or for their argument either for or against a given statement.
- Give students the assessment criteria in advance, as well as other criteria their assignment should satisfy, such as a minimum and/or maximum number of words or pages, the required system of referencing, etc.
- To make plagiarism more difficult, the assessment criteria could also include things like ‘originality’ and ‘critical reflection’.
- In addition, students could be required to submit a statement of academic integrity along with their completed exam (see also Section 3.2).
- Be clear about when and where the take-home exam will be made available, and how much time students have to complete it. Assignments should preferably be uploaded to Blackboard/Brightspace, which can send a ‘proof of delivery’ confirmation. Completed exams should preferably also be submitted through Blackboard/Brightspace using Turnitin, and not sent by e-mail.
• The duration of a take-home exam may vary. There is usually a time limit of 24 hours, in addition to a page or word limit. Take care not to schedule the take-home exam to conflict with other examinations or assignments (check the programme’s test schedule to be sure).

• Once students have access to the take-home exam, make sure you are available to resolve any questions or confusion. Let students know when and how they can reach you: by e-mail, MS Teams, etc.

• There must be a programme-wide procedure in place for cases where students fall ill during the time scheduled for the take-home exam.

4.3. Possible forms of mid-term testing

In addition to final examinations, it is also a good idea to consider the use of mid-term papers and assignments. These mid-terms help students remain engaged during periods of remote teaching, and the use of multiple tests spread out over time yields more representative results than the use of a single examination. You might choose to set weekly tests or a single mid-term test, in combination with a final examination. The use of multiple forms of testing also yields more representative results than the use of a single form. You could consider the following testing forms for mid-term (formative) tests:

Peer assessment – Pitch2Peer
Groups of students complete and submit assignments and/or presentations, then comment on the other groups’ submissions. The teacher receives each group’s work together with their peers’ comments, marks it and gives feedback. It is important to set out clear guidelines and assessment criteria, for example in the form of a rubric, to let students know what they should focus on when giving feedback. Pitch2Peer can also be used for other learning activities, such as marking homework and setting online quizzes.

Get students to come up with test questions
This is a way for students to show whether, and to what extent, they have mastered the material. The teacher provides clear guidelines for the criteria a question should satisfy. Students then submit their questions and, following the appropriate selection and adaptations by the teacher, answer each other’s questions. This also places certain demands on the module design and learning objectives: the design and objectives should be well adapted to this form of testing, and students must fully understand how they should interpret the learning objectives. It also requires a certain level of support from the teacher.

Find inspiration in MOOCs
Leiden offers MOOCs, facilitated by Coursera. Teachers can choose the most appropriate Coursera testing tools, such as:

a. In-video questions
b. Discussion prompts
c. Quizzes
4.4. Test matrix: aligning the test with the learning objectives

When you convert your usual form of testing into an online assignment, you need to make sure you are still testing all the learning objectives, and that those objectives are being tested at the right levels. Some kinds of learning objectives are a better fit for certain forms of testing than are other kinds. For instance, if you usually test understanding using multiple-choice questions and you switch to a take-home test, you may opt for questions that test learning objectives not only at the level of understanding but also at higher levels, such as analysing and evaluating.

A test matrix can help you design your test, making sure you are testing all the learning objectives and that they are tested at the right level. You can use Bloom’s taxonomy to determine the levels (see Appendix 4).

Figure 3 – Sample test matrix

<table>
<thead>
<tr>
<th>Learning objectives</th>
<th>Knowing questions</th>
<th>Understanding questions</th>
<th>Applying questions</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning objective A</td>
<td>2 x 5 pt</td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Learning objective B</td>
<td></td>
<td>1 x 10 pt</td>
<td>1 x 15 pt</td>
<td>25</td>
</tr>
<tr>
<td>Learning objective C</td>
<td>2 x 5 pt</td>
<td>1 x 10 pt</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Learning objective D</td>
<td></td>
<td>1 x 10 pt</td>
<td>1 x 15 pt</td>
<td>25</td>
</tr>
<tr>
<td>Learning objective E</td>
<td></td>
<td></td>
<td>1 x 20 pt</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>30</strong></td>
<td><strong>50</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Where to find more information

- Appendices 2, 3 and 4 offer some points to consider when setting open questions and creating rubrics.
• The website of the Dutch Open Universiteit (in Dutch) has useful information about online teaching and testing: youlearn.ou.nl/web/hulp-bij-online-onderwijs/digitale-didactiek
• Information on the ‘constructive alignment’ of goals, learning activities and testing: https://www.ru.nl/lecturers/education/educational-design/design-principles/constructive-alignment-0/

5 Online testing in line with the Course and Examination Regulations

Even when testing is conducted remotely, the teacher/coordinator/examiner module remains responsible for proper testing in accordance with the Course and Examination Regulations (OER). The Board of Examiners and Programme Director or Programme Chair must also still ensure – in the usual way, in consultation – that both teaching and testing comply with the OER. Given the paramount importance of testing and its associated legal consequences, any deviation from the testing methods outlined in the prospectus and module description (i.e. almost everything) must be agreed with the module coordinator/examiner, Programme Director or Programme Chair (depending on the faculty). When a case presents itself, these officers can make the joint decision to deviate slightly from the OER without that deviation having to be recorded in detail.

Opportunity to retake a test
Under normal circumstances, the regulations state that each module must offer an examination twice a year, with potential exceptions to that rule being set out in the prospectus. In exceptional cases, and representing a deviation from Article 4.1.1, the OER makes provision for the Board of Examiners to offer a student an extra opportunity to take an examination, at the student’s request.

The technical aspect of remote testing – together with the inevitable distance from or unavailability of technical support – means that it is entirely possible that technical problems will interfere with students’ ability to take the test: their system may fail, the supporting software may fail, they may become disconnected from the network, etc. These issues can raise complications that will require leniency and individual arrangements after the fact. The question of whether, when and how students may become eligible for a resit in such cases is for the Board of Examiners to decide.

Points to consider
• If the use of alternative forms of testing results in some learning objectives not being tested with sufficient thoroughness, this must be stated explicitly.
• Make sure you are accessible by e-mail during online tests to answer students’ questions – do not engage with them in the chat function, where the other students will be able to see your conversation.
• Advise students to take a screenshot if they experience technical difficulties.

6

Alternatives for students who are unable to take an online test

The switch to online education and assessment has the risk that some students who were previously reliant on and focused on the resources and facilities on University premises now have restricted access to following lessons and completing tests. The following issues need to be considered here:

1. Students who do not have the right test conditions or who, for privacy reasons, object to online proctoring
   As the switch to online education and assessment had to be made at very short notice, some students may not have the necessary facilities to be able to follow lessons and take tests from home. It is also possible that students do not have a suitable place at home for working undisturbed.

   In the case of remote invigilation (online proctoring), consent from the student is the most obvious basis for being able to work with their personal data. This consent must be given freely; the student must be able to refuse without experiencing any negative consequences. If a student is dependent on his or her teaching institution, consent can no longer be given ‘freely’. Institutions must exercise extreme caution in the way they handle this and they may not in any way attach consequences or effects to any refusal of consent. Cooperating with online proctoring also cannot be compulsory and in that case the institution must offer the student an alternative, at no cost to the student.

   Possible alternatives
   Students who are experiencing problems with equipment or with their home study environment should in the first instance approach fellow students for help. If this does not resolve the issues, the student should contact the study adviser to explore the possibility of having access to a loan laptop. Students who have privacy objections can contact the study adviser and, if necessary, the student counsellor.

2. Students with a functional disability
   Students with a disability regularly make use of special software. They are often also entitled to extra time in examinations. This extra time is usually in the region of 30
minutes for an examination lasting three hours. Visually impaired students are entitled to 50% extra time, and blind students who use braille software are entitled to 100% extra time. Many students with a disability are extra sensitive to outside stimuli and are easily distracted by noise in their surroundings.

There are a small number of students for whom the online exam possibility will not be a suitable alternative. This could be on the grounds of technological shortcomings, an unsuitable exam location or stress arising from Corona. These cases can best be resolved through discussion with the study adviser and, if necessary, the student counsellor.

Possible alternatives
- Students who make use of text-to-speech software for exams and who do not have this software at home can request a licence via fenestra@sea.leidenuniv.nl.
- If possible, take into account the need to allow individual students extra time in the online test environment.
- It may be possible to offer a custom-made test, such as an oral test via Skype (for blind students, for example). An alternative version of the test will be needed for these students. Students can apply to the Board of Examiners for such a test with the help of a student counsellor.
Appendix 1 – Differences in user options between Ans/Remindo and Blackboard/Brightspace (i.c.w. Turnitin)

<table>
<thead>
<tr>
<th></th>
<th>Ans/Remindo</th>
<th>Blackboard/Brightspace (i.c.w.) Turnitin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Method of submission</td>
<td>Students type their answer in Ans directly under each question</td>
<td>Students write their work in Word and submit the document via a file upload</td>
</tr>
<tr>
<td>Review method</td>
<td>Only possible online (it is not possible to print work submitted)</td>
<td>Work submitted can be printed for reviewing on paper, using Word, for example.</td>
</tr>
<tr>
<td>Assessment method</td>
<td>Via previously agreed criteria or a slider (where only the maximum number of points has to be fixed in advance) and a rubric. Additional feedback can be given via comments; no inline feedback</td>
<td>Inline feedback, overall feedback, rubrics, quickmarks</td>
</tr>
<tr>
<td>Plagiarism check</td>
<td>Not integrated</td>
<td>Yes</td>
</tr>
<tr>
<td>Word limit</td>
<td>Variable, not enforceable: teacher and student see indication of number of words. Separate limit at question level is possible</td>
<td>Not variable. Can only be determined retrospectively at document level and with no indication when limit is exceeded</td>
</tr>
<tr>
<td>Automatic checking</td>
<td>Yes, for some types of questions (multiple choice, match, rank, fill in the blanks)</td>
<td>No</td>
</tr>
<tr>
<td>Answer method</td>
<td>Students can only use text. There is also a ‘file upload’ type of question where, for example, an image can be requested</td>
<td>Students can use text and all other formats that can be used in a Word or PDF document (graphs, tables, etc.)</td>
</tr>
<tr>
<td>Online inspection</td>
<td>Yes. Also for dealing with requests for reassessments</td>
<td>Yes. Requests for reassessment are made outside Turnitin</td>
</tr>
<tr>
<td>Selection of questions</td>
<td>Can be made randomly from a range of questions so that students are given a ‘personal’ exam</td>
<td>Several assignments can be placed on Blackboard/Brightspace and distributed according to surname, for example</td>
</tr>
<tr>
<td>Splitting of questions</td>
<td>Automatically split by question, simple horizontal reviewing</td>
<td>Laborious. Only possible by making several Submit links. Students have to upload several files</td>
</tr>
</tbody>
</table>

29
Appendix 2 – Points to bear in mind when formulating open questions

General
- Always formulate a standard answer, and formulate the question based on the answer.
- Indicate in the standard answer how the points are allocated, and in the question make clear how many points can be scored.

Use of language
- Is the question formulated unnecessarily negatively?
- If the question has to contain a negation, have you made this sufficiently clearly visible (capital letter, italics or underline the negative element)?
- Does the question contain a double negative? If it does, reformulate the question so as to avoid double negatives.
- Does the question contain any unnecessarily difficult words?
- Can the way the question is formulated be misunderstood? If so, reformulate it or use response restrictions that make it clear in which direction the answer should go.
- Can the question be interpreted differently if the emphasis is shifted? If so, use a restriction or reformulate it.

Information
- Does the question contain sufficient information to be able to give the right answer?
- Is it possible to clearly distinguish the information and the problem definition? If possible, they should be split.
- Does the question give adequate instruction regarding the required length and form of the answer? You can do this by, for example, allocating a set amount of room for the answer or by indicating the number of lines that should be used for the answer.
- Formulate questions as clearly as possible by using such sentence constructions as: “Give two reasons...”, “Explain your answer...”, “Give three reasons why...”.
- Does the student know whether an answer has to be substantiated?

Relevance
- Is there a clear indication of the material or skill that the question relates to?
- Is any other skill being tested than the intended skill? (You could think here of visual memory, for example).
- Is it a trick question? Does it suggest a problem that doesn’t exist?
- Is the answer, or are hints at the answer, contained in the question?
- Is the type of question appropriate for the objectives and level of the assessment?
- Does the test properly reflect the testable objectives?

Presentation
- Is the use of images, graphs, tables, etc., functional?
- Is the presentation of the visual material clear and correct?
- Is there a clear, well-defined and concise explanation of the visual material?
- Does the question refer to the material correctly?
- Can the questions be distinguished from one another?
- Is the numbering of the questions transparent?

**The standard answers and correction criteria**
- Is there a standard answer for every question?
- If it is not possible to formulate a specific standard answer, are there clear assessment criteria in place?
- Is the standard answer likely?
- Is there a clear indication of what has to be assessed as 'incorrect' or 'partially correct', and how many points are allocated?
- Are there clear instructions for the assessors?
- Is the correction instruction neither too detailed (unworkable) nor too general (meaningless)?
- Does the lay-out of the document aid efficient assessment?

Appendix 3 – Working with rubrics

A rubric uses a set of criteria to describe the different quality levels related to the learning objectives.

A rubric is an appropriate assessment instrument for:
- Learning objectives at the level of insight and application
- Cognitive skills such as the ability to analyse, compare, problem-solve, etc.
- Performance skills such as making a presentation, working in a team, etc.
- Assessing products such as a research report, an art object, etc.

**Objective**
- To help define the expected performance
- To determine quality criteria
- To make clear the degree to which a particular level has been attained
- To be a tool for diagnostic assessment and for feedback to students
- To help you as a teacher improve the way you formulate the assignment

**Designing a rubric**

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Good</th>
<th>Satisfactory</th>
<th>Unsatisfactory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criterion 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Criterion 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Criterion 3</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The left-hand column contains the assessment or test criteria and the adjacent columns describe the assessment levels. There are generally three or five levels, and these can run from high to low or from low to high. The indicators are entered in the cells of the table: a brief description of the content is given per criterion for each assessment level.

The key question is: What do I as a teacher need to see, hear, read, etc., to know that the assignment has been carried out well? The following questions play a role here:
- What criteria always have to be present to determine that the answer is of good quality?
- How many gradations should there be for each criterion?
- What is a good description for each gradation of each criterion?
- What are the consequences for each gradation?
- How will you determine the final grade?
- Is the product more important than the process, or do both have equal weight in the assessment?

The basic criteria for a good rubric:
- It covers the correct content (it matches the learning objectives)
- It has clear criteria
- The number of levels is in line with the objective
• The levels are clearly defined

# Appendix 4 – Bloom’s taxonomy

<table>
<thead>
<tr>
<th>Type or level of question</th>
<th>Students are asked to ...</th>
<th>Example questions and starters</th>
</tr>
</thead>
</table>
| Knowing and remembering  | recall knowledge of subject matter relevant to the discussion. | - What, where, who, when, where ...?  
- How many ...?  
- List ...  
- Describe ...  
- Define ... |
| Understanding             | demonstrate understanding by constructing meaning from information. | - In your own words, ...  
- Explain how ...  
- What did X mean when ...?  
- Give an example of ... |
| Applying                  | apply knowledge and understanding to a particular task or problem. | - How would you use ...?  
- What examples can you find to ...?  
- How would you solve ___ using what you’ve learned?  
- What would happen if ...? |
| Analysing                 | examine different concepts and make distinctions between them. | - What are the parts or features of ...?  
- What are the competing arguments within ...?  
- Why is X different to Y?  
- Compare and contrast ...  
- What is the relationship between A and B? |
| Evaluating                | make judgements about concepts or ideas. | - What is most important/effective?  
- Which method is best?  
- Which is the strongest argument? |
| Creating                  | develop new ideas from what they know and understand. | - How would you design a ...?  
- What alternatives are there to ...?  
- What changes would you make?  
- What would happen if ...?  
- Suppose you could ___ what would you do?  
- How would you evaluate ...?  
- Can you formulate a theory for ...? |