

Use of Proctorio in combination with TestVision

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What is proctoring and what is Proctorio?

Proctoring is remote digital invigilation. This can be achieved in various ways using various software applications, some of which have been specifically designed for this purpose. This manual specifically deals with the **Proctorio** software, used in combination with an exam via the **TestVision** exam application.

Because of the corona crisis, knowledge tests that would normally be set on paper or in a digital form cannot be held (and at a later stage only with restrictions) in the normal, physical way. That is why the institutes have been asked to look at alternative forms of testing. For courses that cannot be completed with an exam in any other way than through a knowledge test (because of the content, scale or limited time), proctoring by means of Proctorio is a **last option**.

Proctorio is software that:

- 1) Records things during the exam, such as webcam images, the student's computer screen and sounds.
- 2) Records which student is sitting the test, for example by asking for proof of ID at the start of the exam.
- 3) Ensures that the student cannot do certain things during the exam, such as opening new tabs or printing.
- 4) Provides access to a number of tools during the exam (more specifically, calculator and a whiteboard, if set up)

Proctorio stores the images of the student and automatically detects '**abnormal behaviour**'. An example of abnormal behaviour is when the student walks away or looks away or when somebody else is seen in the room. This means that no one needs to be keeping an eye on what the student does in real time. Nor is anyone required to watch the entire recording of the exam of each student.

The only thing that needs to be done is for a '*reviewer*' to look at what the software has marked automatically as abnormal behaviour and to assess if there is reason for '*suspicion of irregularities*'. It may be something innocent, for example a student taking a sip of water or staring out of the window. However, it could also be a student using his or her telephone. How seriously the system rates certain potential forms of abnormal behaviour is not something that needs to be pre-set. This may be modified retrospectively per category of potential abnormal behaviour.

Note: Proctorio cannot fully exclude the possibility of fraud being committed or that questions end up in the public domain, please bear this in mind (having said that, this is also true for physical exams).

As the administrator(s) of the degree programme, you must do a number of things to use Proctoring. Each of these steps will be explained in more detail later in this manual.

1. Set the password for the required Proctorio configuration for the exam session in TestVision.
2. In the preparation of your exam, take into account the special circumstances of proctoring, for example the communication with students.
3. After the exam, you check whether the cases marked by the software as 'abnormal behaviour' should give cause to 'suspicion of irregularities' that should be submitted to the Examination Board.

Which Proctorio configurations can I use during an exam?

With each of the previously mentioned four aspects of Proctorio, it is possible to define what the software does or does not do during an exam. For example, for one exam you may want to limit as many options for students as possible. For another exam, though, students may be allowed to use course sites and Google.

The collection of options for a certain type of exam is called a 'configuration'. At the HU, we have a number of configurations that examiners can use when administering exams. **This means it is not possible to create your own configuration.** However, it is possible to adjust the weight or importance given by the system to various types of behaviours of students (explained in more detail later). If you like to know more about what each feature does, please refer to Appendix 1.

	Proctorio max	Proctorio hoog ("high")	Proctorio midden ("middle")	Proctorio laag ("low")
Storage				
Video	Yes	Yes	Yes	Yes
Audio	Yes	Yes	Yes	Yes
Screen	Yes	Yes	Yes	No
Internet traffic	Yes	Yes	Yes	No
Room	Yes	No	No	No
Lockdown				
Mandatory full screen	No	No	No	No
Only one screen	Yes	Yes	Yes	No
Only links within exam	Yes	Yes	No	No
Close open tabs	Yes	Yes	Yes	No
Turn off printer	Yes	Yes	Yes	No
Disable Clipboard	Yes	Yes	Yes	No
Block downloads	No	No	No	No
Empty cache	Yes	Yes	Yes	No
Disable right mouse button	Yes	Yes	No	No
Disable restart	No	No	No	No
Verification				
Video	Yes	Yes	Yes	Yes
Audio	Yes	Yes	Yes	Yes
Desktop	Yes	Yes	Yes	Yes
Identity	Yes	Yes	Yes	No
Signature	No	No	No	No
Log in	No	No	No	No
Tools				
Calculator*	None	None	None	Scientific
Whiteboard	None	None	None	Yes

*This calculator is specifically the calculator available within the Proctorio tool, this does not refer to the calculator within Windows or the calculator which can be set for a TestVision question.

How can I make sure that an exam is proctored?

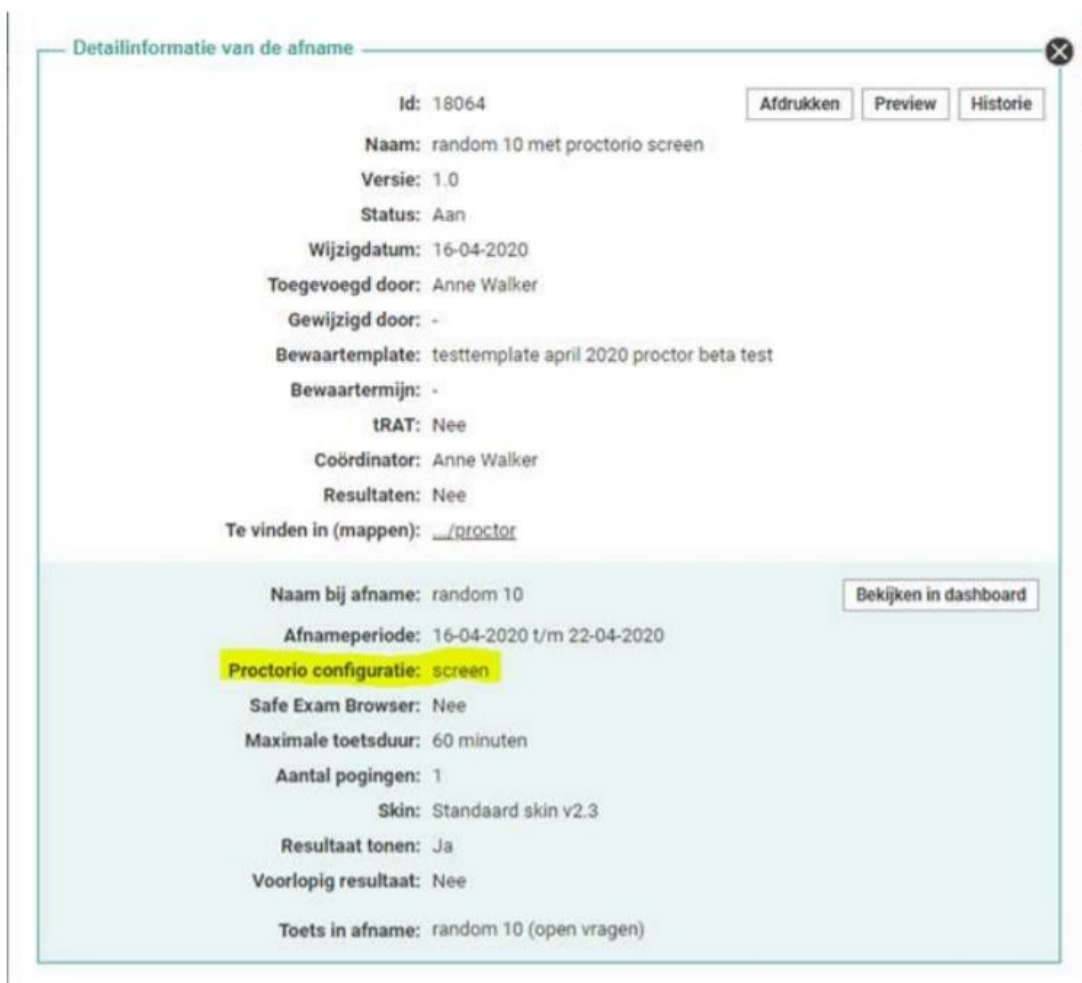
After you have created the questions for your exam in TestVision and created the exam with these questions, you need to link your exam to an exam session. You can set the exam session as a proctored exam session and indicate which configuration you wish to use. You can do this by entering the password that goes with the Proctorio configuration you wish to use in the Afname wachtwoord field (Exam Session Password), see Afname-instellingen, tabblad Controle (Exam Session Settings, Checks tab). Students will not be required to enter this password if they want to start the exam. Therefore, it is impossible with a proctored exam to set a password which students need to enter at the start of the exam.

The passwords (that go with the above-mentioned configurations) are as follows:

- Proctorio max
- Proctorio hoog ("high")
- Proctorio midden ("middle")
- Proctorio laag ("low")

Note: these passwords are case sensitive and sensitive to punctuation marks, spaces and so on.

You can check whether the correct password has been set not only under the exam session settings, but also by using the detailed information available during the exam (via the [i] button). See the example below.



The screenshot shows a window titled "Detailinformatie van de afname" with a close button (X) in the top right corner. The window contains the following information:

- Id:** 18064
- Naam:** random 10 met proctorio screen
- Versie:** 1.0
- Status:** Aan
- Wijzigdatum:** 16-04-2020
- Toegevoegd door:** Anne Walker
- Gewijzigd door:** -
- Bewaartemplate:** testtemplate april 2020 proctor beta test
- Bewaartermijn:** -
- tRAT:** Nee
- Coördinator:** Anne Walker
- Resultaten:** Nee
- Te vinden in (mappen):** ../proctor

At the top right of the window, there are three buttons: "Afdrukken", "Preview", and "Historie".

The bottom section of the window, which has a light blue background, contains the following information:

- Naam bij afname:** random 10
- Afnameperiode:** 16-04-2020 t/m 22-04-2020
- Proctorio configuratie:** screen
- Safe Exam Browser:** Nee
- Maximale toetsduur:** 60 minuten
- Aantal pogingen:** 1
- Skin:** Standaard skin v2.3
- Resultaat tonen:** Ja
- Voorlopig resultaat:** Nee
- Toets in afname:** random 10 (open vragen)

At the bottom right of this section, there is a button labeled "Bekijken in dashboard".

What else must be done in order to administer an exam with proctoring?

Indicate which exams will be administered with proctoring in a central way

Which exams are proctored is determined by the organizers of the degree programme (in consultation with the Examination Board), as is the question who within a degree programme will assume which tasks with regard to proctoring. As mentioned, one has to take into account that invigilation with Proctorio is a **last resort**, only to be used if the exam cannot be set in any other way. Also make sure that the parties involved with the logistics of education are informed as to which tests are proctored when. The account managers of the (former) faculties will be relied on in this respect.

This is important, so that the Exam Organization knows which tests are proctored at what time, enabling them to offer support to students during these exams. In other cases they are not able to provide support, whereas students may well turn to them with questions, since that avenue is indicated in the student manual and on the proctoring website.

Number of students and duration of the exam

There are no technical restrictions to the number of students who can simultaneously take a proctored exam (or various proctored exams). Nor are there any technical restrictions, practically speaking, to the duration of the exam, which is 8 hours at most.

However, there are other restrictions with regard to capacity and exam duration. Support from the supplier and from the HU can only be provided to a limited number of students (approx. 420) that all sit one or more proctored exams at the same time. Because this was not taken into account at the time the exams were planned centrally, in some cases it may be necessary to change the timing of the exam.

Although an exam for the Proctorio software could in principle take 8 hours, this is not desirable because of the necessity of a student going to the toilet at some point, for example. For that reason, the advice is to schedule a single session of one student for a maximum of 90 minutes (plus 30 minutes of extra time for those students who are entitled to this facility). If the exam is going to take longer, you are advised to either accept this problem in consultation with the students or to divide the exam into two parts.

Informing students

Make sure that students are informed **in full** and **in good time** in advance. For example, if they are allowed to use certain tools during the exam (or quite the opposite), make sure they are aware of this in advance. Do this well in advance (no later than 1 week before the exam session but preferably earlier). The same applies to certain measures taken to limit cheating, for example if the settings in TestVision are such that students can only go to the next questions and cannot go back to previous ones. Additionally, it is important that students are given enough time to prepare for the privacy aspects of proctoring and that any concerns on their part are addressed.

Clear communication with students is not only important for students in preparing themselves. This is also important in the introductory text of the exam in TestVision as to what the student will see just before he or she starts the exam. Part of this can be that you make sure the link to the proctoring manual for students can be found in the instruction text of the exam. It also helps if it is indicated that the students can go back to the instruction text after they have clicked on 'Start'.

Both general information and the student manual can be found here:

<https://husite.nl/digitalehu2/afstandsonderwijs/online-proctoring/>

Check list and practice tests

Work your way through the check list to see if everything is ready for your TestVision test. It can also be found with the above link.

Each time the student starts with a proctored TestVision exam, the HU pays for this. This is the moment after the student has completed the pre-checks for the exam and has actually clicked on the 'Start' button.

We urge you to offer students a dummy exam so they can practise. However, in view of the above, take precautions. For example, limit the number of times a student can do the dummy exam.

What does proctoring mean for students?

Preparation

In order to sit an exam with Proctorio, the student must use Chrome as a browser and install the Proctorio plug-in. Subsequently, students will log on as they always log on to TestVision (with their student email address and their own password) and start the exam. If they use another browser or they have not installed the plug-in, they will receive messages to that effect. If Proctorio has been set for the exam, students will see [proctor] in front of the exam name in the overview of exams.

If the student cannot take the exam at home because the student does not have the correct hardware or fast broadband connection or cannot find a quiet space or because the student for some reason objects to taking the exam, then there is a way for the student to make this known. For extreme cases, there is a very restricted number of physical locations available within the HU where a student can take the exam using a HU device. This exam will still be proctored.

During the exam, the student can use extra time (if this is registered in OSIRIS) and ClaroRead (if the student has downloaded the software onto his or her computer). Other facilities must be reviewed per situation.

During the exam

When the student starts the exam, he or she will be directed to the Proctorio start screen. For example, this will show which data will be collected. Then the student will start the 'exam pre-checks', the aim of which is to establish that the computer meets all requirements. Subsequently, the student confirms his or her identity and starts the exam. At that moment, the student automatically returns to TestVision and takes the test as per usual. His or her time does not start until the pre-checks have been completed. When closing the exam, the student returns to the log-in page or a default screen in Proctorio.

During the exam, students will see a tiny pop-up screen where they can see their own camera picture, where tools and resources (if any) are available and where they can get help from Proctorio (through a chat feature) in the event that they encounter technical problems.

How do I go to the stored data in Proctorio after the exam?

Prevent data leaks

Be aware of the way you handle the data that can be found in Proctorio. These are recordings of somebody and his or her private surroundings. Do not just forward data from Proctorio to somebody else and do not just allow someone else to watch while you are working in Proctorio.

A data leak is a breach of security which leads to the destruction, loss, modification, unauthorized disclosure or unauthorized access to transferred, stored or otherwise processed personal data. It is irrelevant in this context whether or not there was intent. A data leak is therefore not necessarily a hack. Every data leak must be reported to the Data Protection Authority within 72 hours after detection. The Privacy Desk and the Data Protection Officer will see to this. More information about the HU privacy policy and a data leak can be found on the following page: <https://askhu.sharepoint.hu.nl/informatie-items/Paginas/Privacy-en-security-overzichtspagina.aspx>

Proctorio Grade book

The recordings are made with Proctorio, so in order to see these you have to use Chrome as your browser and download the Proctorio plug-in. How you can do this is described in Appendix 2.

1. Go to TestVision for the results of the relevant exam.
2. When you've chosen a candidate that took the exam, right click the button [Review].
3. Click on the [Proctoring] button in the bottom right corner. This will take you to an overview of all recordings made of this exam session in Proctorio. This will be registered in the history of the exam session as 'Proctor Review Started'
4. Now you will be in the Proctorio environment, referred to as the grade book, here you can find information about the exam session as a whole and view the data of specific exam sessions of specific students.

For a clear overview of how the grade book works, you can watch the following video clips:

- <https://www.youtube.com/watch?v=b2BlbatkTyY>
- <https://www.youtube.com/watch?v=OG1jwAugTOs&feature=youtu.be>
- <https://www.youtube.com/watch?v=92MXs6YuReE&feature=youtu.be>

A student's data are not available immediately after his or her exam, this will take a little while but it won't be hours either. A month after the exam, the data will be automatically deleted.

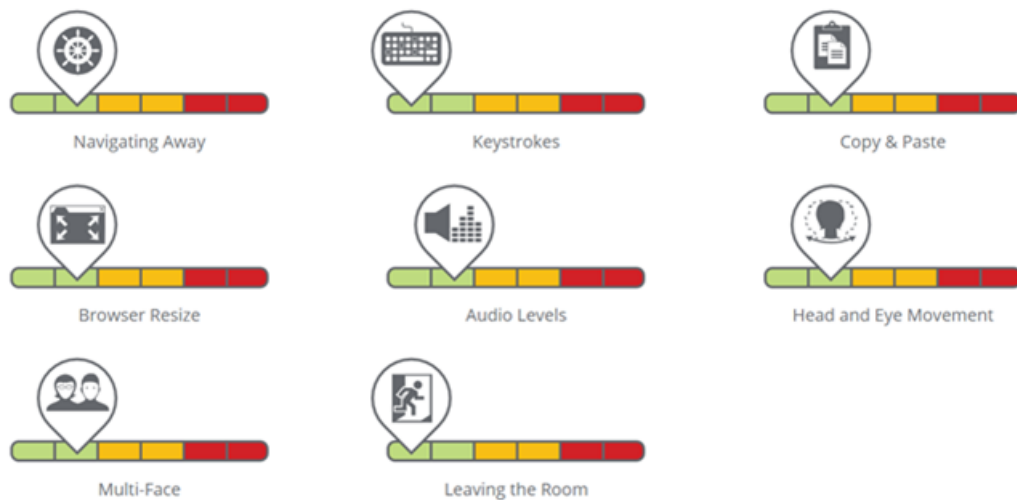
Previously, it said here that with exceptions, requests may be submitted for data to be retained longer, however this is not correct. If appeal proceedings have started, the data will have to be kept in the form of reports (see below), the Proctorio data themselves will still be deleted after one month (which also means the possibility to create the reports is taken away).

Suspicion percentages

As indicated earlier, the importance or weight attached by the system to various categories of possible irregularities can be tweaked after the exam. Automatically, a percentage is specified with each student reflecting how suspect the student's behaviour is. It looks like this:

41%	●
34%	●
27%	●
19%	●

If the settings of the categories are adjusted, then this percentage changes for all students. The weight of the categories can be adjusted in the 'Proctorio Settings' tab. You will find the following there:



However, the percentage of students is not entirely determined by how the settings of the abovementioned categories are adjusted. The system also looks at the degree in which the behaviour of a student deviates from that of another student in the exam. Does the student type significantly more or less compared to the other student(s), does the student click significantly more or less, is there significantly more or less sound, etc.

After you have adjusted the setting of the categories according to your requirements, you can then assess whether there were any irregularities for those students who according to the system have a high suspicion percentage (who appear highly suspect). In addition to examining these potential outliers, it will be worth your while to also take a sample of a few other exam sessions. To do this, click on the first tab (the 'Proctorio Grade book' tab) for the relevant student. Then you navigate to these moments which the software has marked as 'suspect'. Play the video to watch these moments and make sure that the sound in the player is turned on.

Based on experience, you would have to look in particular at the top 20% of the students with regard to suspicion percentage. In principle, you will also only have to look at the marked fragments of the top 20%, not the entire exam. Each session you watch will take about 3 to 5 minutes per student.

How do I make reports based on the data in Proctorio?

Individually

Proctorio contains two features to make a report. The first feature is a report from the exam session of an individual student. To do this, click on the first tab (the 'Proctorio Grade book' tab) of the exam session for that student. Afterwards, right click on the bottom icon (Display PDF Export Options). This icon looks like this:



Here you can indicate what has to be included in the report. If you have done that, click on 'Generate PDF' to generate the report. If all options have been selected for generating the report, it will contain not only what the student has done and how high the suspicion rate is for his or her exam session, but also what the settings were under which the exam was administered and what the settings were on the basis of which the suspicion percentage was calculated. In addition to this, pictures will be added (both of the camera and of the screen) of moments at which suspect behaviour took place.

Only send the report of an individual student to the Examination Board if there is a suspicion of irregularity involving this student.

The exam session in general

Apart from a individual report, you can also create an overall report of the exam session. You can do this by going to the last tab at the top, the 'Export Options' tab. Just as in the case of the individual report, you can then specify which data must be incorporated into the report. Then click on 'Generate PDF' to generate the report.

If all options have been selected for generating the report, you will again be able to see under which settings the exam has been administered and again you can see what the settings were on the basis of which the suspicion percentage of the students was calculated. Subsequently, an overview will be displayed with the attempts of all students with their corresponding suspicion percentage. You can also see when exactly the students started and stopped.

Always send a report for the general exam session (with all information options selected) to the Examination Board after reviewing, even though there is no suspicion of irregularity.

Note: If a report is very big, then the PDF will only show part of the data. To get around this, you can select the option 'Infinite PDF' on the 'Display Options' tab. This effectively removes any limit to the size of the report.

Can I use Proctorio when students are reviewing the exam results?

Review can mean various things. There is a category of settings for the exam template called 'Zichtbaar direct na toets' (Visible immediately after exam). If this is selected and a student is reviewing the exam results, the Proctorio software just continues to run (as it was on during the exam and it is only exited when the student clicks on 'Sluiten' ('Close')). If instead the option 'Zichtbaar bij latere inzage' (Visible at a later time) is used or an option for review was set at the time of the exam itself under the 'Resultaat' ('Result') tab, the software will not run, because this is a separate review moment and Proctorio is only started when an exam is started.

A disadvantage of the option 'Zichtbaar direct na toets' (Visible immediately after exam) is that if you set this, one student may finish the exam while another student is still working on it and if this option is selected, the correct answers will be visible to the person who is reviewing the exam results, who may then pass the correct answers on to others. The advantage, however, is that the Proctorio software is still running, so this would in all likelihood be recorded.

One alternative would be to use the option 'Zichtbaar bij latere inzage' (Visible at a later time) after all or an option for review set at the time of the exam itself under the 'Resultaat' ('Result') tab, and then use another method (for example Microsoft Teams) to monitor the students. How practical this is, obviously depends on the size of the student group and the availability of lecturers.

Other questions

If you want more information, for example about TestVision or about remote testing, a few tools and resources are listed below.

More information about proctoring in general can be found here:

<https://husite.nl/digitalehu2/afstandsonderwijs/online-proctoring/>

More information about TestVision in general can be found here:

<https://husite.nl/digitalehu2/digitale-leeromgeving-dlo/testvision/#support>

A specific FAQ for the use of TestVision in remote testing can be found here:

<https://husite.nl/digitalehu2/wp-content/uploads/sites/244/2020/04/F.A.Q.-thuis-toetsen-Testvision-versie-02-04-1.pdf>

If you like to know more about using TestVision to limit cheating, you can use this link:

<https://husite.nl/digitalehu2/wp-content/uploads/sites/244/2020/05/Tip-en-tricks-fraude-TestVision.pdf>

If you have a problem with TestVision or with the proctoring software from Proctorio and you cannot find a solution, we recommend that you first consult the organizers of your degree programme or institute. Each institute has superusers who are specialized in the use of digital exam applications. If you are still stuck, you can always send an email to helpdesk@hu.nl

Also keep an eye on the <https://husite.nl/digitalehu2/> website and the Microsoft Teams team HU-community Online Onderwijs & Onderzoek (Education & Research) for experiences of other users, news, meetings and tips.

Appendix 1: Options in Proctorio

1. Storage options – Which data will be stored during the exam sat by a student
 - a. **Video** – The webcam images are saved.
 - b. **Audio** – The sounds are recorded via the microphone.
 - c. **Screen** – What the student sees on his or her screen is saved
 - d. **Internet traffic** – If the student opens a website in addition to the exam, the website address will be stored and a screenshot will be made of what the student sees on that website.
 - e. **Room** – If this option is used, Proctorio will ask the student to show his or her entire room if the software detects that the student displays a fair amount of abnormal behaviour (for example many head movements or a lot of noise in the room)

2. **Lockdown options** – Which features for students are restricted during the exam
 - a. **Mandatory full screen** – The screen of the exam will automatically be maximized, so that the student cannot do anything else during the exam.
 - b. **Only one monitor** – If extra monitors are detected, the student is required to disconnect these.
 - c. **Only links within the exam** – The student can only open new tabs in his or her browser by clicking on links within the TestVision exam.
 - d. **Close open tabs** – At the beginning of the exam, a student is required to close all tabs that are open in addition to the actual exam.
 - e. **Turn off printer** – This ensures that the student will not be able to print or take screenshots of the screen.
 - f. **Disable Clipboard** – This ensures that the student will not be able to cut and paste
 - g. **Block downloads** –
 - h. **Empty cache** – This will delete all data of the exam from the computer of the student after the exam.
 - i. **Disable right mouse button** – selecting this option means it will no longer be possible to use the right mouse button.
 - j. **Rule out restart** – The student has one go in completing his or her exam and cannot continue if the student stops at an intermediate point.

3. **Options for verification** – How to establish who somebody is and whether everything is working okay
 - a. **Video verification** – The visibility of the student will be checked on the basis of the amount of light - whether there is a good view of the student.
 - b. **Audio verification** – The sound levels will be checked (not too much noise), check that the sounds are recorded correctly.
 - c. **Desktop verification** –
 - d. **Identity check** – At the start of the exam, the student must show proof of ID.
 - e. **Signature check**
 - f. **Log in check**

4. **Tools** – what is a student allowed to use during the exam?
 - a. **Calculator** – The options are None, Standard or Scientific
 - b. **Whiteboard** – The options are accessible or not accessible

Appendix 2: Downloading Google Chrome and the Proctorio plug-in

Google Chrome

Downloading Google Chrome onto a HU computer is only possible via the software centre. In the bottom left corner of your screen, click on Search or on the magnifying glass icon. Type 'software center' and click on the link or icon when it appears. Click on Google Chrome and then click on 'Install'.

You can install Google Chrome on a non-HU computer with the following link:

<https://www.google.com/chrome/>

Proctorio Plug-in (on a Windows PC)

There are two ways to download the Proctorio plug-in. The easiest way is to go to the Proctorio website via one of the results of an exam session (as described in this manual). If you have not yet installed the plug-in at that point, you will be asked to install it using the link provided.

The other method is to navigate to the website for the plug-in yourself. See below:

<https://chrome.google.com/webstore/detail/proctorio/fpmapakogndmenjcfajifaaonnkpkei>

Proctorio Plug-in (on a Mac)

Installing the plug-in on a Mac is the same procedure as that for a Windows computer. However, if you want to take an exam with Proctorio as a candidate, you must follow one more step to activate Proctorio. You will have to go to Systeemvoorkeuren (System Preferences) and then under Privacy you must select the option to have your screen captured by Google Chrome. Google Chrome must then be exited and restarted. Only after you have done all of this will you be able to start a proctored TestVision exam as a candidate.