Teacher Manual

Simodont Courseware v4.22

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Nissin Dental Products Europe B.V.

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The Netherlands

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GENERAL INFORMATION

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Tips and Notifications

Tip: Identifies an important recommendation.

Note!: Identifies an important note or an instruction that must always be observed.

Abbreviations and naming used in this manual

Procedures:

BRG	Bridge
CAR	Cariology/Operative
CRW	Crown
DAN	Dental Anatomy
END	Endodontics
MAN	Manual Dexterity
PS	Patient Specific / Intra Oral Scan
IMP	Implantology
PER	Periodontics

Software Components

Simodont Courseware	The whole Simodont software package, Dental Trainer Application and Teacher Station Application together.

Supported procedures

Currently, the supported procedures are:

- Manual dexterity
- Cariology / operative
- Crown and Bridge
- Dental Anatomy
- Intra Oral Patient Scan / Patient Specific treatment (STL or PLY import)
- Access Cavity Preparation (Endodontics)
- Pedodontics
- Implantology
- Periodontics

For more information about the specifics per procedure, please refer also to the Content Catalog.

Other important documents

In this Teacher manual we may refer to other documents that are important:

- What is new in.... (software release highlights explained)
- Release Notes (overview of all features and bug fixes for a software release)
- Content Catalog (overview of available models, cases and instruments)

Service and support

For information about issues related to preparation, transport, storage, installation, operation, maintenance and repair that are beyond the scope of this document, please contact the nearest NISSIN facility. See the back cover of this document, or consult:

Company name	Nissin Dental Products Europe B.V.
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SYSTEM SETUP

SYSTEM SETUP

1.1. SERVER

Starting the Simodont Server

Dell PowerEdge T320 / T330 / T340

The server should be best left running at all times. In case you need to start the server then press the power button ⏻ on the front of the server (this button could be hidden behind the front panel).

Login/logout

Please, contact NISSIN for the login credentials for the server. The login credentials are not shared in this manual for security reasons.

Database backup and restore

A backup of all data is created at 11 pm local time each day. These backups are stored on the server in the folder “C:\backup”.

It is highly recommended to discuss and setup a backup procedure that copies the data to a secure environment within your institute. Please contact your IT department for information (policies and procedures) regarding data storage.

Please contact NISSIN in case a database restore is required.

1.2. TEACHER STATION

Starting the Teacher Station

The Teacher Station (TS) is a computer which is mainly used by staff, but in theory could be used by students as well. The TS gives access to the Courseware application, which is used to plan courses, design new cases, and evaluate student attempts.

Please, contact NISSIN for the login credentials of the TS. The login credentials are not shared in this manual for security reasons.

Starting the Simodont Courseware on the Teacher Station

Double click the shortcut on your desktop that links to the "Simodont Courseware".

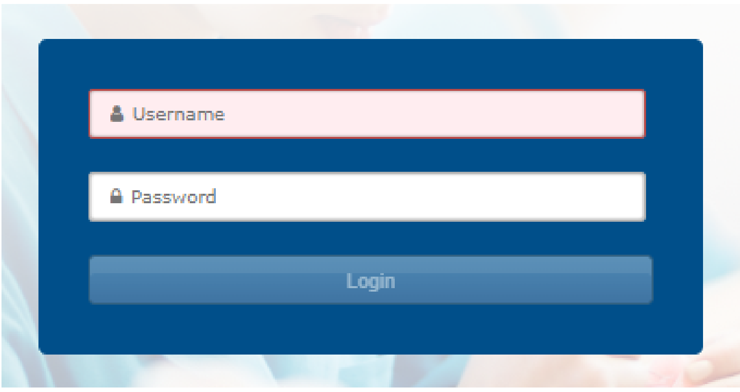
Login/logout

One or more user accounts are created for your staff members when the system is installed at your institute. In addition to that, one generic administrator account is always available.

The login credentials are not shared in this manual for security reasons. Passwords are provided during the introduction training. In case needed, please contact NISSIN Dental Products Europe B.V. for the login credentials of the administrator account and other staff members.

In order to login:

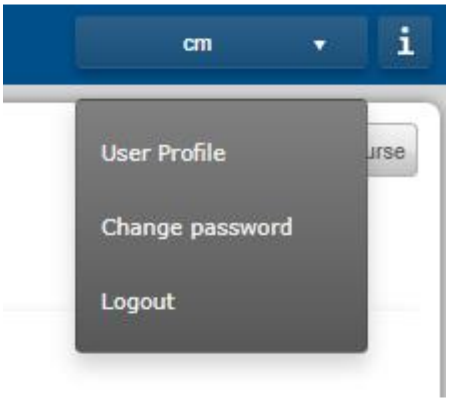
- ✓ Enter your username
- ✓ Enter your password
- ✓ Press the login button



Courseware login screen

In order to logout:

1. Go to the upper right corner, and click on your username
2. Click 'Logout'



Logout in upper right menu

Automatic logout

Users are automatically logged out from the Simodont Courseware Teacher Station application after 15 minutes, in case no activity is being registered. This is a safety measure to minimize the chance of access by unauthorized users when the system is left unattended. The value can be adjusted at the Settings page by a Simodont user with Administrator rights.

Generate error report

If there is a situation where the Simodont Courseware on the Teacher Station or Dental Trainer behave differently than expected, please contact you contact person as described in "Service and support".

It would be of benefit to the speed of error handling if you could generate an error report on the device where the unexpected behavior occurred. Do this as soon as possible after the occurrence of the unexpected behavior. Please let our support staff know if and when (date & time) you generated this report.

SIMODONT COURSEWARE

Teacher Station Application

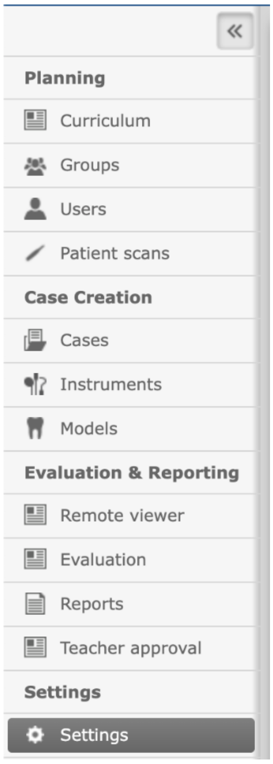
SIMODONT COURSEWARE – TEACHER STATION APPLICATION

The Courseware for staff members

The Courseware allows the administrators, teachers and student assistants to plan courses, design new cases, and evaluate student attempts.

The Courseware's main menu is found on the left side of the screen. The menu shows four main sections, each containing a number of pages. The available menu items depend on the user role of the logged in user. Please refer to chapter User role and rights to learn more about the permissions of each user.

Planning	Curriculum	Planning of courses
	Groups	Management of groups of users
	Users	Management of users
Case Creation	Cases	Creation and management of cases
	Instruments	Creation of instrument sets, and management of instruments
	Models	Creation and management of models
Evaluation and Reporting	Remote viewer	Remote real-time monitoring of student activity
	Evaluation	Evaluation of submitted work
	Reports	Creation of reports
	Teacher approval	Approving requests for starting exams multiple times
Settings	Settings	Institute specific system settings

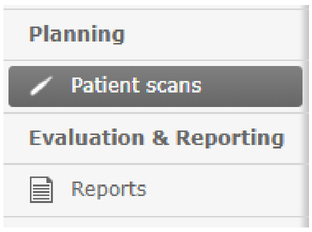


The Courseware menu for staff members

The Courseware for Students

The Courseware allows students to upload intra oral scans (STL and PLY) to their own users and download reports of their own preparations on intra oral scans. This is to reduce the workload for teachers.

For more information on the procedure for uploading scans performed by a student, please refer to chapter 6 Intra oral scan workflows.



Note! Student access to the Courseware is disabled by default on customer systems, for safety reasons. This is because the Courseware is only accessible through the Teacher Station. Allowing students to access the Teacher Station needs to be a well-considered decision.

As an alternative we could discuss the option of adding a separate Student Workstation to the Simodont's SimoNet, or Student user Windows account on the Teacher Station for the purpose of uploading scans by students.

In case you are interested in using this option, please contact Nissin Dental Products Europe BV. Together we will discuss the safety precautions that may be required. After agreeing on the implementation and usage of this feature we can unlock this functionality for you.

1. FIRST ACQUAINTANCE

If this is the first time you start working with the Simodont system, you might want to follow the instructions in this chapter. This is a short 'getting started' -introduction that will help you to find your way with the Simodont courseware.

We start with explaining the terminology used in this manual and in the courseware. After that we give you some step by step tasks that will walk you through the basic features of the software. Each task will refer you to a certain chapter in this manual, with specific instructions regarding the topic in concern.

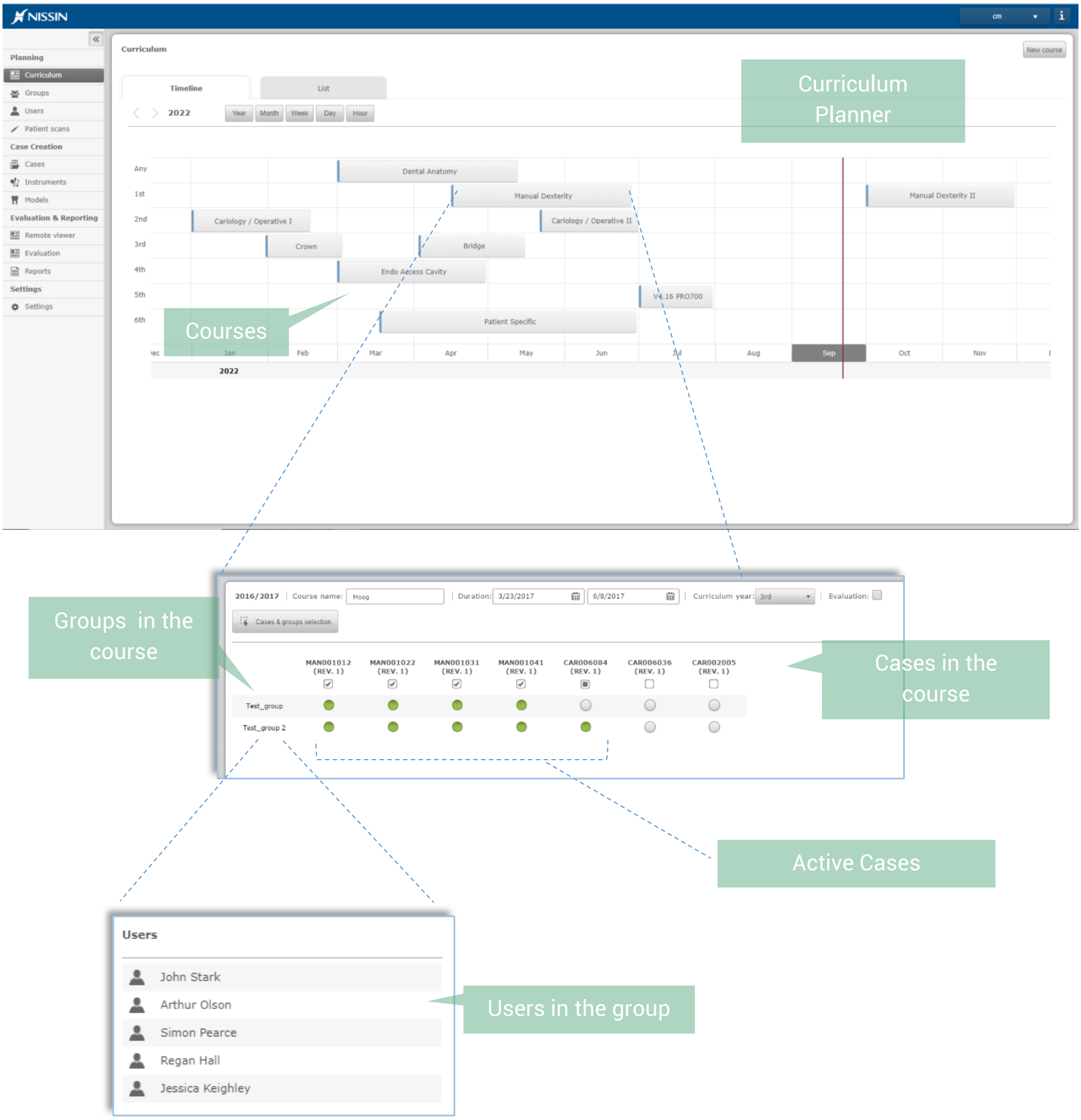
1. Terminology

The Simodont courseware uses the following terminology.

Curriculum	The Curriculum page is where you plan the Simodont courses for your students. The Curriculum page shows a calendar with the different courses for each academic year.
Courses	Courses are planned on the curriculum page. A course consists of at least one group and typically multiple cases.
Users	Users are all the individuals that interact with the Simodont system. Typically, these are the students, student-assistants, teachers, administrators. Different user types have a different level of interaction with the system, and thereby also have different privileges.
Groups	With a group we mean a group of users. Groups are needed to be able to plan a course.
Cases	Cases are the assignments within a course. A case is composed based on the user's preferences using different optional components like an introduction, a virtual patient, a treatment plan, a virtual model, virtual instruments, and assessment methods.
Models	With a model we mean the virtual visual model that represents a tooth or multiple teeth in a jaw, with or without a certain pathology.
Instruments	The instruments are the virtual instruments that represent the real rotary and hand instruments used to treat the patient/tooth.
Snapshots	A snapshot is the state of the model at a certain point in time. Snapshots can be reloaded into the Simodont to go back to retry a certain part of the treatment.
Predefined stages	The predefined stages can be seen as the sub-results of different steps in a treatment. By assessing these stages of the treatment, a teacher is able to see how a student progresses and where in the treatment there is room for improvement.

The schematic overview on the next page will show how some of the above-mentioned items relate to each other.

Schematic overview of relationship between curriculum planner, courses, groups, users and cases



Basic steps in the Simodont courseware

In order to get familiar with the Simodont courseware you can use the following steps as a guideline:

In the Courseware:

Step 1:	Adding a new user.	Add two new users.	Follow the instructions in chapter 3.2 Users - Creating and importing users - Method A: adding a single user.
Step 2:	Adding the users to a new group	Add the two new users to a new group.	Follow the instructions in chapter 3.2 Users - Adding users to a group - Method B: Adding multiple users to a group.
Step 3:	Creating a course	Create a course with one manual dexterity case, one cariology case and one crown case. Make sure to select the group you just created in step 2. Make sure the course is active today (start day in the past and end date in the future) Make sure to set the "Evaluate result" option to "Yes".	Follow the instructions in chapter 3.1 Curriculum (Course planner) – Creating a new course.
On the Simodont:			
Step 4:	Login on the Simodont	Login with the user credentials of one of the users you just created.	
Step 5	Trying cases and submitting attempts	Select a case and walk through the pages of the case. Notice the different options within each case. For the cariology case, make sure to prep the tooth and submit your work.	
In the Courseware:			
Step 6	Remote Viewer	While leaving the Simodont(s) on, go to the Remote Viewer page. Play with the different settings of this page.	Read the instructions in chapter 4.3 Reporting.
Step 7	Evaluation of submitted work	Go to the Evaluation page and find your submitted work. Open the attempt and review your work.	Read the instructions in chapter 4.2 Evaluation.
Step 8	Reporting	Make a group report.	Follow the instructions in 4.3 Reporting – Creating a group report.

Customizing the instrument sets

In the Courseware:

Step 9	Customizing the instrument sets	Customize the predefined instrument sets according to your preferences.	Follow the instructions in chapter 5.3 Instruments and instrument sets – Customizing the predefined instrument sets.

On the Simodont:

Step 10	Trying cases	Go back to the Simodont, and see the effect of your changes.	

Creating your own case

After you have become comfortable with the basic steps it is time to create your own case.

In the Courseware:

Step 11	Creating a new case	Create a new case based on your own preferences. When you are done make sure to save and publish	Read the instructions in chapter 5.1 Cases
Step 12	Add your case to the course	Edit the course you created in step 3 and add the new case to it. Make sure to enable the assignment (green dot).	Read the instructions in chapter 2.1 Curriculum (Course planner) – Editing an existing course.

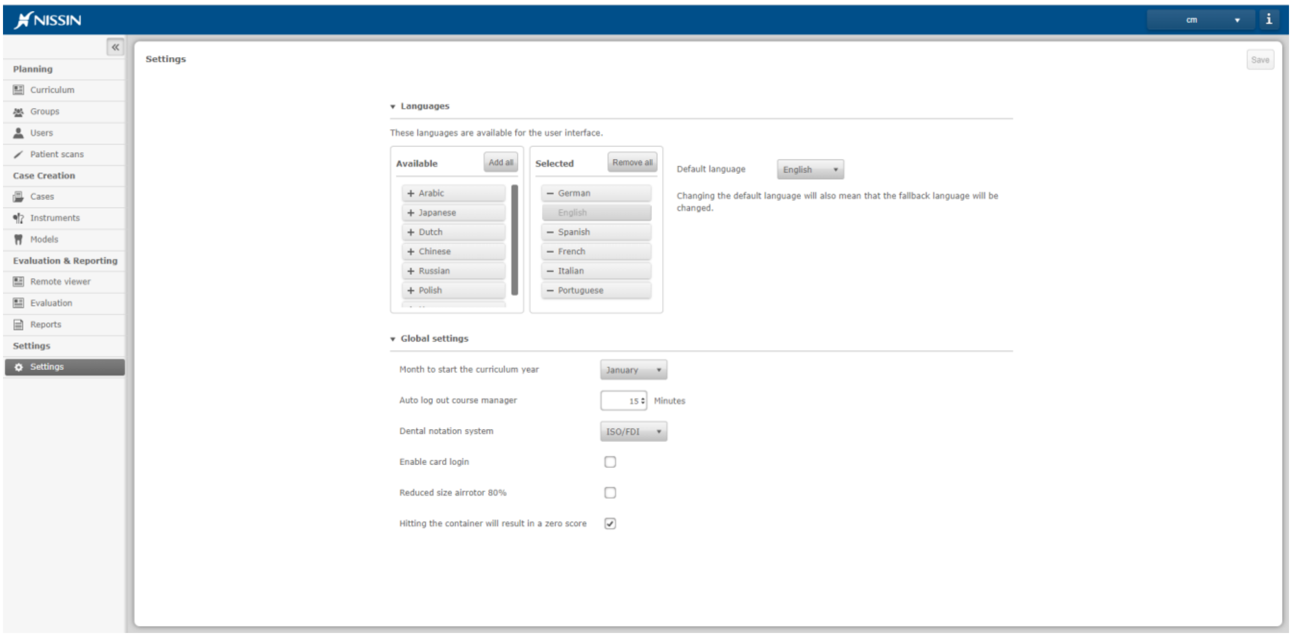
On the Simodont:

Step 13	Trying cases	Go back to the Simodont, and see the effect of your changes	

2. SYSTEM SETTINGS

2.1 Global system settings

Simodont's institute specific system settings can be changed on the Settings page in the Courseware. These settings can only be changed by a Simodont user with Administrator rights.



These settings are global system settings, meaning that these are effective on your entire fleet of Simodonts.

Note! Please note that any changes to the settings take effect only after restarting the Simodont and/or Courseware, depending on which settings have been changed.

The available settings that can be set are:

Languages

Available languages

The Simodont supports up to 13 different languages. The available languages are Arabic, Chinese, Dutch, English, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian and Spanish.

Selected languages

By clicking on a language from the list of available languages you can select a language to be actually available on the Simodont. This way you can make your own short list of supported languages for your system.

Default language

One language needs to be selected as the default language. The default language is the initially chosen language for the user interface. Thereafter, every user can set his personal preference for the user interface language in the user menu on the Simodont,

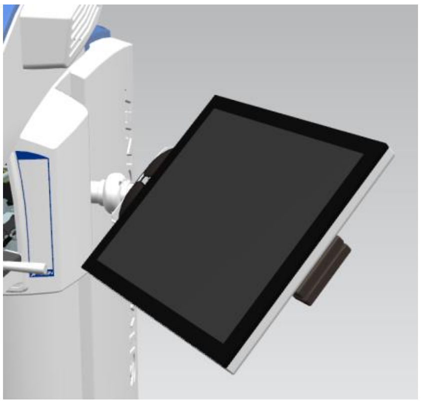
Month to start the curriculum year:	Here you can select where the calendar in the Curriculum planner starts. The system automatically shows 12 months, starting from the selected start month.
Auto log out in Courseware	Here you can set the automatic log out timer. This determines after how many minutes of inactivity the Courseware software will automatically log you out. The default setting is 15 minutes. The maximum is 900 minutes.
Dental notation system	Here you can select which dental notation system will be used for your institute. The options are ISO/FDI and Universal.
Enable card login	Here you can activate the usage of card login. When activating the card login users will be requested to register a card after logging in for the first time on the Simodont. For more information, please refer to the chapter below this table 'Card login options'.
Reduced size airrotor 80%	Here you can activate the reduced size airrotor. The size of the smaller airrotor is 80% of the original one and is useful when you find the default size too large for your applications. Please note that this is a global setting. Choosing the smaller size airrotor will make it smaller for all procedures and all cases.
Hitting the container will result in a zero score	In previous releases the effect of touching the container in manual dexterity cases MAN001001 to MAN001055 was hard coded in the software. For these cases, the final score goes to zero whenever the student hits the container. When this behavior is not desired, please turn off this option. With this option disabled, the effect of touching the container on the score is determined by the score formula.
External authentication settings	Here you can activate the integration of the Simodont system with your institutes' user authentication system. This gives the school more ownership and security on who is accessing which system. For more information, please refer to the chapter below this table 'External authentication settings'.

2.2 Card login options

In order to login on the Simodont the user needs to supply a username and a password. It is also possible to use a card login instead of entering a username and password. There are two variants of the card reader:

- A **Swipe card** reader (Reads cards with a magnetic strip):
  When the Simodont is in the login screen, the user swipes the card with the magnetic strip in the card reader (mounted on the right side of the touch screen).
  Subsequently, the username and password are automatically entered, and the user is logged in.

- An **RFID card** reader (Reads cards with a High Frequency (13.56 MHz) Radio Frequency transmitter):
  The user brings the RFID card in the proximity of the RFID card reader which is located above the Standby/ON switch at the left side of the Simodont. Subsequently, the username and password are automatically entered, and the user is logged in.



Swipe card reader mounted behind the touch screen, on the right side

RFID card reader located on the left side, above the Standby/ON switch

Note! Starting September 2021, the Simodont is **standardly supplied with an RFID card reader.** In case you are ordering a new batch of Simodonts, and your first batch has swipe card readers installed, a request for a swipe card readers for the new batch can be done during the ordering process of new Simodonts. **Please consult your local Simodont dealer** for more information.

Benefits of the card login option

- **Speed**:
  Swiping or presenting a card is much quicker than typing a username and a password.

- **Discretion**:
  When a student or teacher logs into the Simodont, they need to do it with the on-screen keyboard that is presented on the touch screen. They need to supply the username and the password. Since the touch screen is quite large, it is very difficult to do this discretely. Someone behind the user's back can easily see the username and password he/she is typing in.
  For better security during the identification process, an ID card can be used. For this purpose, students and teachers can keep using their own institute ID card to identify themselves in front of the Simodont.

- Teachers can **unlock features/screens** on the Simodont:
  During an exam on the Simodont, some options that are allowed to be used during the learning phase can be disabled. One of these options is loading a snapshot. When Teacher Authentication is

enabled for an exam case, the teacher's ID card can be used to easily and discretely authorize the loading of a snapshot if needed.

Enabling the Card login option

Any Simodont user with Administrator rights can enable the card login option on the Simodont.

1. In the Courseware, go to the Settings page
2. Place a check mark for 'Enable card login'.
3. Restart the Simodonts
4. At login, each user with the role Teacher, Student or Student assistant will now be asked to register a card by presenting it to the Simodont.

New card registration

Registration of new cards does not require any actions from the school staff. The registration is automatically done the first time a new card is presented to the card reader at login time on the Simodont.

1. In the Courseware, make sure the users are created according to paragraph 'Creating and importing users'
2. On the Simodont, the user logs in with his/her credentials – by supplying the username and the password.
3. After login, the user is asked to present his/her card to the card reader.
   In the case of a magnetic strip card, by swiping the card.
   In the case of an RFID card, by bringing the RFID card in the proximity of the RFID card reader – on the left side of the Simodont above the Standby/ON button.
4. From this moment on the card is registered and the user is able to login using his/her card.

Resetting a card (re-registration)

Once a card is assigned to a specific user, the user cannot register another card. In case a user needs to register a new card (lost or defect card), the user must ask the teacher to reset the card registration.

To reset the card for a user:

1. In the Courseware, go to the Users page.
2. Find the user in concern and select it.
3. Click the 'Reset RFID card' option in user details pane. Note that this button is also valid when using swipe cards.

   The user can now register a new card via the Simodont by following steps (2) and (3) in the section "New card registration" here above.

2.3 External authentication settings

The External authentication functionality is introduced to give the institutes the option to integrate the Simodont authentication with their institute's authentication system. Implementing this functionality gives the institute more ownership and security regarding who is accessing which system.

Enabling External authentication does not fully disable the traditional login. However, a user may only use one login method at a time. There is an exception to this rule regarding the feature that allows a user with the "Teacher" role to approve loading a snapshot using RFID card on the Simodont.

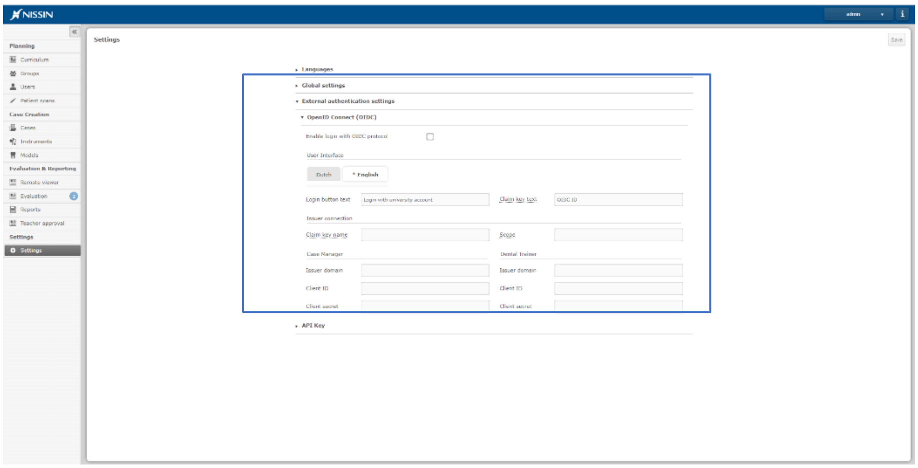
Note! If you are interested in activating this functionality, please contact Nissin support. Implementation requires a cooperative approach with Nissin.

Activate settings

After all preparations have been executed in cooperation with Nissin support, the institute should configure the settings on the Settings page in the Courseware. These settings can only be changed by a Simodont user with Administrator rights. These settings are global system settings, meaning that these are effective on your entire fleet of Simodont(s).

The first step is to activate the settings:

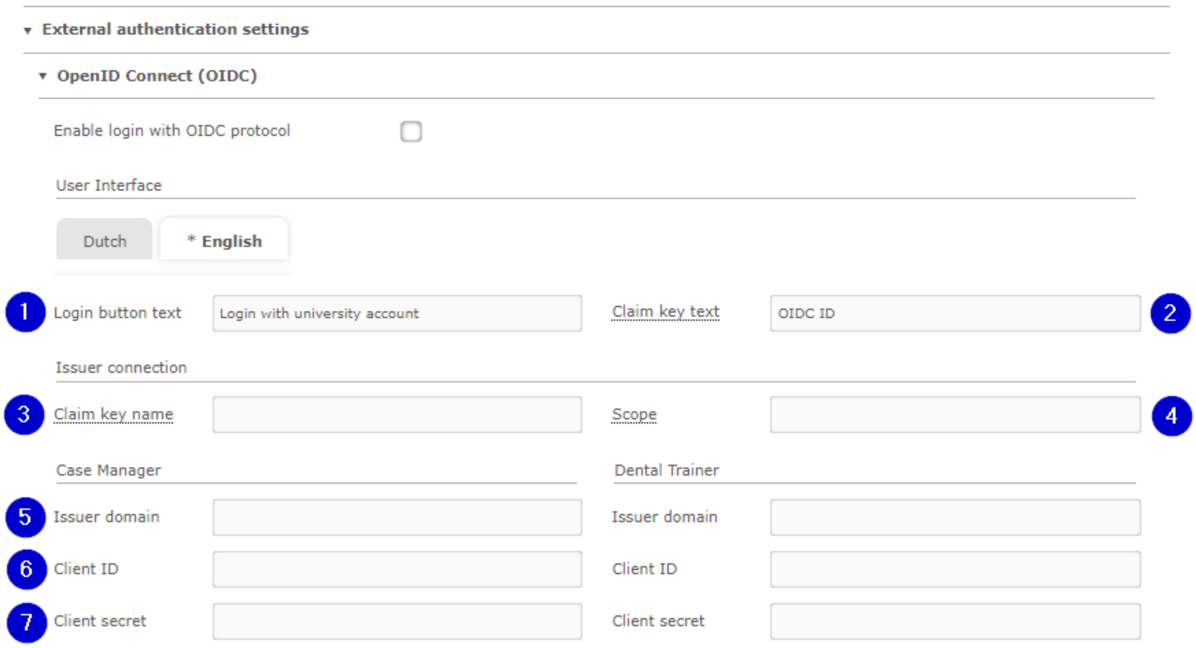
1. Log in to the Case Manager with an Administrator account
2. Navigate to the Settings page
3. Locate the external authentication settings section
4. Enable the checkbox
5. Configuration of settings with assistance from your IT department (details in next paragraphs)
6. Save settings
7. Restart Courseware and Simodont(s) to activate the settings



Location of Authentication settings

Configuration of settings

The second step is filling in the configuration. External authentication settings are divided into four sections: User Interface, Issuer connection, Teacher Station and Dental Trainer. The details will be described below.



Authentication settings

User Interface

This section presents configurable text to be shown to the user. These texts vary between institutes. Therefore, you can customize which text better matches your institute.

(1) Login button text: There are two authentication methods: traditional authentication (local on Simodont) and your institute's authentication. The text in this field is shown in the button that redirects the user to your institute's authentication system. Only the text in the field under the default language will be shown, since the login page is not aware of the users preferred language.

(2) Claim key text: There is an ID used to map the user in the Courseware with the user in your institute. This ID is shown in the user details page. This text is shown as the label for the ID.

Issuer connection

This section presents the necessary fields to use the OpenID Connect protocol.

(3) Claim key name: This field should contain the claim key name as returned by the OpenID Provider when requesting the claims associated with a user.

(4) Scope: This field should contain the OpenID Connect Scope that must be requested to the OpenID Provider to retrieve the claim fill in "ID key name"

Teacher Station / Dental Trainer

This section contains the Authentication details for the Teacher Station and Dental Trainer. The same information can be put on both sides, but it also allows for a differentiation for the two Simodont sources.

(5) Issuer domain:	This field should contain the absolute URL of the Authentication Provider
(6) Client ID:	This field should contain the OAuth 2.0 Client Identifier valid at the Authorization Server.
(7) Client secret:	This field should contain the OAuth 2.0 Client secret valid at the Authorization Server, associated with the Client ID.

Tip: You can save a draft version of the External authentication settings by disabling the section before saving. The content of the fields is saved, but since the section is not active no validation of the values will take place.

2.4 User Profile Settings

The user profile settings are found (like on the Simodont) when clicking on the username, in the right upper corner, in the header of the courseware. From here it is possible to access the Change password menu and the User Profile menu.

In the User Profile menu, it is possible to change the language for the user interface of the Simodont Courseware. The available languages shown in the list are dependent on the activated languages in the Global Systems Settings page (Chapter 2.1).

3. PLANNING

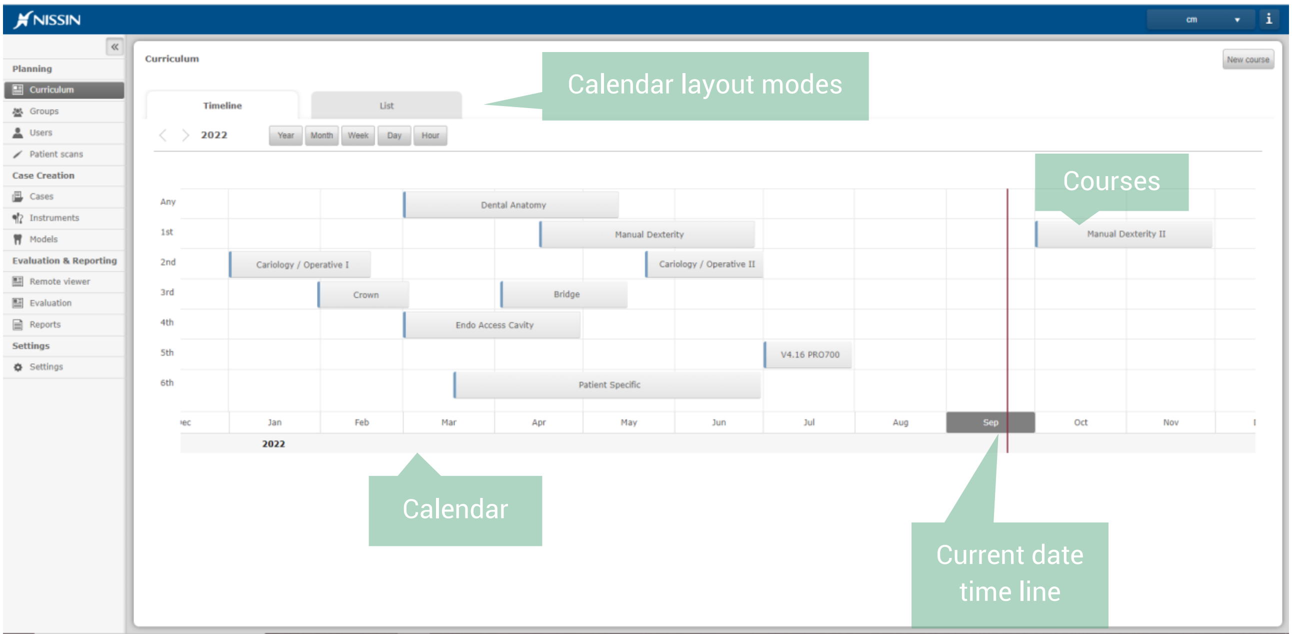
3.1. Curriculum (Course planner)

Simodont Courses are planned in the Course planner. The curriculum calendar gives an overview of all courses. This is also the place to create new courses.

The curriculum calendar

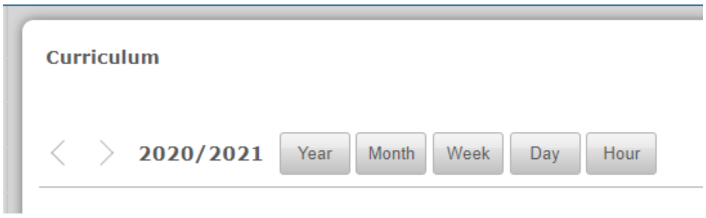
Timeline

The default view of the calendar is the 'year view' in the timeline mode with the start and end month as set in the settings page. The viewer options allow the teacher to zoom in and out at and thereby making it easier to get an overview of all courses.



The curriculum calendar

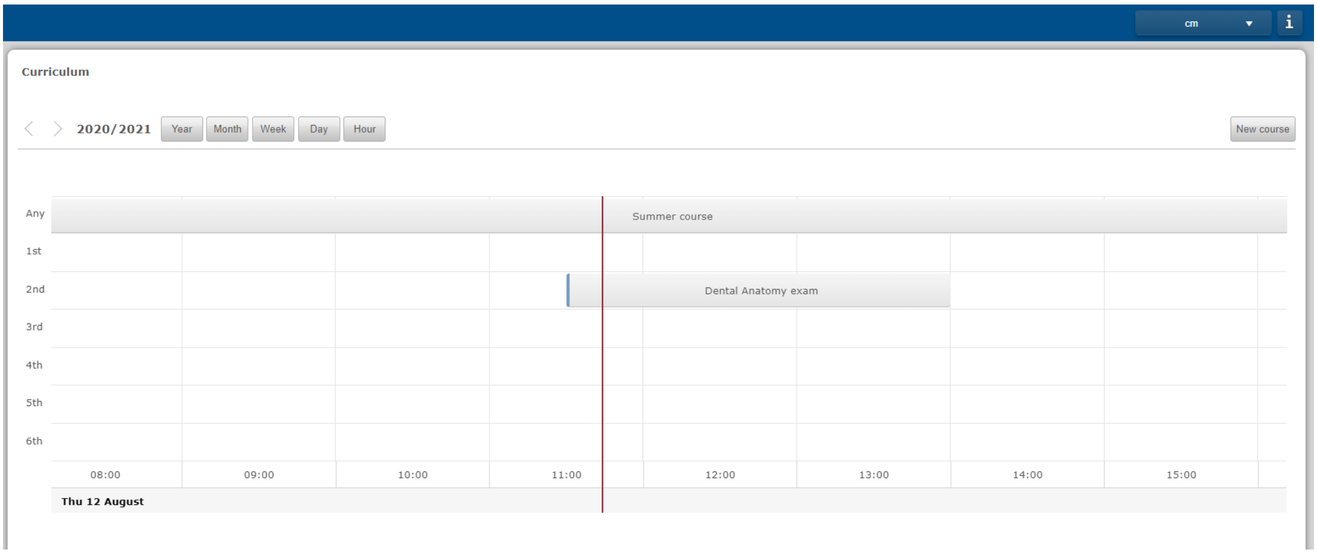
The Year, Month, Week, Day and Hour buttons are used to jump to the corresponding view in one click.



Calendar layout buttons

The left mouse button can be used to drag the calendar from left to right and vice versa. This is very useful if you quickly need to scroll through a certain period.

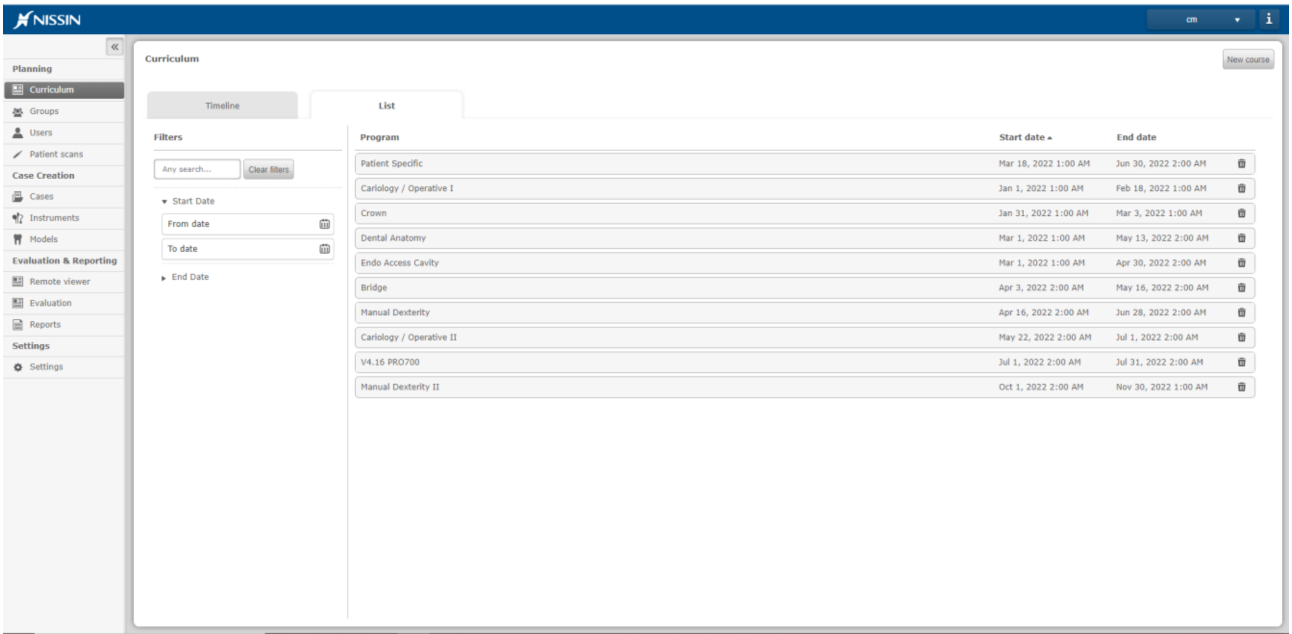
Zooming in and out on the calendar is possible using the mouse wheel while hovering above the calendar. This makes it possible to find any desired level of detail for the calendar. Zooming in to the level of hours makes it even possible to plan very short courses of, for example, one hour. This could be useful when planning examination courses that should only be accessible for a very short period of time.



List view

The list view provides a simplified view of all active courses, meaning the courses that have an end date in the future. If there are no active courses, it will show all courses from that year.

To find courses by name you can use the Search option. And to find courses in a certain time period, for example the past, it is possible to use the date filters.



Creating a new course

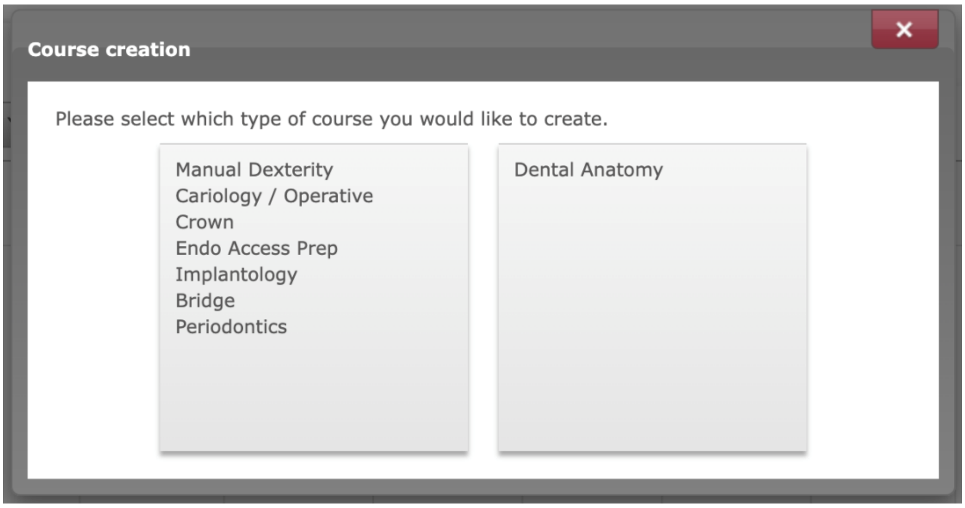
1. In the Courseware, go to the Curriculum page.
2. Click the 'New course' button in the upper right corner.

   Or, when you hover with the mouse above an empty slot in the calendar, you will see the following tip and you can double click there, to create a new course:

3. Select the type of course you would like to create:

   A) Manual Dexterity
   Cariology / Operative
   Crown
   Endo Access Prep
   Implantology
   Bridge
   Periodontics

   B) Dental Anatomy



After having chosen option (A) or (B), the course creator/editor opens up.

4. Start with filling in the course details.
   If you choose option (A) in step 2.1, you have all the fields described in the sub-section hereunder.
   If you choose option (B), you will have a very limited selection of the fields:
5. Click the [Cases & groups selection] button.
6. Select the cases you want to use in the course.
7. Click on the Groups tab and select the groups of users participating in this course.
8. Click [Save].
9. In the assignment matrix, enable/disable the cases as desired for this moment.
10. Click [Save].

Course details

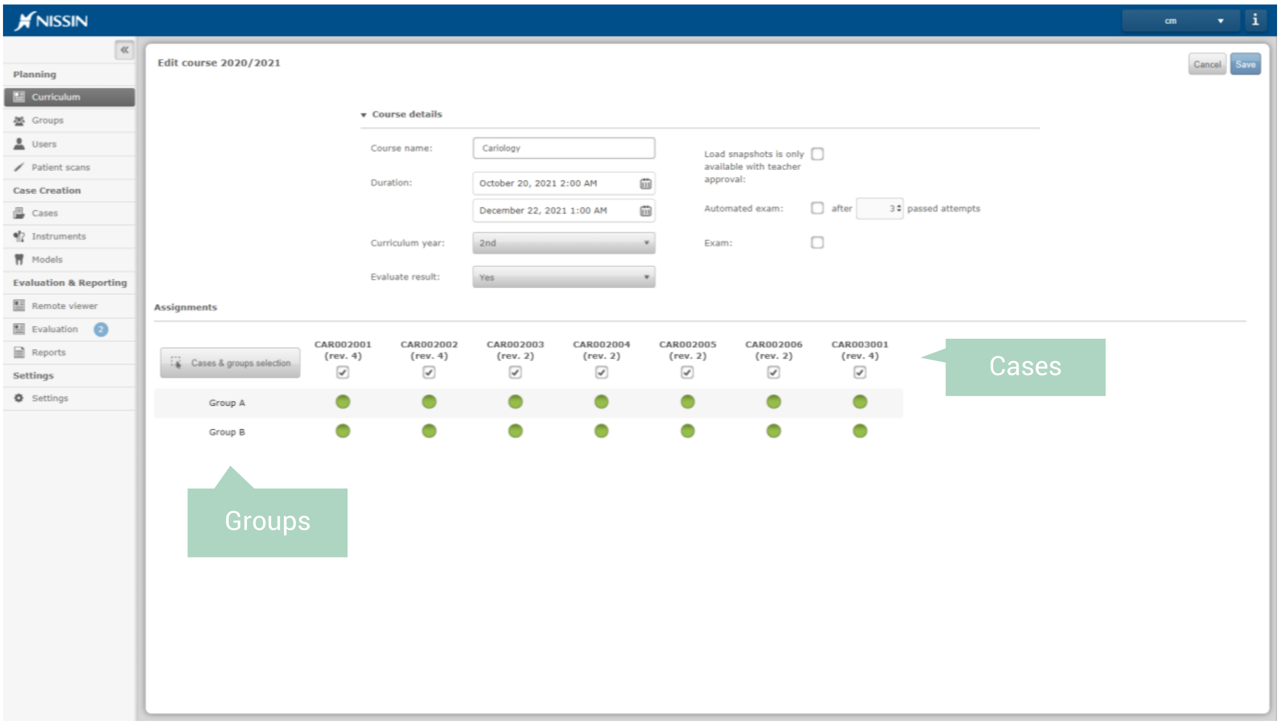
Fields that are not visible when option (B) was chosen in step (4) here above are depicted with a ***(not in DAN)*** text.

Course name:	Name of the course. This name is shown in the calendar.
Duration:	This is where you select the start and end date and time of the courses. Courses are only visible on the Simodont between the start and end date.
Curriculum year: **1st – 6th**	This selection solely determines how the course appears on the calendar. For example, if you select 2nd, then the course will appear in the row for the second year. It does NOT link to the year of users or groups.
Evaluate result: ***(Not in DAN)***	Enable this setting if you want to be able to assess all individual attempts from this course in the Evaluation environment. Please be aware that results are captured at all times, regardless of the state of this checkbox. It is possible to enable/disable this option while the course is running as it is only resulting in showing or hiding the results in the Evaluation environment.
Load snapshot with teacher approval: ***(Not in DAN)***	Enable this option if you want to allow students to reload snapshots of previous work, but only with teacher approval. This could be valuable during exam courses. When this option is enabled, the teacher will have to present his card to the Simodont in order to release the snapshot selected by the student. Note: In order for this to work, the usage for cards must be enabled on the system and the "load snapshot" option at case level must be enabled as well!
Automated exam: ***(Not in DAN)***	Enable this option if an automatic exam must be taken after a specific amount of passed attempts. This option is only allowed for manual dexterity cases that have treatment and segment statistics enabled. The automatic scoring is used to determine if the student has failed or passed the exam. If the student has failed the exam, he/she again needs to first pass the given amount of attempt before being able to take another exam. If the student has passed the exam, he/she is not able to start the case again. Note: On the Simodont a score is shown of how many attempts the student has failed or passed. This number includes the exams taken.
Exam:	By enabling the exam option in the course, the student cannot close the attempt by clicking [Stop case] or [Logout]. This way, students must [submit] their work. For a Dental Anatomy case running in the exam mode, the automatically generated questions that guide the student towards a correct answer are ignored. The student only sees the question of direct identification of the tooth number.
Cases and groups selection:	This opens the cases and groups selector. The selection of the cases will determine the columns of the matrix. The selection of the groups will

	determine the rows of the matrix. Multiple groups and cases can participate in the same course.
Assignment matrix:	Once the columns and the rows of the matrix are defined, you use the assignment matrix to determine which cases are visible for each of the groups. A green ball in the cell means this case is visible for this group.

The assignment matrix

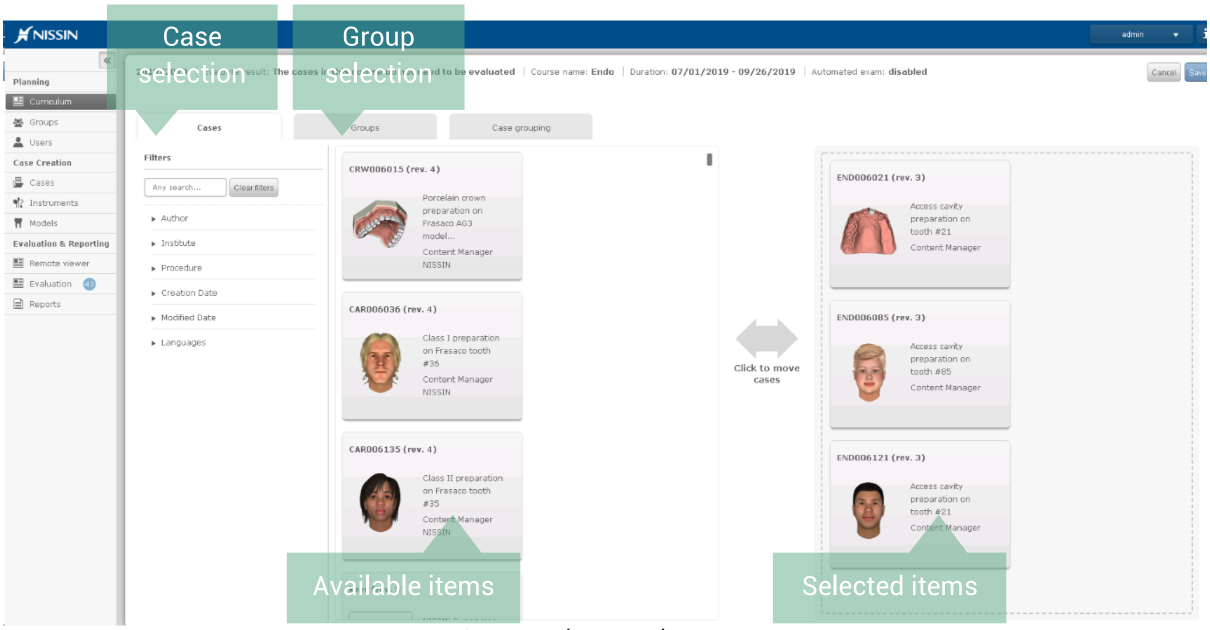
When double clicking on an existing course you will see the assignment matrix. In the assignment matrix you are able to enable /disable case assignments per group.



Assignment matrix

The Groups and cases selector

The selector for groups and cases is accessible via the [Cases & Group selection] button at the Assignment section and is used to compose a course. The available and selected items (both the groups and cases) are shown in the assignment matrix.



Groups and cases selector

Editing an existing course

1. Go to the Curriculum page.

1.1 In the Timeline view: Hover above an existing course in the calendar. Double click and the course creator/editor opens up.

1.2 In the List view: Click on the course you want to open and the course creator/editor opens up.

2. Change the course details as desired.
3. You can use the [Cases & Group selection] button to change the cases that are included in this course or change the groups that are enrolled on this course.
   Pay attention: When adding new cases to the course, don't forget to also mark these cases with a green ball, so that they will be visible for the intended group.
4. When finished with making the changes, click [Save].

Case grouping

Cases can be grouped together such that on the Simodont the student sees one tile containing a number of cases. This can be useful to create a better overview of the available courses for a student on the Simodont.

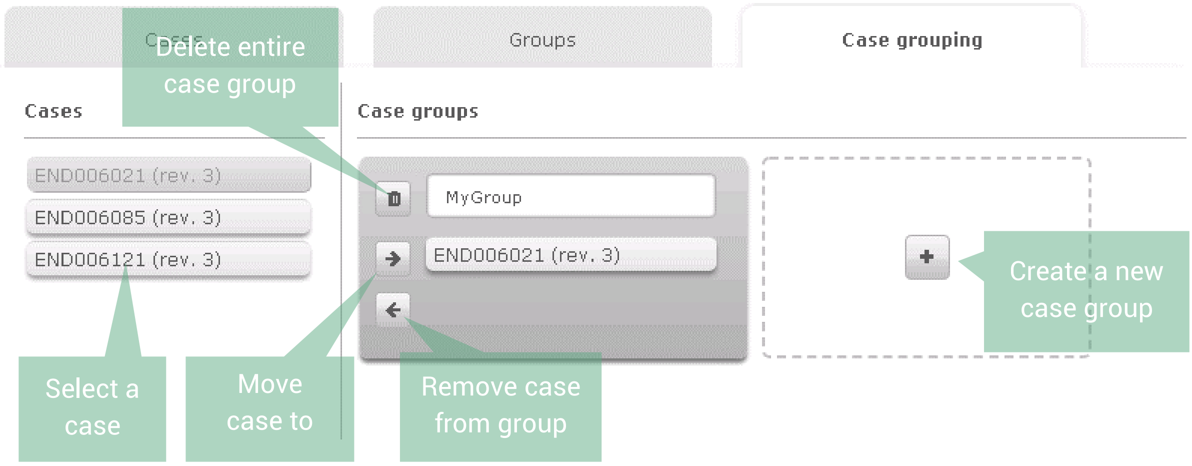
1. Add a new case group by clicking the + button
2. Enter a name for the case group
3. Select a case
4. Move it to the group by clicking the -> arrow

To remove a case from a group:

1. Select the case in the case group
2. Remove it from the group by clicking the <- arrow

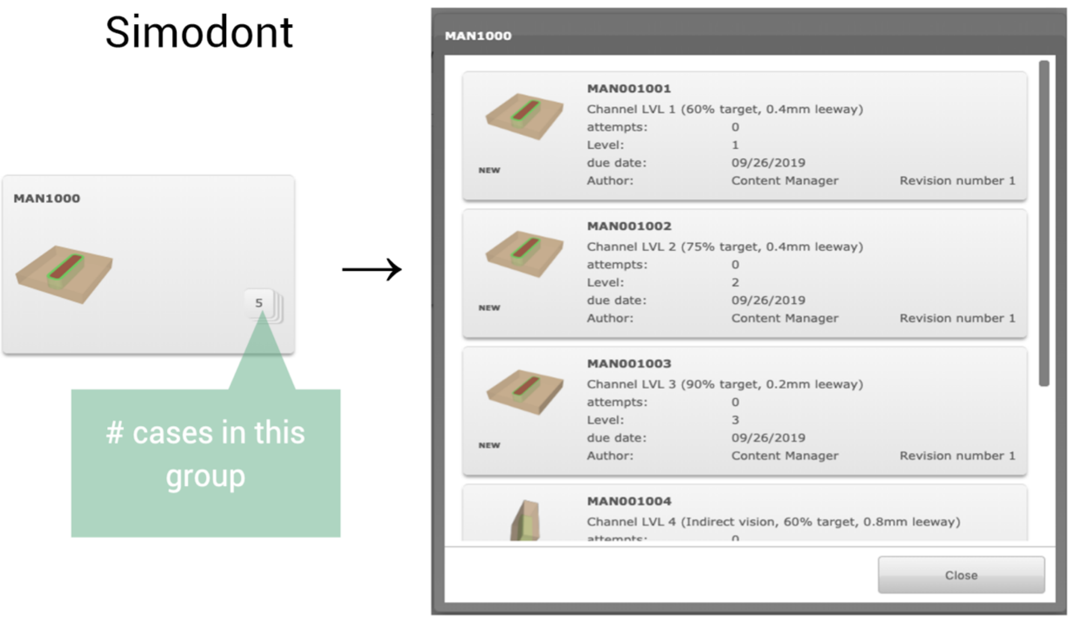
To remove a case group:

1. Select the case in the case group
2. Remove it from the group by clicking the recycle bin left of the group name



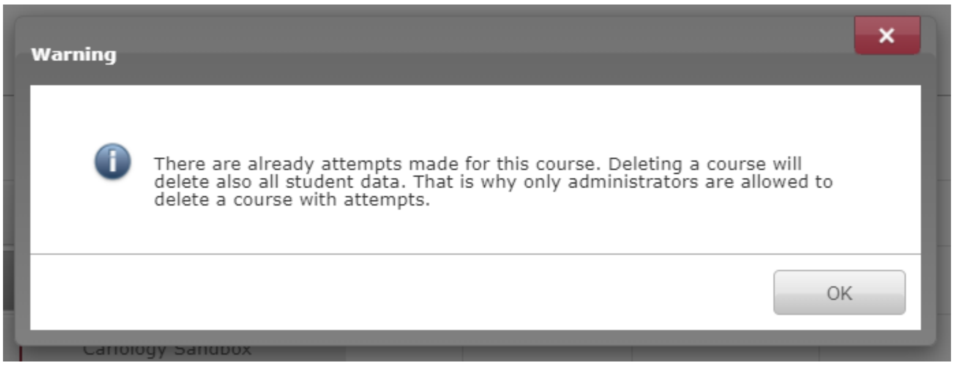
Case grouping in the Courseware

Grouped cases on the Simodont



Deleting a course

Please be aware that only Simodont users with Administrator rights can delete a course that already has student attempts. When a Simodont user with Teacher rights tries to delete a course that already has one or more attempt(s), he/she will get the following warning.



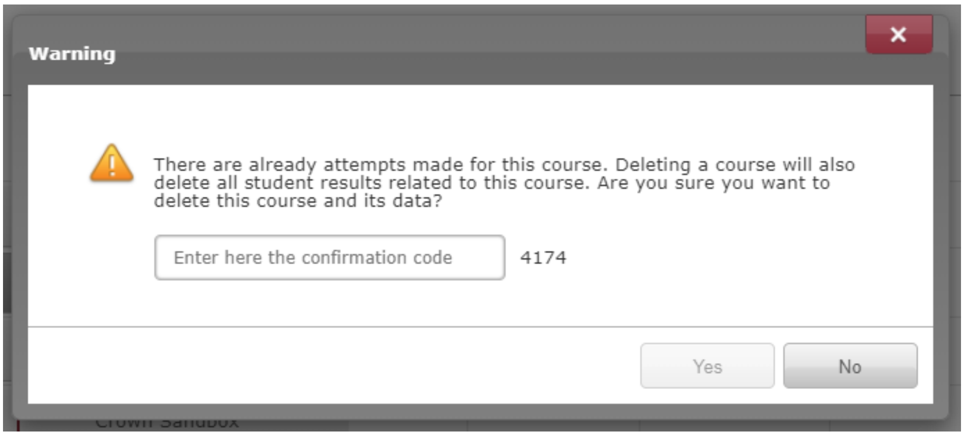
Pop up: Course with attempts can only be deleted by an Administrator

Note! Please be aware that when deleting a course as an Administrator all student results related to that particular course will also be deleted from the database. This action cannot be undone!

For Administrator users:

1. In the Courseware, go to the Curriculum page.
2. Click once on the course in the calendar view.
3. Press the recycle bin in the upper right corner of the course tile.
4. Enter the confirmation code that is presented in the warning and click yes.

The course is now deleted.



Course deletion warning

Removing a case assignment for a single user

Removing assignments for a single user is done by removing the user from a group. This means that all case assignments made for this group are removed for this user. Removing a single case assignment for a single user is not possible.

1. Go to the Groups page.
2. Select the group that the user is part of.
3. In the details pane, look for the user that you want to remove from the group.
4. Click the recycle bin.

Deleting a user from a group can only be done under the condition that this user does not have any case attempts for any of the cases.

Removing assignments for multiple users

Removing assignments for multiple users is done by removing a group from a course. This means that all case assignments for users within this group for a particular course will be removed.

1. Go to the Curriculum page.
2. Double click the course tile in the calendar.
3. Go to Cases and groups selection.
4. Go to the Groups tab.
5. In the right section, click the group to remove it from the course.

Deleting a group from a course can only be done under the condition that the users in the group do not have any case attempts for any of the cases.

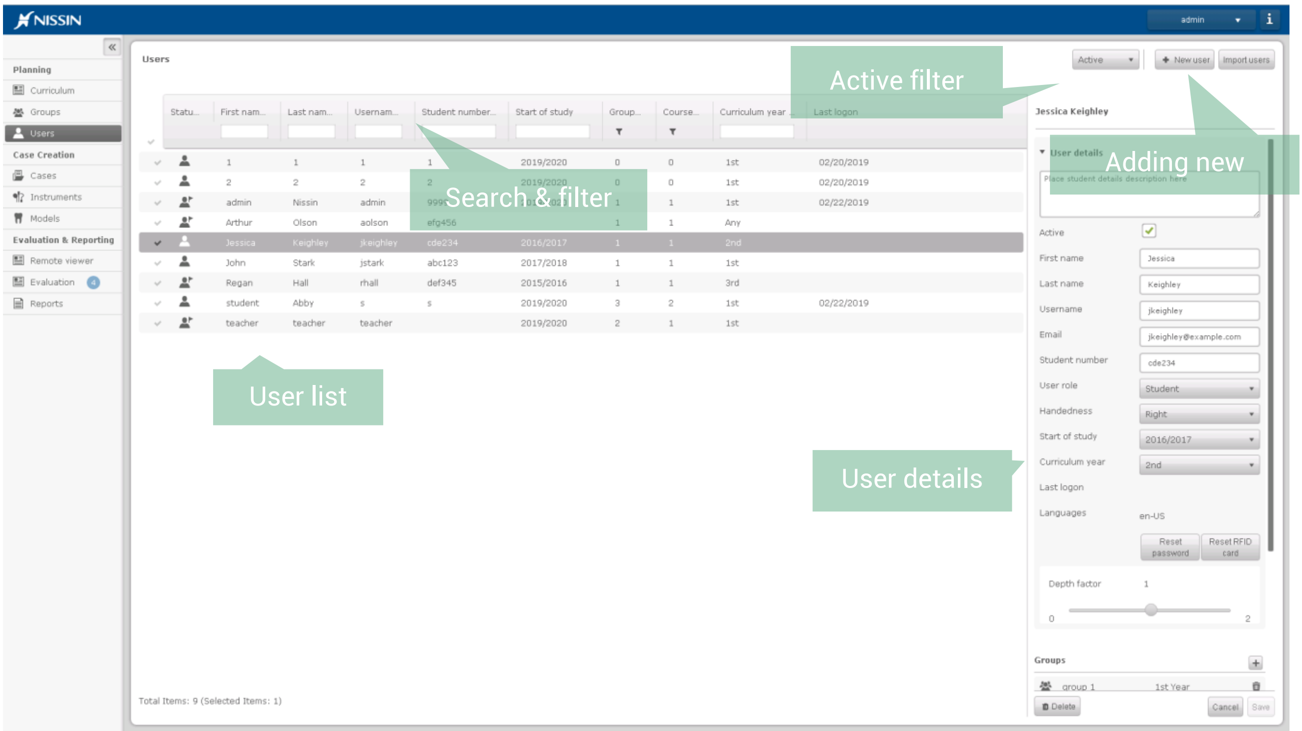
3.2. Users

The Simodont software distinguishes four different types of users (user roles):

- Students
- Student assistants
- Teachers
- Administrators

All these users are managed on the Users page of the Courseware.

The following picture shows an example of the Users page and its sections.



Users list: This is a list of all users.

User details: This section shows the details of the selected user. Such as user role, email address, but also information about groups and courses the user is participating in.

Search & filter: This is where you can search for specific users

Active filter: This is where you can filter the users based on their active state.

Add & import users: This is where new users are added by manual addition of a single user or batch import using a CSV (UTF-8) file.

User role and rights

Each user type has its own set of privileges.

When a user logs into the Teacher Station or on the Simodont, he will automatically see only those application functionalities that are applicable to that particular user role.

The privileges per user role are explained in this table:

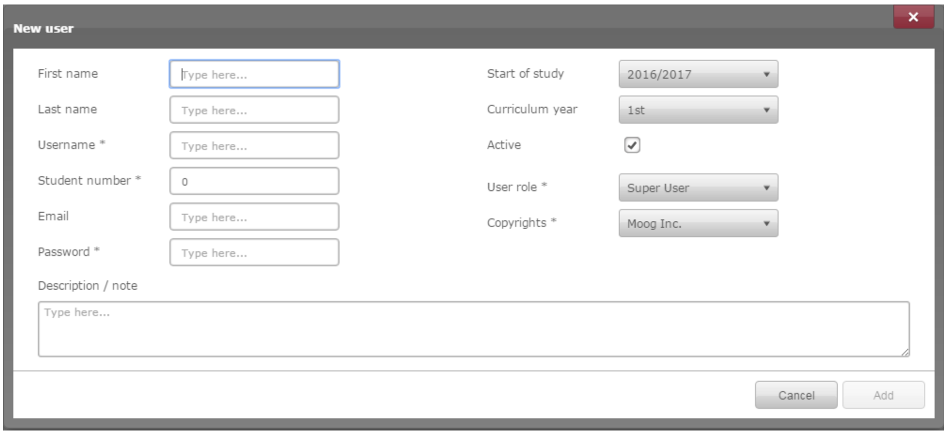
		User roles			
		Administrator	Teacher	Student Assistent	Student
Teacher station	Course planning	V	V	-	-
	Group management	V	V	-	
	User management	V	V	V	
	Case Creation and Editing	V	V	V	-
	Case Publication and Sharing	V	V	-	-
	Model management	V	V	V	-
	Instrument management	V	V	V	-
	Individual intra oral scan upload	V	V	V	V *
	Make model from intra oral scan	V	V	V	-
	Evaluation	V	V	-	-
	Reporting	V	V	V	V *
	Teacher approval	V	V	V	-
Simodont	Case execution	V	V	V	V
	View Assessed work	V	V	V	V
	Force Sensor calibration	V	V	V	V
	System Calibration tool	V	-	-	-

* this functionality is not standardly available, send a request to Nissin support if this is desired to be enabled.

Creating and importing users

Method A: adding a single user

1. In the Courseware, go to the Users page.
2. Click '+ New user'.
3. Enter the new user's information. Mandatory fields are marked with an asterisk.
4. After filling in at least all the mandatory fields, click 'Add'.
5. After this, you can login to the Simodont or Courseware with the user if the correct role has been chosen.

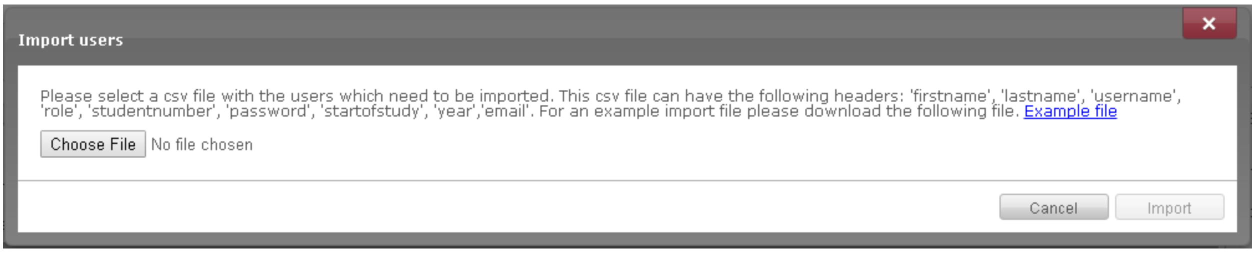


For more information on the user details please refer to Edit user paragraph.

Method B: Batch import users

1. In the Courseware, go to the Users page.
1. Click ‘Import users’.
2. Download the example file.
3. Fill the example file with your users, remove the example users, and save the file as CSV (UTF-8).
4. Go back to the Courseware, ‘Import users’.
5. Click ‘Choose File’.
6. In Windows Explorer, select your CSV user’s file.
7. Click ‘Open’.
8. Click ‘Import’.
9. In the preview, check for possible errors.
10. Click ‘Import’ again to proceed importing users or choose ‘Cancel’.
11. After the import, an import summary is given to show which users were imported successfully. You can either close this window or directly add them to a group > Add to group.

Tip: Download the example file to see how to setup your user import file (CSV UTF-8). Go to ‘Import users’ and click ‘example file’ to download the file.



User import file preparation

In order to batch import users, you will need to prepare a Comma Separated Values File. This CSV (UTF-8) file can be created using Microsoft Excel, OpenOffice or Notepad. The imported file must contain a header and needs to be structured as shown in the image below.

	A	B	C	D	E	F	G	H	I
1	firstname	lastname	username	role	studentnumber	password	startofstudy	year	email
2	John	Stark	jstark	Student	abc123	VerySecret1!	2017	1	jstark@example.com
3	Jessica	Keighley	jkeighley	Student	cde234	VerySecret2!	2016	2	jkeighley@example.com
4	Regan	Hall	rhall	Assistant	def345	VerySecret3!	2015	3	rhall@example.com
5	Arthur	Olson	aolson	Teacher	efg456	VerySecret4!		0	aolson@example.com

Example of an import file opened in Microsoft Excel example-users.csv

```
firstname,lastname,username,role,studentnumber,password,startofstudy,year,email
John,Stark,jstark,Student,abc123,VerySecret1!,2017,1,jstark@example.com
Jessica,Keighley,jkeighley,Student,cde234,VerySecret2!,2016,2,jkeighley@example.com
Regan,Hall,rhall,Assistant,def345,VerySecret3!,2015,3,rhall@example.com
Arthur,Olson,aolson,Teacher,efg456,VerySecret4!,,0,aolson@example.com
```

Same example import file in CSV format opened in Notepad++

In case you are using a text editing program, columns need to be separated with a comma and do not use any white spaces between the commas and the content of the cells.

It is strongly advised to use the UTF-8 file format. By using this file format you ensure that all characters are transferred properly into the system. For example: if you want to use east-Asian character sets or ASCII characters like ë and à.

Please be aware that you are not able to use non-ASCII characters for the username or password because the virtual keyboard on the Simodont does not support these characters.

Possibilities for importing and updating user data

Header item	Description	Mandatory at first import	Mandatory when updating users	Possible to change through update
firstname	First name of the user.	No	No	Yes
lastname	Last name of the user.	No	No	Yes
username	The 'username' needs to be unique. The username is used as base reference when updating user data through user import. **Therefore, usernames cannot be updated afterwards!**	**Yes**	**Yes**	No
Role	This is the user's role. Accepted inputs are: Student, Assistant, and Teacher.	**Yes**	Yes	Yes
studentNumber	The student number is required at first import, but only for users with the role 'student'. The student number needs to be unique. It is allowed to leave this field empty for users with the role 'teacher', 'admin' or 'assistant'.	**Yes**	No	Yes

password	This is the user's initial **temporary** password. After the first login attempt on the Simodont, the user is forced to change this password.	**Yes**	No	No
startOfStudy	This is the year the user started the study. When a year is chosen, the system automatically converts this to the school year. '2014' becomes 2014-2015	No	No	Yes
Year	Current curriculum year. Possible options are '1' to '6', or '0' in case year is not applicable.	No	No	Yes
Email	Email address of the student. Make sure there are **no blank cells** in this column. If you do not want to store user email information you can delete this whole column to avoid import issues.	No	No	Yes
active	This is the state of the user. Possible options are 'true' or 'false'. By default, the state of a user is active.	No	No	Yes

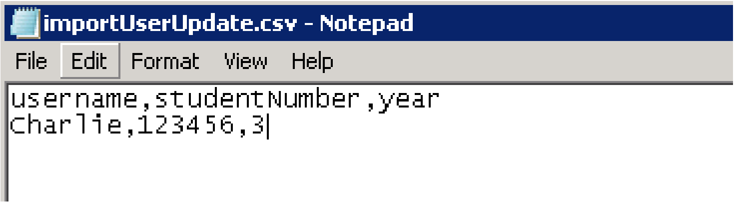
Updating user information through batch import

It is possible to update user information manually by editing a single user, or by uploading a file with existing users.

When updating user information via uploading a new CSV (UTF-8) file you do not have to include all columns in the file. Only the username is always required. For example, if you solely want to update the 'year' for several students, you only have to include the username and the year in the file and upload this via the 'Import users'. Or keep the columns that do not need to be changed empty, these will then be ignored.

	A	B	C	D	E	F	G	H
1	firstname	lastname	username	role	studentNumber	password	startOfStudy	year
2			jstark					2
3			jkeighley					3
4			rhall					4
5			aolson					0
6			jpearce					0

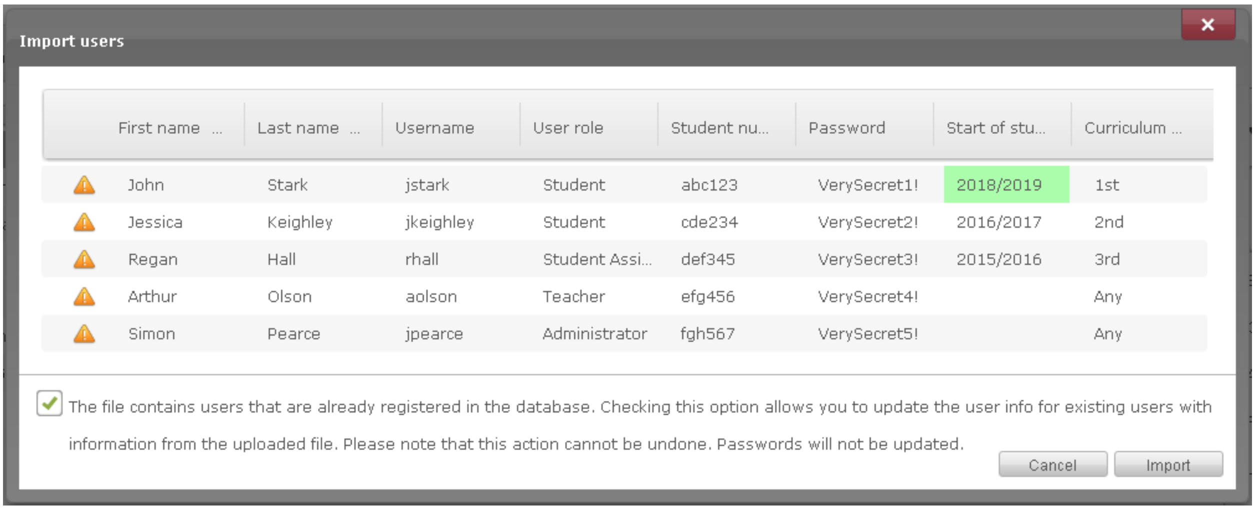
Example of an update file opened in MS Excel.
Some columns are left empty, since these do not to be updated.



Example of an update file in CSV format opened in a Notepad.
Only the required data (username + updated data) is included in the file.
Columns are separated by a comma, and no spaces are used.

To update user information:

1. In the Courseware, go to the Users page.
2. Click 'Import users' and click 'Choose File'.
3. Select your CSV (UTF-8) with updated user information and click 'Import'.
4. A message is shown "*The file contains users that are already in the database*..." If you wish to update the users, make sure to check this box. Fields that will be updated are highlighted in green.
5. Click Import.
6. After the import an import summary is given to show which users were imported successfully. You can either close this window or directly add them to a group > Add to group.



Information that will be updated is highlighted in green

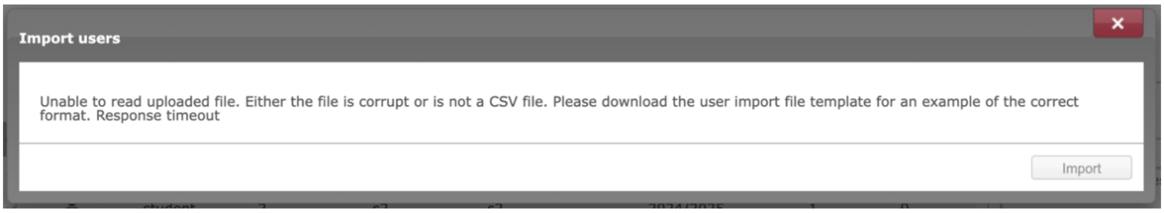
Note! For safety reasons, usernames and passwords cannot be updated via the import of a user file.

Errors in the import file

Errors in the import file are indicated in red in the import preview. In case errors appear, it is recommended to cancel the import and first correct these errors in the source file.

Possible errors could be:

- Missing data
- Incorrect data type
- Unknown characters
- Empty cells in the last column
- Wrong file format



Example of error for incorrect file format

Editing a user

1. In the user's menu, click on a user.
2. On the right side of the screen, you can see the user details where you can edit all information of the user (depending on your role and rights).

User details

First name:	The first name of the user.
Last name:	The last name of the user.
Username *:	The username you want to assign to the user. This field is mandatory and must be unique.
Student number *:	The student number of the user. This field is mandatory and must be unique.
Email:	The email address of the user.
Start of study:	This is the year the student started studying. Not applicable for users other than students. In this case any selection will do. This setting is solely used to be able to filter users based on their start year.
Curriculum year:	The current year of the curriculum of the user. Possible options are 1st – 6th and 'Any'. For users other than students, select 'Any'. This setting is solely used to be able to filter users based on their year.
Active:	This is the state of the user: Active or Inactive . By default, "Active" is enabled. Users that are not active will not be able login to the Simodont.

User role *:	This is the role of the user. Students are indicated with , where student assistants, teachers, administrators are indicated with The role of the user determines his access rights to the Courseware and Simodont. See the user role matrix for more information.
Last logon:	This is the date of the last login on the Simodont.
Groups in the overview:	This is the number of groups this user is participating in.
Groups in the details pane:	This shows a list of all groups this user is participating in.
Courses in the overview:	This is the number of courses this user is participating in.
Courses in the details pane:	This shows a list of all courses this user is participating in.
Integrations:	This shows the details when the user is linked to the university's OIDC Provider using the External Authentication system. *This is an optional feature that can be activated upon request only.*

*** = mandatory**

Search, sort and filter users

Search and filter users

Use the search fields on top of each column to search for user specifics. Use the Groups and Course columns to filter the list based on the Groups and Courses.

Sort users

Click on the header of a column in the users list, to sort the user depending on the information in the selected column. Sorting is done alphabetically or numerically.

Filter on active / inactive users

With this dropdown menu you can filter users based on their activity status.

Selecting users

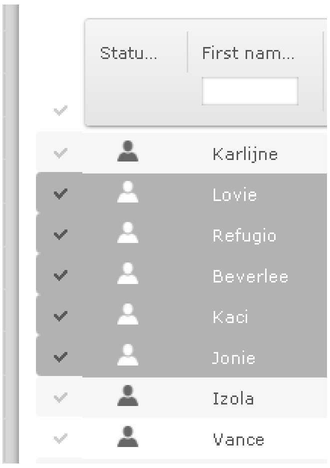
Method A: single select a user

1. In the Courseware, go to the Users page.
2. Click on a user from the list of users.

Method B: multi select users

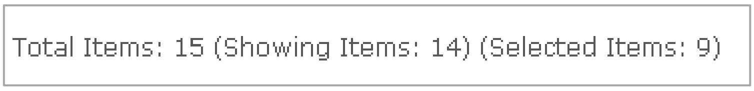
1. In the Courseware, go to the Users page.
2. Click on the check mark in front of the user
3. Repeat this for other users

Tip: Quick select multiple users: **Hold Ctrl** and click individual users, in order to select multiple users. Or **Hold Shift** and click first and last user, in order to select all users in between including first and last



Method C: Select all users from the current view

1. In the Courseware, go to the Users page.
2. Click on the check mark in the header (left from the search and filter options)



Tip: The bottom left part of the Users page shows you the total number of users (total items), the number of users currently shown and the number of users that are currently selected.

Adding users to a group

Method A: Adding a single user to a group

In the Courseware, go to the Users page.

1. Select a user.
2. On the right side of the screen, more information about this user is given.
3. Scroll down to the Groups section.
4. Click the [+] button to select a group to which you want to add the selected user.
5. Click Save.

Method B: Adding multiple users to a group

1. In the Courseware, go to the Users page.
2. Select multiple users.
3. On the right side of the screen, multi select options are given.
4. Choose "Add to group" to add the selected users to an existing group, or "[+] New group" to create a new group for the selected users.
5. Click Save.

Method C: Adding users to a group via file import

1. In the Courseware, go to the Groups page and make a group
2. Prepare a CSV (UTF-8) file containing the usernames and student numbers of the selection of users you want to add to this group.
3. Go to the Users page.
4. Click 'Import users'.
5. Select your CSV (UTF-8) file
6. Click Import
7. In the Import Summary, click 'Add to group'
8. Select a group from the list and click 'Add'

   The users from the file are added to the selected group.

Tip: Select multiple users by holding the Shift-key during selection.

Assigning users to a course

Users must be first assigned to a group before they can be assigned to a course.

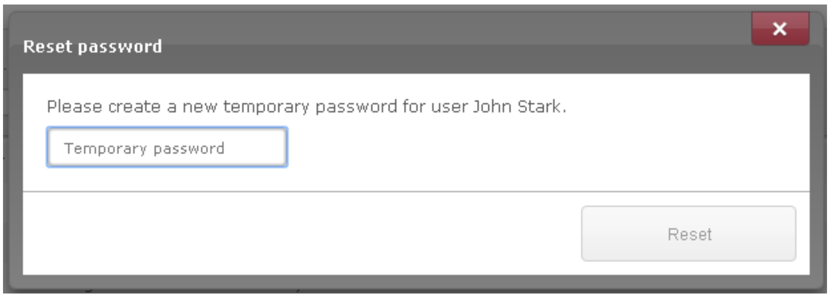
Groups are assigned to courses in the Course Planner. Please refer to paragraph 'Creating a new course' for more information.

Reset or change user password

Method A: Password is lost / Reset password

When a user loses his password, he/she needs to go to the teacher to request a new temporary password.

1. In the Courseware, go to the users page
2. Select a user from the users list
3. In the user details section on the right, click 'Reset password'
4. Enter a new temporary password.
5. Click Enter.
6. Ask the user to log in on the Simodont with the new temporary password. Once logged in on the Simodont, the user is asked to change the password immediately.



Teacher enters a new temporary password

Method B: Changing a password

Changing the password is possible at all times and is done on the Simodont.

1. Login to the Simodont
2. Click on your username in the right upper corner
3. Go to Change Password
4. Enter your old password
5. Enter your new password twice
6. Click ‘Save’
7. Your new password is saved.

Reset user login card (RFID and swipe)

Please refer to paragraph ‘Card login option’ on page 24

Deleting a user

A user can be deleted from the Courseware. Please know that it is not possible to delete users that already have assignments or attempts.

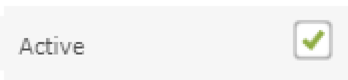
Please follow the following steps to delete a user:

1. In the Courseware, go to the users page
2. Select a user from the list.
3. Click the recycle bin icon on the right.
4. Click ‘Yes’ to confirm deletion of the user.

An alternative for deleting a user, is to make the user inactive. This is described in the next section.

User Active / Inactive state

When a user is created it gets by default the state ‘Active’.



When a user is active, he/she is able to login on to the Simodont and participate in courses. When a user is inactive, he/she is not able to login on the Simodont and cannot participate in any course.

Method A: Manually change the state per user

1. In the Courseware, go to the users page
2. Select a user from the list.
3. In the user details section on the right, find the ‘Active’ checkbox.
4. Check or uncheck the box.
5. Click ‘Save’.
6. The status is updated

Method B: Updating the state of multiple users

1. In the Courseware, go to the users page
2. Find and select the users that need a status update
3. Once all users are selected, find the ‘Active’ check box in the user details section on the right
4. Check or uncheck the box
5. Click ‘Save’
6. The status of the selected users is updated

Method C: Update user state via file import

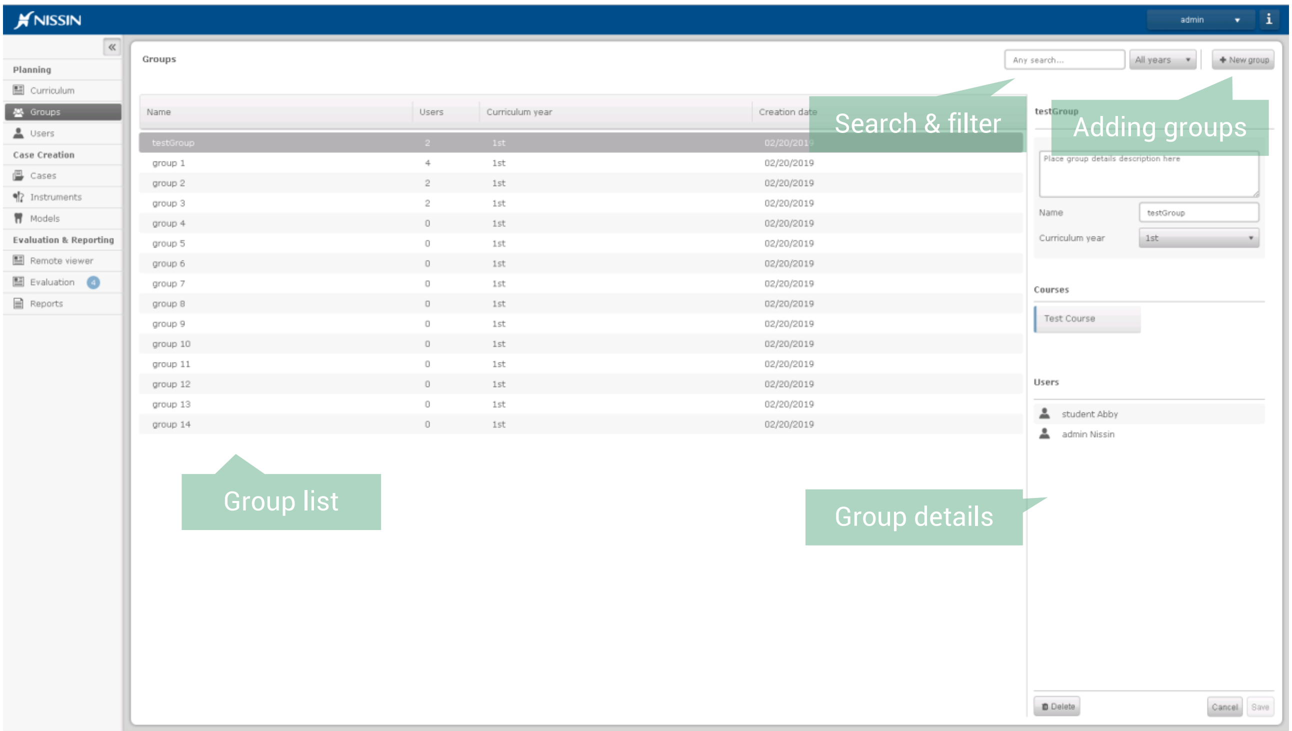
To update the status of multiple users it is also possible to use the file import option. Please read the paragraph about ‘Updating user information through batch import’.

3.3. Groups

A group is a collection of users. Groups are needed to be able to plan courses, which are planned on the Curriculum page.

All groups are managed on the Users page of the Courseware.

The following picture shows an example of the users page and its sections.



Groups list: This is a list of all users.

Group details: This section shows the details of the selected user. Such as user role, email address, but also information about groups and courses the user is participating in.

Search & filter: This is where you can search for specific groups and filter the groups based on their year or state (active/inactive).

Add: This is where new groups are added.

Group details

Name: The name of the group.

Curriculum year: The curriculum year of the group. This is only used as a label to be able to filter groups based on their curriculum year.

Description field: Here is where you can add some details about the group. These details are only shown in the Courseware.

Courses:	This shows a list of the courses the selected group is participating in.
Users in the overview:	The number of users within this group
Users in the details pane:	This shows a list of all users within this group.
Creation date:	This is the date the group was first created.

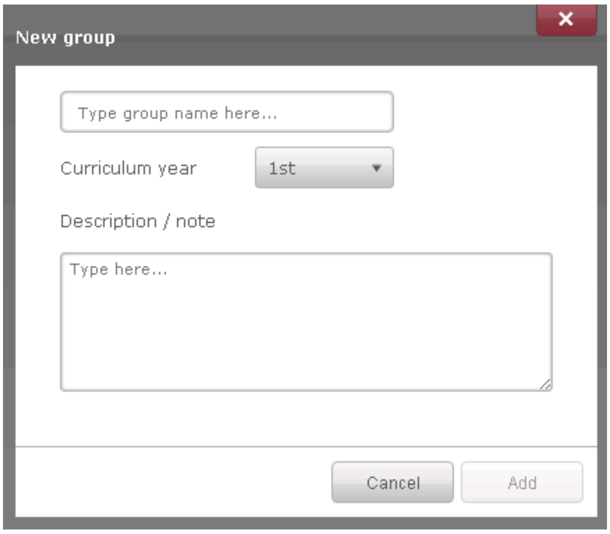
Creating a new group

Method A: Adding a new group

1. In the Courseware, go to the Groups page
2. In the right upper corner choose [New group]
3. Enter the details for the new group
4. Choose [Add]

Method B: Adding multiple users to a new group in one go

1. In the Courseware, go to Users page
2. Select multiple users (right mouse-click + Shift)
3. On the right, in the user details pane, choose [New group]
4. Enter the details for the new group
5. Choose [Add]



For all group details please refer to the group details table.

Search and filter groups

Search any

On the upper right side of the Groups page, there is an 'Any search' field. Here you can type a part or the complete name of a group.

Sort groups

When clicking on the title of one of the columns in the groups list, you can sort this list based on the column. Depending on the information in the selected column, the sorting is done alphabetically or numerically.

Filter on curriculum year

On the right side of the search field, there is a dropdown menu where you can filter groups based on the curriculum year.

Filter on year groups

On the right side of the search field, there is a dropdown menu where you can filter groups based on their curriculum year.

Editing a group

1. In the Courseware, go to the Groups page.
2. Select a group from the list.
3. In the right pane, edit the group's details.
4. Click Save.

Assigning a group to a course

Groups are assigned to courses in the Course Planner. Please refer to paragraph 'Creating a new course' for more information.

Remove users from a group

1. In the Courseware, go to the Groups page
2. Select a group from the list
3. In the group details pane, look for the user you want to delete from the group.
4. Click the recycle bin
5. Click Save

Deleting a group

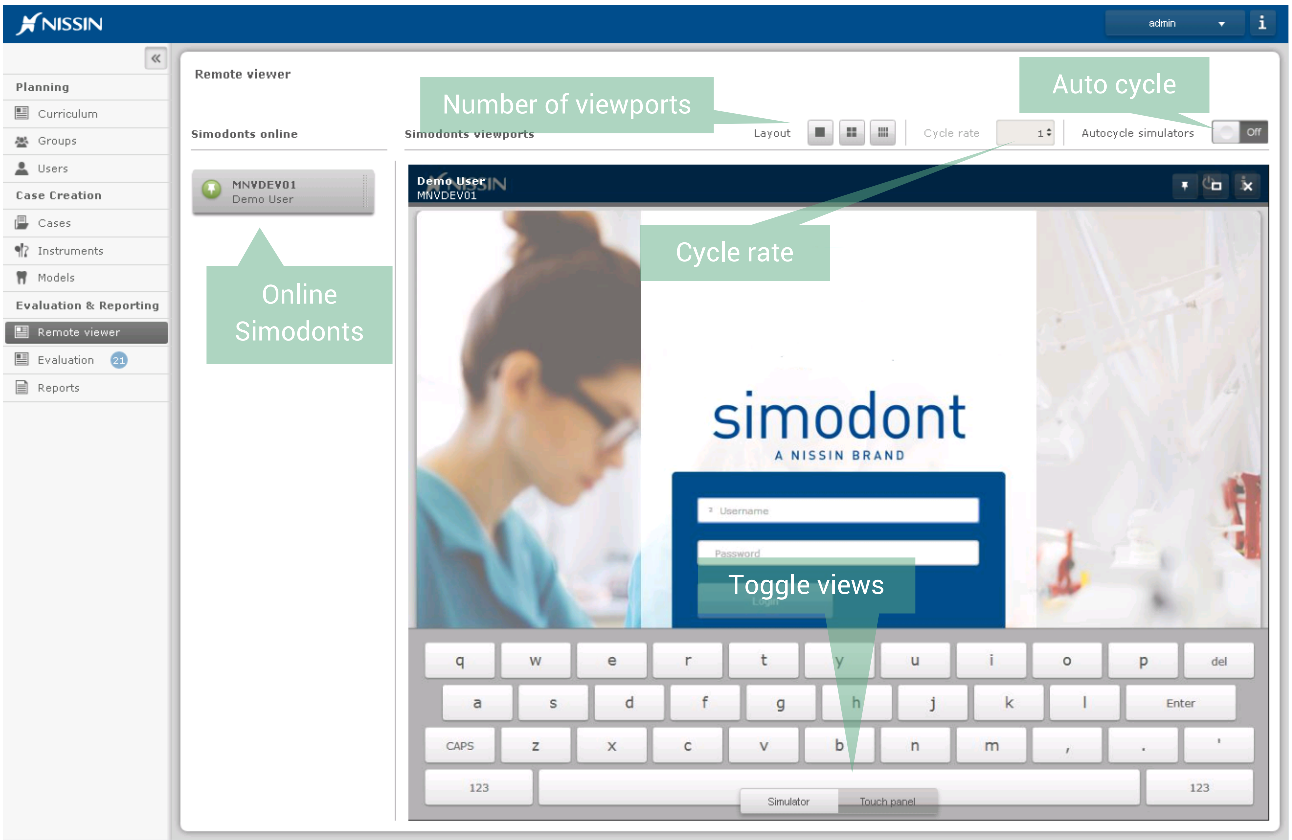
1. In the Courseware, go to the Groups page
2. Select a group from the list.
3. Click the recycle bin icon on the right.
4. Click ‘Yes’ to confirm deletion of the group.

Note! It is not possible to delete groups that are planned in a course, also if this course was in the past. If the group is no longer active, then change the status of the group to ‘inactive’.

Tip: If the planned course is in the future, and therefore has no attempts yet, you could remove the assignments for the group in the course planner and delete the group after that.

4. MONITORING, EVALUATION AND REPORTING

4.1. Remote viewer



In the “Remote viewer”, you are able to see a live stream of the screens of all active Simodonts connected to the server.

On the list of “Simodonts online” you can see a list of all the Simodonts which are currently switched on and connected to the server. This list updates automatically whenever Simodonts are switched on or off. When using this functionality, you will notice that Simodonts are often shown with a different color.

Simodont states

Grey	The Simodont is switched on, but no user is logged in
Yellow	The Simodont is switched on and a user is logged in, but no treatment execution is taking place at the moment
Green	The Simodont is switched on, a user is logged in and treatment execution is taking place. This also means that you can switch from the panel pc view to the simulator view

Tip: When a user is logged in, you can see the first and last name of that user in the “Simodonts online” menu underneath the name of the Simodont. You can also see the first and last name of the logged in user on the screen, above the name of the Simodont.

Viewport options

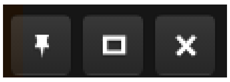
You can click on any of the Simodonts listed in “Simodonts online”. A live stream (viewport) of the current screen of the Simodont will then be provided. Whenever a Simodont is in the step “treatment execution”, you can choose between two different views on the bottom middle part of the screen.

Simulator	This view shows the simulator view as shown in the Simodont's 3D display (only here it is not Stereo). This is useful when you are particularly interested in monitoring the actual treatment of the tooth model / drilling skills of a user.
Panel PC	This view shows the panel pc view of the Simodont. Using this view, you can see all the actions of a user, so also instrument selection, on-the-fly statistics, the filling in of a treatment plan, etc.

When selecting multiple Simodonts, multiple viewports are opened. The Courseware automatically changes the layout of the “Simodont viewports” screen depending on the number of Simodonts you selected. It is possible to monitor up to 8 different Simodonts simultaneously.

At the top part of the screen, multiple view options are provided:

Layout	You can choose between one, four or eight viewports, with a layout as shown on the symbols
Cycle rate	Here you can choose the interval by which you want to perform auto cycle. The rate is in seconds. For instance, if you choose a value of 1 here, the auto cycle will automatically be processed every second
Auto cycle	The auto cycle option is a valuable tool for monitoring a large number of Simodonts. When you turn auto cycle on, the viewports will be changed after every interval period. You can toggle auto cycle off and on.



On the top right of every viewport, three options are provided:

Pin viewport	This option pins the viewport to the overview, which means that it will remain at its location and is not affected by auto cycle
Full screen pop-out	This provides a full screen popup of the particular viewport
Close	This closes the viewport

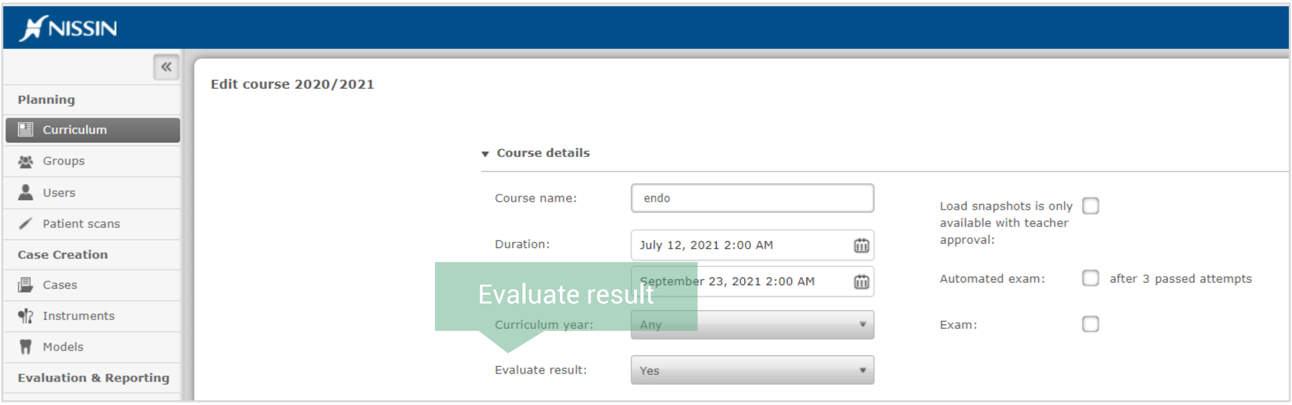
4.2. Evaluation

In the Evaluation environment, the teacher can perform visual assessment and grading of finished attempts.

Evaluate result option

In order to make finished attempts to appear on the Evaluation page, the option ‘Evaluate result’ for a course should be set to ‘Yes’. By default, this option is set to ‘No’ to avoid an overload of data in the Evaluation page.

Please know that the results for an attempt are always saved, regardless of the state of the ‘Evaluate result’ option. And you are allowed to enable or disable this option during or after the finishing of a course. This will make the results appear on the evaluation page after all.



Attempt overview

In the main screen of the evaluation environment, there is a list of attempts which can be evaluated. If there are multiple attempts for one “student/course/group/case”-combination, then these are combined.

To see the individual attempts, click on a row to unfold.

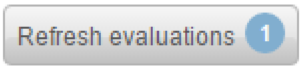
Attempt states

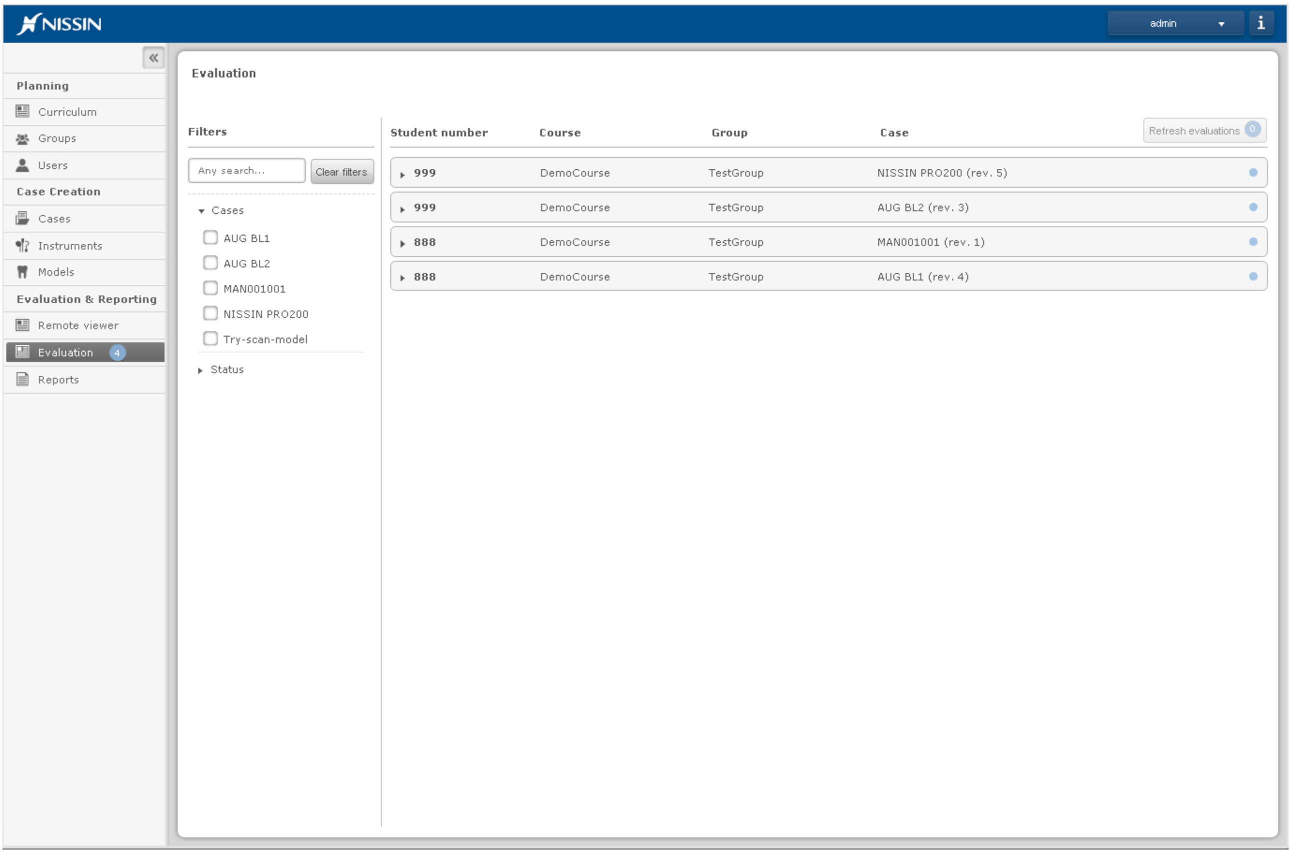
An attempt can have one of the following states: ‘New’ , ‘In progress’ or ‘Done’.

Refresh list

It can happen that while working on the evaluation page, new attempts are submitted by students. The Courseware notifies you by the “new number of attempts” symbol on the Refresh Evaluations button. The list is not updated automatically when you are working on this page.

To manually update the list of submitted attempts, press the Refresh button.





Filtering and searching attempts

Filtering

Filtering of attempts is done based on course, group, case or state.

Search any

On the left side of the attempts list, there is an ‘any search’ field. Here you can type a part of a case, course or group.

Evaluation of an attempt

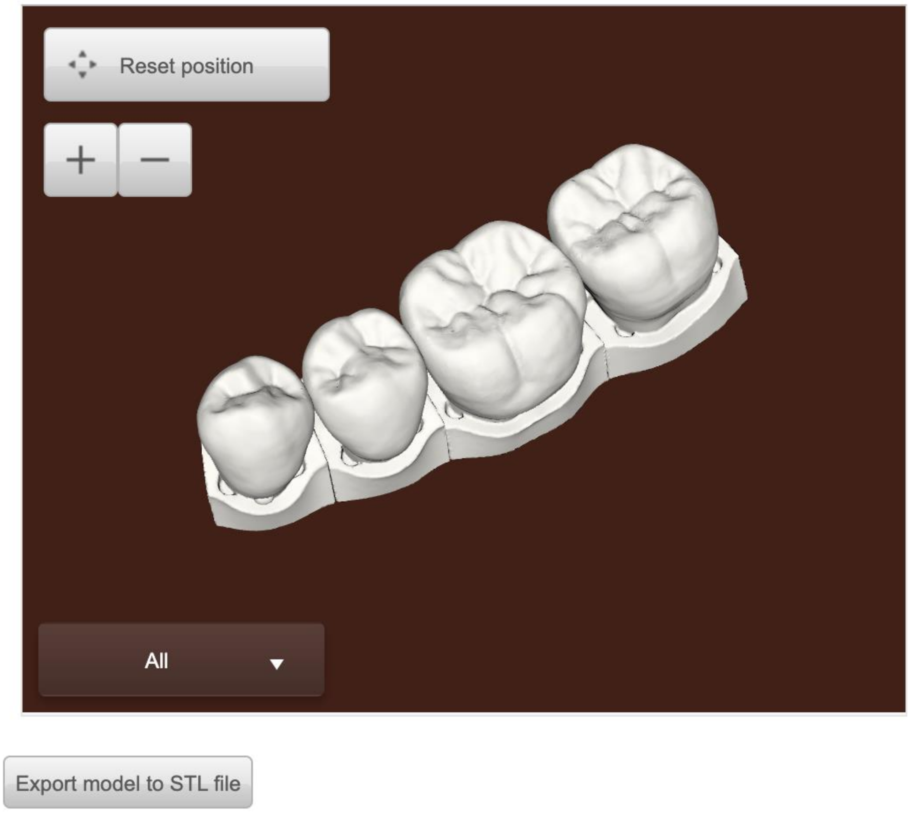
To actually evaluate an attempt, please do the following:

1. In the Courseware, go to the Evaluation page.
2. Look for the attempt you want to evaluate from the list of attempts.
3. Click on the attempt row to open the attempt.
4. Review the work, enter feedback if needed and grade the attempt.
5. Press Save in case you need to continue the evaluation some other time, or press Submit if you want to submit the evaluation of the attempt.

End result

This section shows a 3D model of the end result of the treatment. Regardless of what type of case, model or assessment types were selected, the 3D view is a fixed part of the evaluation.

The teacher can pivot and move the model using the mouse to inspect the student’s preparation.



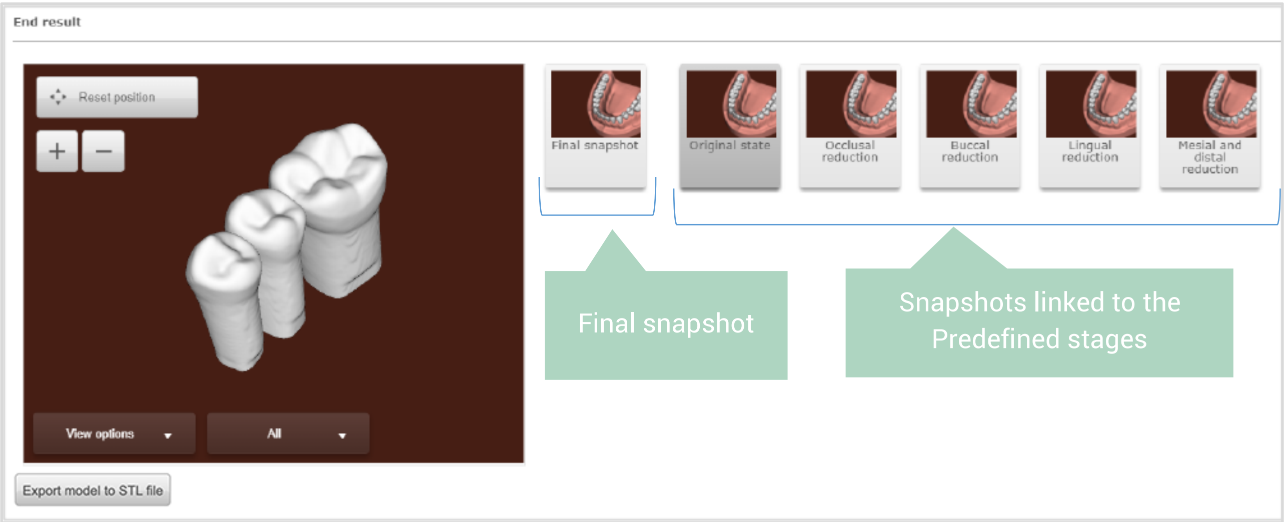
Viewer options

The 3D viewer shows only the drillable teeth that were activated in the model for the case. With the view options, it is possible to toggle the visibility of the main, adjacent and antagonist teeth.

When also the view option ‘semi-transparent tooth’ was enabled in the case, this view option is automatically enabled here in the Evaluation page as well. This makes it possible to inspect the pulp chamber and root canals of the teeth.

Predefined stages of snapshots

When Predefined stages are defined within the case, the snapshots linked to these stages are shown next to the 3D viewer on the Evaluation page. By clicking on one of the stages, the snapshot for this stage is loaded in the viewer.



Analysis

This section shows up to four assessment pages. Which pages are actually shown depends on which assessment types were enabled during the development of the case. These assessment pages are exactly similar to what the student sees on the Simodont.

The four optional assessment pages are:

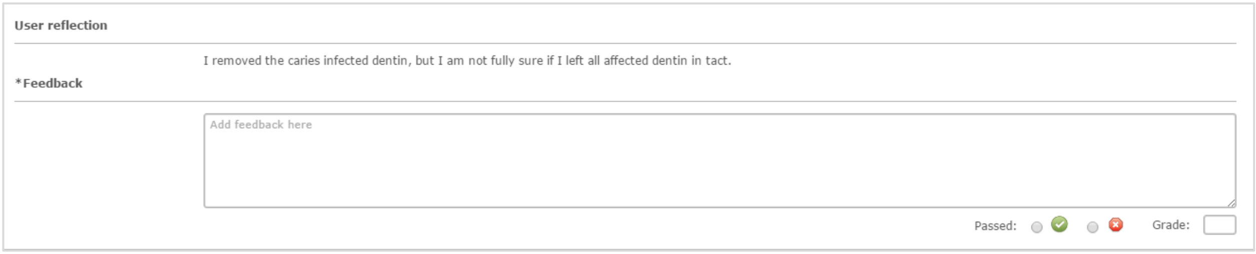
- Treatment statistics
- Treatment plan
- Rubric assessment
- Evaluation against treatment plan

The ‘Treatment statistics’, ‘Treatment plan’ and ‘Evaluation against treatment plan’ pages are static representations of the pages shown to the student on the Results page on the Simodont.

The rubric assessment on the other hand provides the possibility to fill in the teacher’s scoring next to the student’s scoring.

Please note that the rubric scoring does NOT automatically affect the end score of the attempt.

Reflection and grading



At the bottom part of the evaluation page, the student's own feedback is shown. The student is able to enter his feedback on the Results page on the Simodont just before submitting the case attempt.

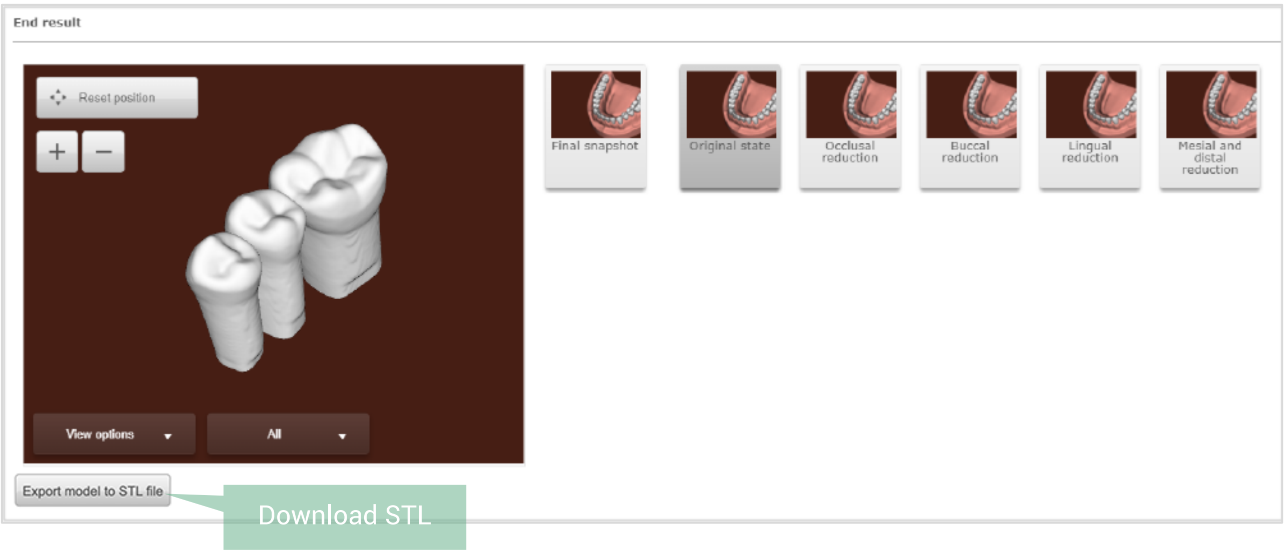
The teacher can add his feedback in the 'Feedback' section. Entering feedback is optional.

Before you can submit your evaluation, you will need to indicate if the student has passed or failed the case attempt, and a grade should be entered.

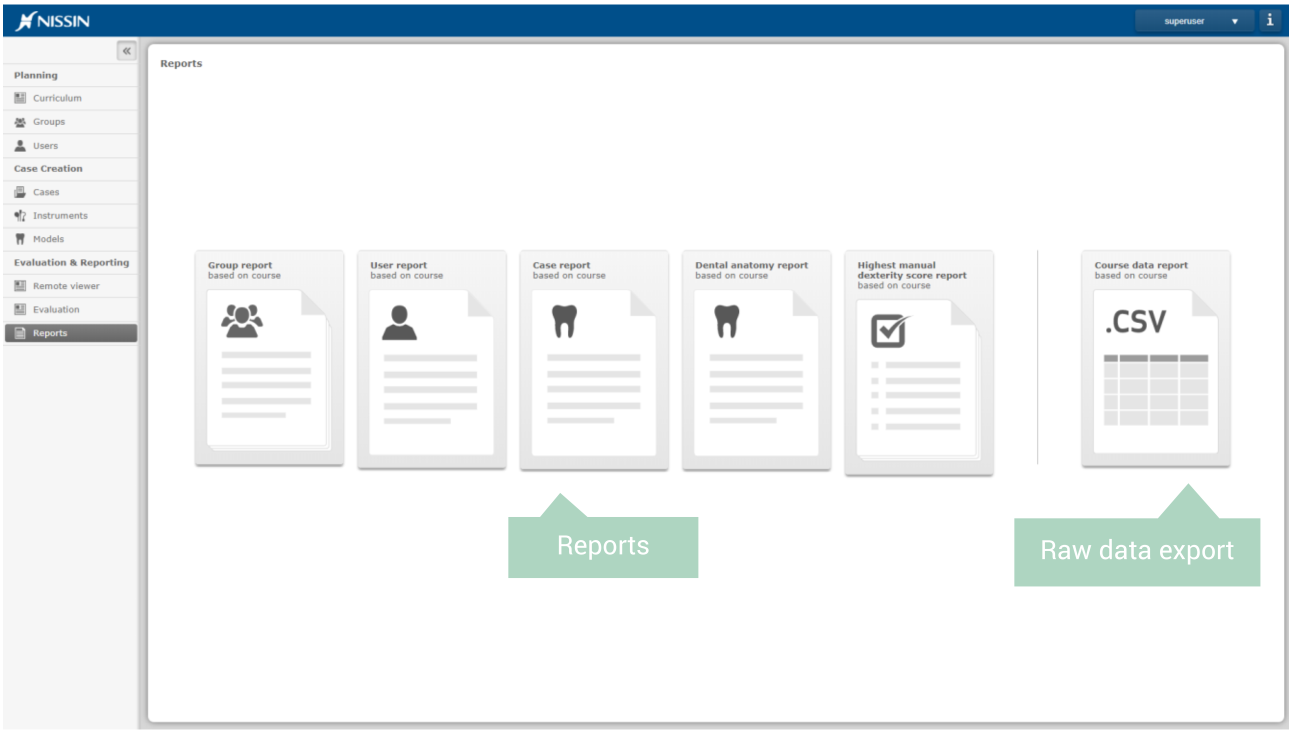
Supported grading systems are: 0-100 and A-F

Downloading the STL file

When pressing the 'Export model to STL file' button below the viewer, the state visible in the viewer is being downloaded to the computer's Downloads folder. This means that the Final snapshot, but also the snapshots linked to the different predefined stages can be downloaded as an STL file.



4.3. Reports



The reporting section supports a set of four predefined reports, and course data export to a CSV file.

Report type	**Description**	**Data selection**	**Supported file formats**
Group report	Predefined summary per student, per case, per attempt	Based on one course	CSV STL, Snapshot per attempt
User report	Predefined summary for one student, per case, per attempt	Based on one course or patient scan	CSV STL + Snapshot per attempt
Case report	Predefined summary for one case, per student, per attempt	Based on one course	CSV STL + Snapshot per attempt
Dental anatomy report	Predefined summary for one case, per student, per tooth	Based on one course	CSV
Score report	Simple score report (passed/failed + score) per case per student	Based on one course	CSV STL + Snapshot per attempt
Course data report	Export of all data for the selected course, except the Dental Anatomy cases	Based on one course or all courses	CSV

Creating a Group report

1. In the Courseware, go to the Reports page
2. Click the Group report icon
3. Select a course
4. Select a group
5. Click Generate in the upper right corner. A report is generated.
6. Select 'Export CSV' in the upper right corner. A report is downloaded into your Downloads folder.

Creating a User report

1. In the Courseware, go to the Reports page
2. Click the User report icon
3. Select a student
4. Select a course or a patient scan
5. Click Generate in the upper right corner. A report is generated.
6. Select 'Export CSV' in the upper right corner. A report is downloaded into your Downloads folder.

Creating a Case report

1. In the Courseware, go to the Reports page
2. Click the Case report icon
3. Select a course
4. Select a case
5. Click Generate in the upper right corner. A report is generated.
6. Select 'Export CSV' in the upper right corner. A report is downloaded into your Downloads folder.

Creating a Dental anatomy report

1. In the Courseware, go to the Reports page
2. Click the Dental Anatomy report icon
3. Select a course
4. Select 'Export CSV' in the upper right corner. A report is downloaded into your Downloads folder.

Creating a Score report

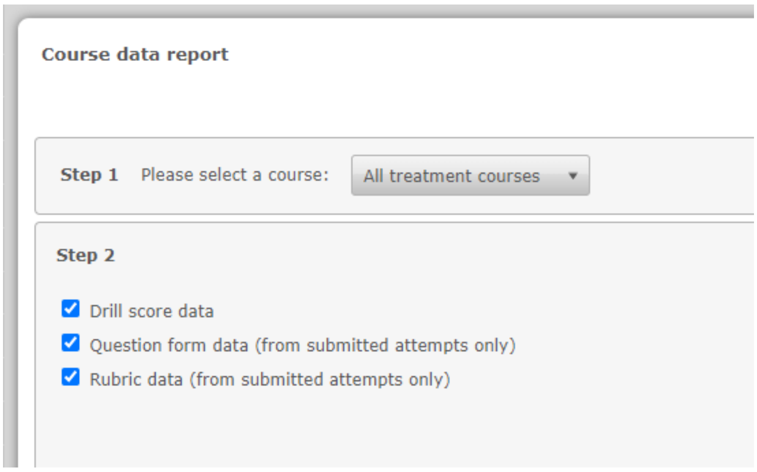
1. In the Courseware, go to the Reports page
2. Click the Score report icon
3. Select a course (only select manual dexterity courses here!)
4. Select a group
5. Click Generate in the upper right corner. A report is generated.
6. Select 'Export CSV' in the upper right corner. A report is downloaded into your Downloads folder.

Creating a Course data export

1. In the Courseware, go to the Reports page
2. Click the Course data report icon
3. Select a course or select 'All courses'
4. Check which types of data you would like to export to file.

   Drill score data, Question form data and or Rubric data.

   The export will generate separate files for each data set, but only if this data is available for the selected course.
5. Click 'Export CSV'. A CSV file is downloaded. The CSV file can be opened in, for example, MS Excel.



Question form data (if included in a case attempt) is exported to a separate file.

Downloading an STL per attempt

From the predefined reports it is possible to download an STL file per attempt. Probably the easiest way to find the STL you are looking for is by using the Student Report as this gives the attempts for one specific user only.

1. In the Courseware, go to the Reports page.
2. Click the Students report icon.
3. Select a student.
4. Select a course or a patient scan.
5. Click 'Generate' in the upper right corner. A report is generated.
6. Look for the attempt in concern.
7. Click 'STL' under the final state image to download the file.

STL viewers

STL is a common 3D file format which is supported by many different 3D tools. This paragraph gives some examples of tools that can be used to view the downloaded STL files.

Online STL viewers:

- https://www.viewstl.com/
- https://www.3dvieweronline.com/
- https://viewer.autodesk.com/

There are many more, free (online) STL viewers.

Freeware 3D models viewers:

Freeware STL viewers have the advantage that they usually can do a lot more than just viewing STLs, such as filtering and editing actions. However, these tools can have a steep learning curve. Some freeware tools are:

- MeshLab http://www.meshlab.net/ ~~(is installed on the teacher station)~~
- Mesh Mixer http://www.meshmixer.com/

4.4 Teacher Approval for continuation of an exam case

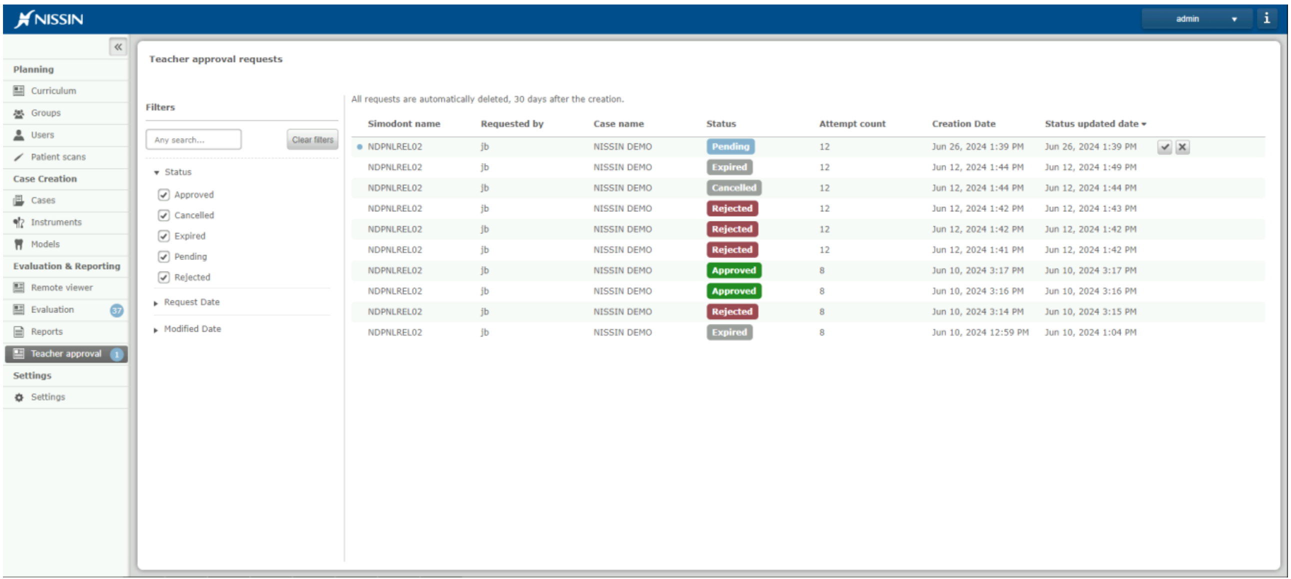
In the event that a technical problem occurs during the execution of an exam, it might be necessary to continue an exam on a different Simodont system. For this particular reason the “Teacher Approval” functionality is introduced.

Teachers can now approve or reject exam retake requests, made by students who wish to continue their work on a different system. RFID activation is not needed to use this feature.

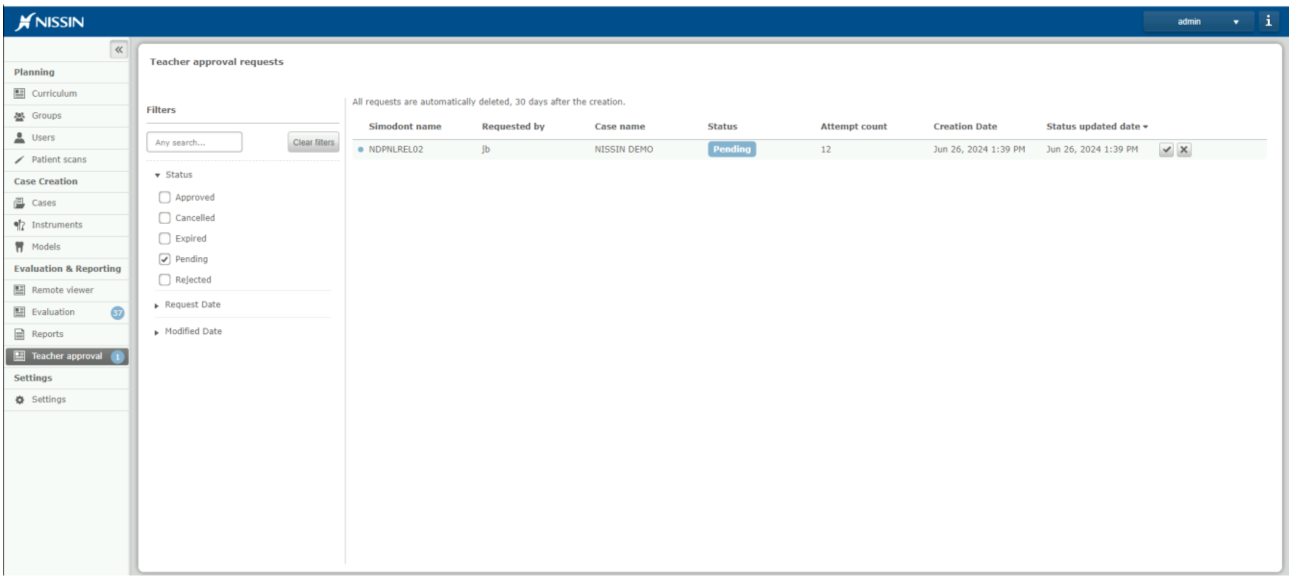
Overview of approval requests

New “Teacher Approval Requests” will only originate from courses that are flagged as “exam” course. When a student tries to login to a Simodont system, while an exam case was started on another Simodont system, the teacher will be notified on the Teacher Station Application. A new request is added to the list on the Teacher Approval page. Here the teacher can accept or reject the request and thereby allow or block the student from continuation.

By default, only the active approval requests, with status Pending, are shown on this page. If there are no Pending requests the user will be notified of this, and can move to the overview of non-active requests. Requests will be automatically removed after 30 days.



Teacher approval page without any filters active



Teacher approval page standardly only shows requests with status Pending

For the approval requests the following data is shown:

Simodont name	The Simodont from which the request was send
Requested by	Username of the student that send the request
Case name	Case for which the request was send
Status	The status of the request, see below for the different statuses
Attempt count	The number of times the student has already started this case within this course
Creation date	The date and time the request has been created
Status updated date	The date and time the request has changed its status
Action buttons	 to approve the request  to reject the request

Approval request states

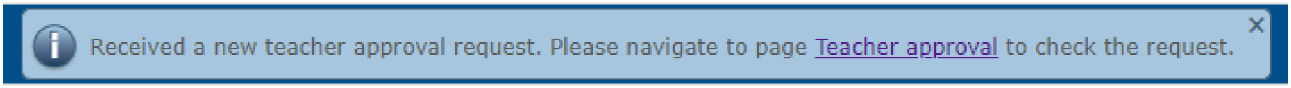
An approval request can have one of the following states:

Pending	The teacher has not yet processed the request.
Accepted	The teacher has accepted the request. The student can continue with the execution of the case.

Rejected	The teacher has rejected the request. The student cannot execute the case and will return to the case overview
Expired	The teacher did not processed the request within the 5 minute timeframe after sending the request.
Cancelled	The student has cancelled the approval request before the teacher processed it.

Refresh list

The approval request page will be automatically updated when a new requests. The user will be notified via a notification on top of the screen, also if the user is not on the Teacher approval page.



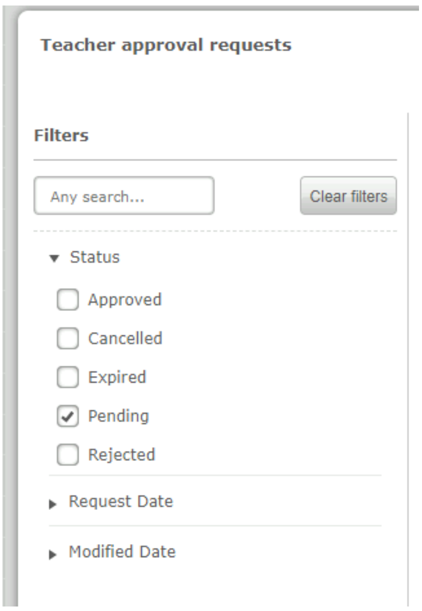
Filtering and searching approval requests

Filtering

Filtering of approval requests is done based on status, request date or modified date (the date and time the request has changed its status).

Search any

On the left side of the approval request list, there is an 'any search' field. Here you can type (a part of) a value for any of the shown columns.



Approval request overview filters

Accept or reject approval requests

The teacher can accept or reject the approval request by clicking on either the button to approve the request or the button to reject the request.

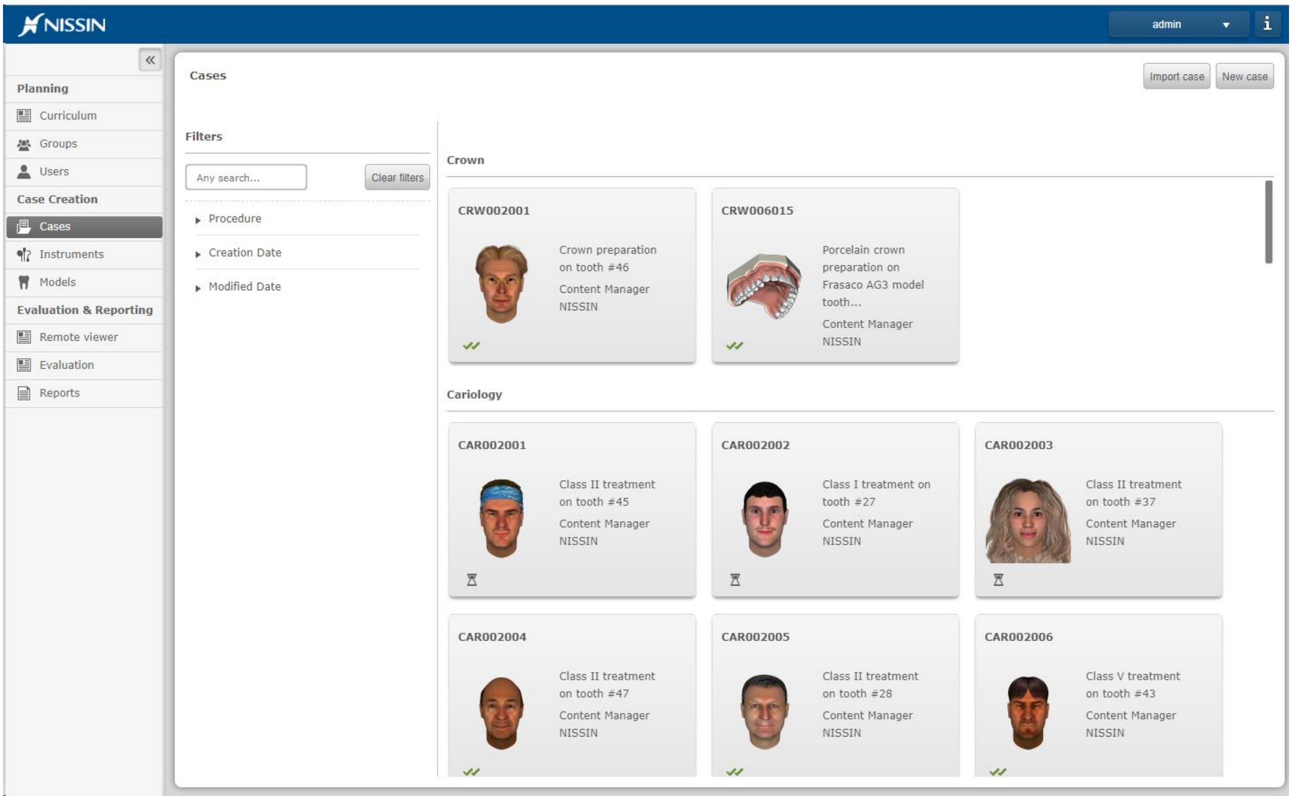
The teacher will get a confirmation pop-up before the status of the request is changed.

Confirmation message to reject the approval request

5. CASE CREATION

5.1. Cases

The Cases page shows an overview of the case library. Recent case activities are shown at the top, the rest is categorized by case type.



Available case actions are:

- New case
- Delete case
- Publish case
- Edit case
- Copy case
- Export case
- Import case

Creating a new case

Creation of a new case is done by means of the so called 'Case Wizard'. The case wizard is a tool that guides you through the process of case creation, making sure that all required ingredients are included and specified.

Not all of the ingredients (pages) are mandatory, some are optional. As a teacher you have the freedom to enable and disable pages and options according to your own preferences such that the result fits the needs of your program.

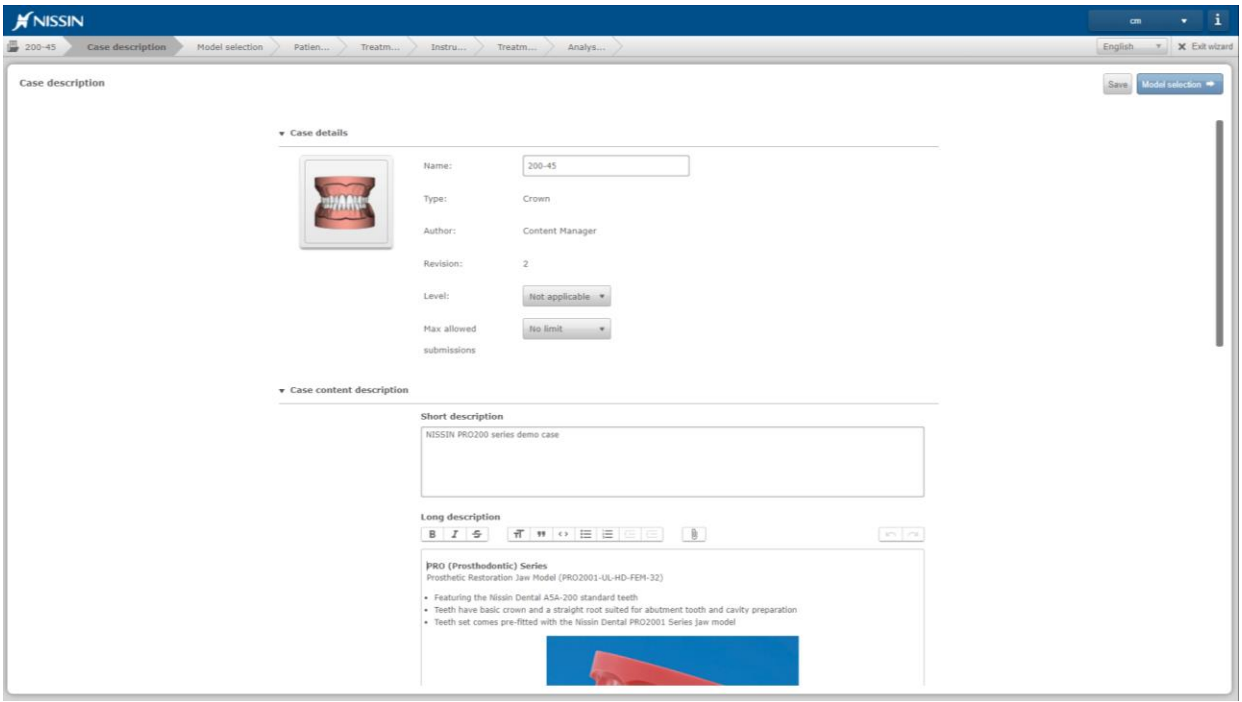
The case content and workflow shown in the Courseware is very similar to what is shown to the student on the Simodont. The following diagram shows the connection between the pages in the Courseware and on the Simodont.

Courseware

Case description	>	Model selection	>	Patient details	>	Treatment plan	>	Instrument selection	>	Treatment execution	>	Analysis		
Required		Required		*Optional*		*Optional*		Required		Required		*Optional*		
Case description		>		Patient details	>	Treatment plan	>	Instrument selection	>	Treatment execution			>	Results

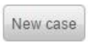
Dental Trainer Application

Case wizard ingredients



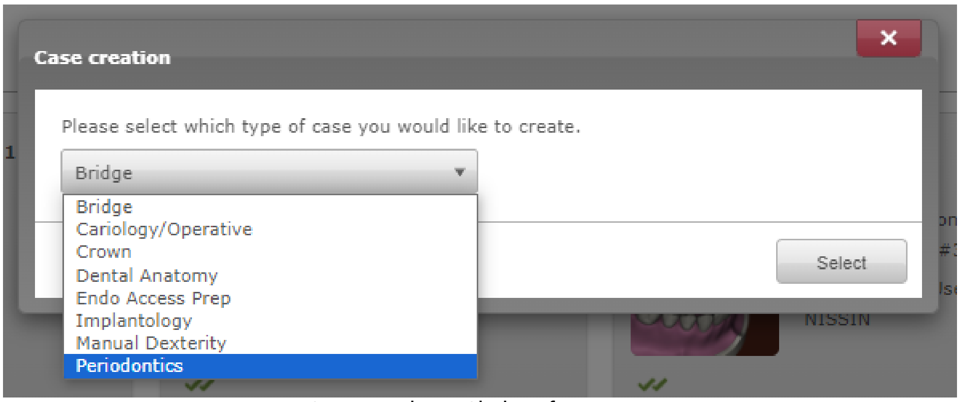
Case wizard – The Case Description page of a normal case

In order to create a new case

1. In the Courseware, go to the Cases page
2. Click 

in the upper right corner.

   Now, you first need to specify what kind of case you would like to create. Make the choice from this list of case types and click the [Select] button



Case creation – Choice of case type

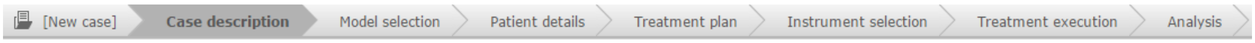
Note! Case design starts by making a selection for the type of case that being created. This is needed as the type of case determines the structure and available features of a case. The procedural cases like Cariology, Crown, Endo Access Prep all look very similar in structure. They all focus on one virtual model. Where a Dental Anatomy case is a collection of models.

Note! Dental Anatomy is used for practicing and examining teeth identification. Although the tooth model can be viewed and touched in 3D there is no drilling taking place. The workflow to set up the case is different from the other available case types. There are only two fixed ingredients that need to be specified, which are: Description and Teeth. Both pages and the available settings will also be explained in detail in the following paragraphs.

3. The Case Wizard is started. Follow the instructions on each page. Use the blue button in the upper right corner to proceed to the next page.
4. Fill in the details on the Case description page
5. Select a model (and drillable teeth) on the Model page
6. Fill in the details on the Patient details page or disable if not needed by unchecking the checkmark at ‘Active Patient details’ at the top of the page
7. Fill in the details on the Treatment plan page or disable if not needed by unchecking the checkmark at ‘Active Treatment plan’ at the top of the page
8. Select whether students should select their instruments or make a pre-filled instrument tray for them on the Instrument selection page
9. Set your preferences for the simulator settings on the Treatment execution page
10. Select your preferred analysis method(s) on the Analysis page
11. Save and publish your case

The following paragraphs give a detailed explanation of the different settings per page.

Case description - [mandatory]



This page is mandatory. The information entered in this page is shown to the student on the first page ‘the Case Description’ page.

Case details

Name: This is the name of the case. The case name must be unique.

Type: This is the type of the case. The possible options are:

- Bridge
- Cariology / operative
- Crown
- Dental Anatomy
- Endo access prep
- Implantology
- Manual dexterity
- Periodontics

Cases are grouped by case type in the Courseware. In addition, the availability of some case options is related to the selected case type.

- The automatic score formula is only available for manual dexterity type cases.
- The antagonist view option is only available for non-manual dexterity cases.
- Caries detection option is only available for cariology cases.
- Irrigation option is only available for endodontology cases.
- Calculus detection option is only available for periodontics cases.

Author: The author is automatically assigned as being the user who started the creation of the case (revision).

Revision: This is the revision of the case. Each revision could have its own author, as long as they are from the same institute.

Level (optional): The level is just an indication of the difficulty of the case. The system will not sort cases based on the level automatically.

Max attempts: This is the maximum number of attempts the student will get. If the maximum has been reached, the student will not be able to make an attempt at this case again. If you do not want to you a limit, select ‘no limit’.

Case content description

Short description (optional): The short description is shown on the case tile and case details pop-up in the Courseware and on the Simodont. The short description is not shown in the case itself!

Long description (optional): The long description is shown on the case description page of the case. The text is shown to the student as shown in this text editor.

For images, jpg, jpeg, png and gif formats are supported.

Predefined stages of snapshots (optional):

With this option, you can ask the student to take snapshots of certain predefined stages during the treatment. This enables you as a teacher to review the stages and reflect on the process afterwards. The definition of the different stages is described here on the case description page, such that the student is prepared before the actual treatment is started.

Where/how do I see this feature back?

Dental Trainer Application: Case Description page > The student sees a list of these stages (name + description) on the case description page on the Simodont. Make sure to instruct the student that he must create snapshots for each stage during the treatment phase, in the case's long description.

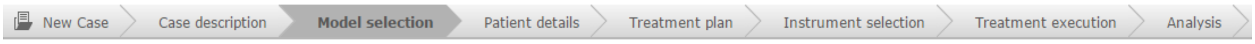
Dental Trainer Application: Results page > In the In the end, the student will have to link the taken snapshots to the defined stages on the Results page, just before submitting the case.

Courseware: Evaluation page > The teacher will be able to see the different snapshots during the evaluation of the case attempt.

Stage name: Enter the name for each stage.

Description: Describe what you expect to see in the snapshot for this stage.

Model selection - [mandatory]



This step in ‘case creation’ is mandatory. The student will not see this page on the Simodont. However, a model is a required ingredient of each case.

The courseware offers a library of different models suitable for different types of cases. As a teacher you are not able to create your own models using the courseware, as this would require scan data and a special 3D model.

Filters:

Use the filter or search field to find the models suitable for your case. Either filter on tooth number (ISO tooth numbering system), institute or search on model name using the search field.

Model selection:

The Model selection page shows you the selection of models that are suitable for the selected procedure. Therefore, you will not see all models that are included in the model library, as models are usually not suitable for all dental procedures.

To configure a model for your case, select a model by clicking on one of the model tiles from the model overview.

The tooth selector

The tooth selector in the model details pane on the right shows you which teeth in the model are available to become drillable (‘available as drillable’). For some models, certain teeth might be visually there, but cannot be made present as a haptic drillable model.

You can select up to two main drillable teeth, depending on the type of case. One main tooth for cases like cariology, crown, endodontic access cavity. Two main teeth for the bridge procedure. Any neighboring and opponent teeth present in the model will be activated automatically.

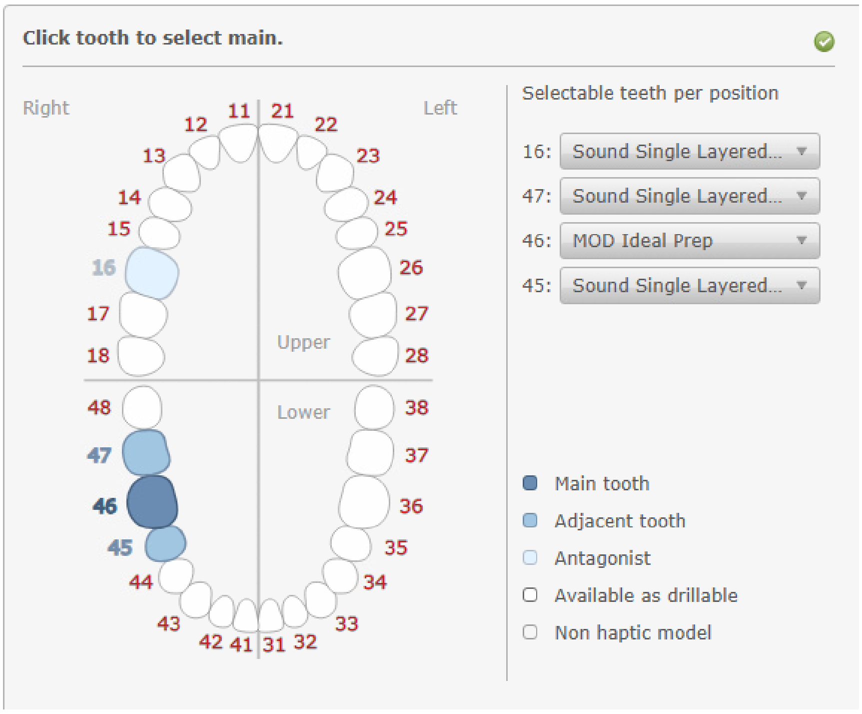
For the Periodontics procedure up to five main teeth can be selected. The Reset main teeth button can be used to deselect all teeth. There will be no neighboring and antagonist teeth activated in the Periodontics model.

Selectable teeth per position

So called multi-case models, have more than one tooth series included. For these types of models an extra selector is shown, to allow the user to select a specific tooth (sound, with caries, target in tooth, with calculus etc.) for the case.

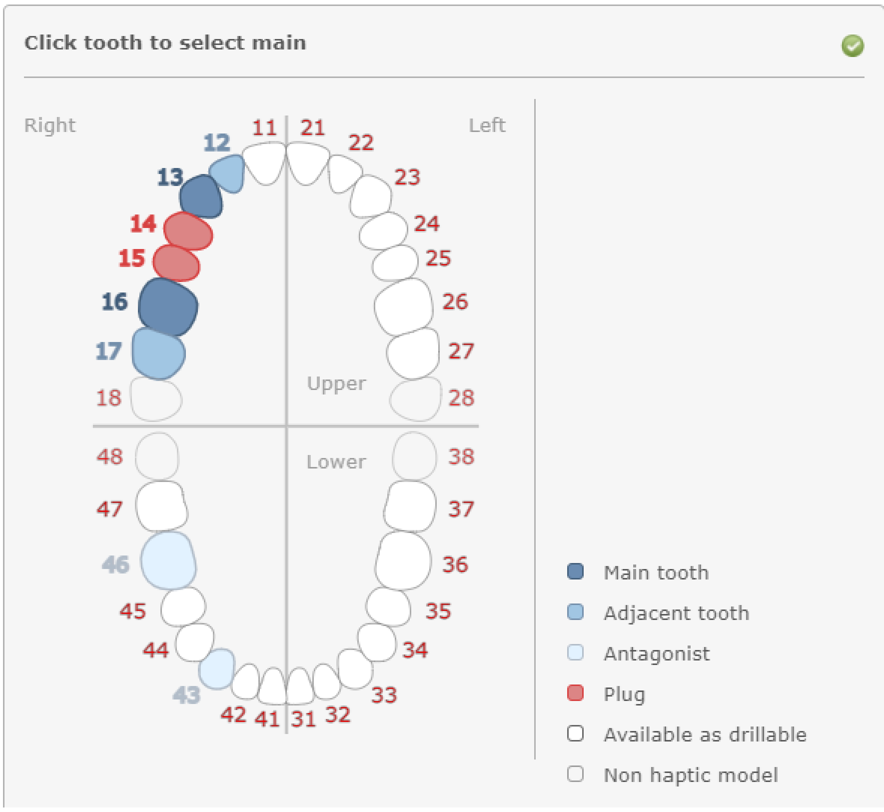
Note! The assessment of the treatment focuses only on the selected main tooth/teeth.

Note! When selecting some teeth without calculus for a periodontics scaling case, the shown treatment statistics removal target will be as defined at case level.



The image above shows an example of a model with one selected main tooth. In this example, you see that all teeth are either white or a shade of blue. Meaning that they are all available as a drillable tooth and thereby selectable for usage in a case. When the main tooth is selected, the adjacent teeth and antagonist teeth are selected automatically as well, except for the Periodontics procedure.

In this example the main tooth is a tooth with caries, which asks for a Class II cavity preparation.



This image shows an example of a bridge case based on the Nissin PRO500 model. The 8th tooth of each quadrant is missing, like in the real physical Nissin PRO500 model. There are two selected main teeth (13 and 16). The positions between the selected main teeth are automatically replaced by so called 'plugs'. The adjacent teeth and antagonist teeth are selected automatically as well.

Model description:

To see if the selected model is suitable for your case, you must read the model description in the right pane.

Select a tooth from the tooth selector and on the right side the details for the selected tooth are directly shown or adjusted.

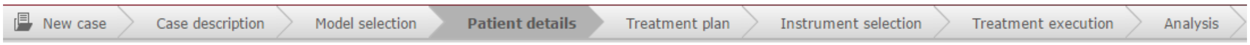
The tooth details section shows you, when available:

- Which segments (tissues) are present in the selected tooth
- The radiographs for the selected tooth
- The intra oral pictures for the selected tooth

The radiographs and intra oral pictures can be enlarged by clicking on the images.

Model details are editable on the Models page of the Courseware.

Patient details - [optional]



Feel free to leave some sections from this page empty, as empty sections will not be shown in the case on the Simodont. The only required section when the Patient details page is enabled, is the Patient Details section.

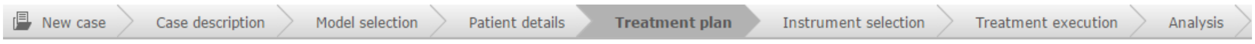
Activate Patient details:	The Patient Details page is optional. If this page is disabled it is excluded from the case shown on the Simodont. Enable this page if you want to include a virtual patient in the case.
Patient details:	This is where you select a patient picture and fill in the patient's personal data such as name, age, gender, marital status and profession.
Reason for visit (optional):	Explain why the patient is visiting the dentist.
Patient history (optional):	Enter information about the patient's dental history.
Patient examinations (optional):	Enter information and add pictures for the different patient examinations. The intra oral images and radiographs are automatically added to this page based on the selected model. If you do not want to use these images, simply hover above the image and press the recycle bin icon.
Inherit from model	Use this button if you would like to update or retrieve the intra oral images and radiographs that belong to the selected model. This might be useful when you have changed the selected model in the case, avoiding nonmatching data
Diagnosis (optional):	Enter information about the diagnosis.

Question forms

The patient details page offers the option to add question forms per section. For more information on question forms in cases, please refer to Chapter 4.2 Assessment methods, paragraph Question forms

This icon indicates that you can add a question from to this section.

Treatment plan - [optional]



Feel free to leave some sections from this page empty, as empty sections will not be shown in the case on the Simodont.

Activate Treatment plan: The Treatment plan page is optional. If this page is disabled it is excluded from the case shown in the Simodont.

Enable this page if you want students to write down their plan for treatment prior to the actual treatment.

Description (optional): The meaning of this section is twofold. As a teacher you can write instructions for the treatment plan. And by enabling the option "student must write a treatment plan description" a text edit field is presented to the student to write his own plan.

In case you do not want to use the description section, just leave both the text field and checkbox empty.

Drawings (optional): Here you can add intra oral pictures that students will use to draw the planned treatment.

Once a picture is added, you will have to give the picture a label of any choice and in addition you must select the type of view.

Inherit intraoral: Use this button if you would like to update or retrieve the intra oral images that belong to the selected model. This might be useful when you have changed the selected model, to avoid nonmatching data.

Chosen treatment: Select here if the student should be provided with several different options for a treatment plan from which he/she will need to select one when running the case on the Simodont. The chosen treatment will be saved and can be exported by the "course data report".

Restoration material: Here you can select if the student should select a restoration material, or you can make this selection beforehand.

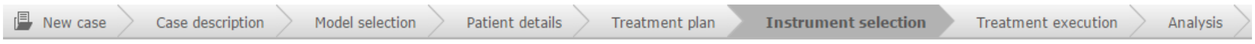
Pretreatment (optional): This section is solely used to have the option to add a question form right before the actual treatment is started.

Question forms

The treatment plan page offers the option to add question forms per section. For more information on question forms in cases, please refer to Chapter 4.2 Assessment methods, paragraph Question forms

This icon indicates that you can add a question from to this section.

Instrument selection - [optional]



The instrument selection page looks quite similar to the normal Instruments page in the Courseware.

The instrument library contains 100+ rotary instruments and 20+ hand instruments. For a detailed list of all instruments please refer to the Simodont Content Catalog.

> **Tip:** Please read chapter 5.3 Instruments and instrument sets, to learn more about generic instruments sets and tips on how to use them.

Step 1 In the upper right corner you will find Step 1.

In this step you must select one of the following options:

a. Student must select correct instruments.

   The student must pick the correct instruments for the treatment. The student has a maximum number of attempts (set by teacher) to make the correct selection. The software will automatically make the correct selection once the maximum number of attempts is reached.

b. Student gets prefilled tray.

   The student will get a prefilled instrument tray, but if preferred the student is allowed to add extra instruments to the tray.

c. Student skips instrument selection.

   The student will get a prefilled instrument tray. The instrument selection page is not presented to the student.

Step 2 Right under Step 1, you will find Step 2.

Here you have the option to either:

a. Choose a predefined instrument set.

   From the “Set” tab a set can be selected. You can still make adjustments (add or remove instruments) at this point, but please know that this makes the instrument set ‘case specific’ and not generic.

b. Create a case specific instrument set.

   From the “Burs” and “Hand instruments” tabs, drag and drop or click the instruments to the “mandatory”, “optional” and “incorrect” sections.

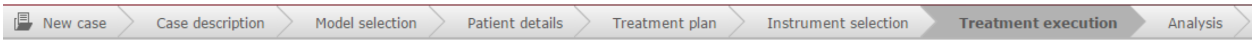
Except for the “Student skips instrument selection“-mode, all instruments in one of the three sections are presented to the student on the instruments tray in the instrument selection step.

The student has to at least pick the instruments that are labeled “Mandatory” and additionally could pick instruments that are labeled “Optional”.

If a student picks any instrument that is labeled “Incorrect” the student will be notified that the selection is incorrect and has to try again.

Users will receive a pop-up to confirm their action when trying to replace or add instruments to or from an instrument set in the case editor. This will prevent accidental instrument changes.

Treatment execution - [mandatory]



Simulator View

The simulator view shows a preview of the situation in the simulator

Zoom

Use the three Zoom sliders to set the default start zoom of the model and the minimum and maximum zoom allowed during treatment

Translations

Use the three Left – Right sliders and Back – Front sliders to set the default start position of the model and the maximum translations allowed during treatment (in mm). The translations are actively limited when setting the Min and Max value, such that it is clear to see what the active work area will be.

Use the Left-handed and Right-handed toggle buttons to set different start, minimum and maximum values for left- and right-handed users.

Rotation

Use the X, Y and Z sliders to set the default start orientation of the model (in degrees).

Use the Left-handed and Right-handed toggle buttons to set different start, minimum and maximum values for left- and right-handed users.

Limit rotations

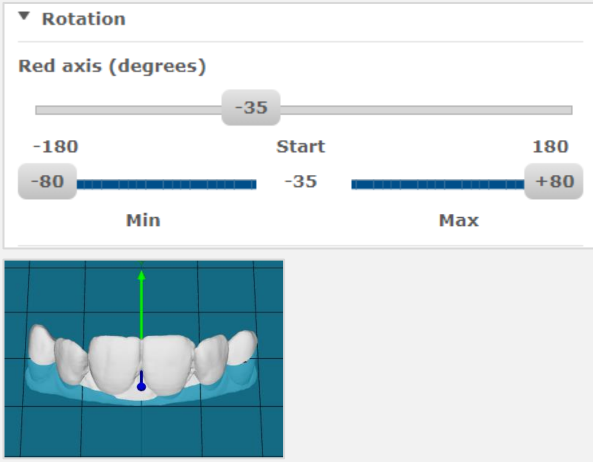
You can enable this option if you want to limit the ability to rotate the model on the Simodont. You can set the model to be completely fixated in one orientation or allow for a certain range of motion. By default, this option is turned off, but when it is enabled, two extra sliders will appear just below each main rotation slider.

Step 1: Important to understand is that you should first set the models start orientation using the large slider bars for each individual axis. Drag the slider until the model has the desired start orientation.

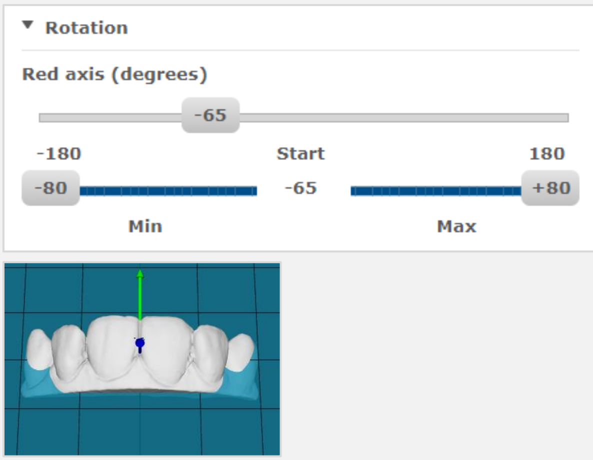
Step 2: Secondly you determine how much rotation you want to allow for the model. Use the two smaller sliders per axis to set the allowed rotation on top of the start orientation of the model. Please be aware that there is no visible representation of the allowed rotation in the viewer.

Tip: To get an idea how far the model will rotate with the determined limits, you could use the following trick. Write down your start value and then drag the main slider to the left until the desired limit is reached. Write down the numbers for this limit. Drag the slider to the right until the desired limit in that direction. Write down the numbers for this limit. Set the slider back to the desired start value and set the limit sliders to the additional numbers found.

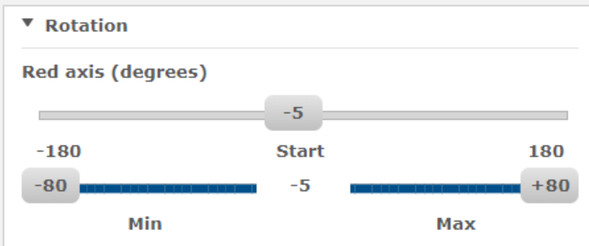
See also the following example:

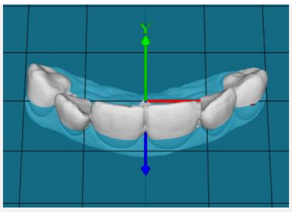


Example: The desired start orientation at -35 degrees

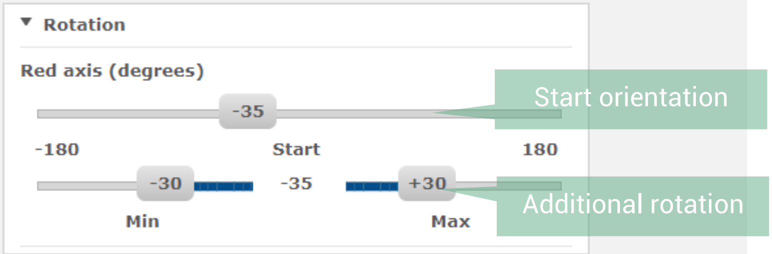


Example: left limit at -65 degrees (-30 degrees for the start position)





Example: right limit at -5 degrees (+30 degrees from the start position)



Final settings: The start is back to -35 degrees and the min and max limits at resp. -30 and +30 degrees.

In the example above, the model is rotated -35 degrees around the red axis for the default start position. This is how the model will turn up when starting the case in the Simodont.

On top of this start position, the model is allowed to rotate 30 degrees in both directions and therefore the limiter sliders are set to – 30 and +30 degrees.

Simulator Settings

The Simulator settings give you the possibility to customize which options you have available during the treatment.

Mirror

Enable this option to show the mirror during the treatment.

Caries detector (only cariology case)

Enable this option to have the caries detector available during treatment.

Calculus detector (only periodontics case)

Enable this option to have the calculus detector available during treatment.

Restart attempt

Enable this option to show the restart treatment button during treatment on the Simodont.

Note! Please be aware that restarting the treatment is not registered as a new attempt! Keep this in mind when you have set a maximum number of attempts for the case.

Irrigation (only

Enable this option to show the irrigation button during treatment on the

endodontics case)	Simodont. Students will press the Irrigation button to remove the red color from the pulp chamber in tooth models.
Semi-transparent tooth	Enable this option to show the semi-transparent tooth button during treatment on the Simodont. This allows students to make the main tooth model semi-transparent. In the semi-transparent state of the tooth, inner structures such as the pulp chamber and caries become visible. This option could be useful for cariology or endodontic cases.
Save/Load snapshot	Enable this option to allow students to save and load snapshots during treatment.

> **Note!** For exams, it could be desired to allow loading of snapshots, but only with teacher approval. Teacher approval for loading snapshots is controlled at course level. Please look for the ‘Teacher Authentication’ checkbox when editing the course.

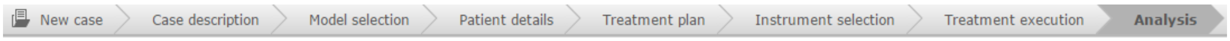
Max nr. of snapshots	This is where you set the maximum number of snapshots a student is allowed to take during treatment. Please note that these snapshots are temporarily stored on the Simodont during the session. Only the final state (snapshot) plus snapshots linked to predefined stages are stored on the server at case submit.
Target in tooth display	Enable this option if you want the target and leeway zones in a target in tooth model to become visible to the student in the Simodont. A special view option will be shown in the treatment execution page that enables the student to toggle the target and leeway zone-colors on and off. If you want the statistics and scoring available for the teacher only, then make sure to enable the option “Hide tooth segment statistic during treatment execution” on the Analysis page of the case wizard.
Tooth segments visible by default	This option is linked to the previous one ‘Target in tooth display’. Enable this option if you want the target and leeway zones to be visible for a student directly at the start of the exercise on the Simodont. Having this option off, will hide the zones, but a view option to make them visible is available for the student.

Real time Statistics

Enable the real time statistics option to be able to select model segments from the list of segments for real time statistics per segment during treatment. The segments you select will appear on the Analysis tab, such that you can set the treatment specifics per segment.

It is now possible to change the order in which segments appear in the Simodont. Each segment shows a ‘move up’ and ‘move down’ button to change the order in which they appear.

Analysis – [optional]



This page contains four different assessments.

- Treatment statistics
- Periodontics settings
- Treatment Plan Assessment
- Self-Assessment Rubric (select assessment sheet and assessment set)

The different assessment methods are complementary, making it possible to use them next to each other within one case. **Please refer to chapter 5.2 - Assessment methods** - for more information on each method.

Dental Anatomy Case wizard

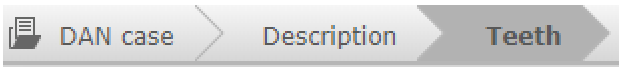
Dental Anatomy Step 1: Description

This page is mandatory. The information entered in this page is shown to the student on the first page 'the Description' page.

Case details

Name:	This is the name of the case. The case name must be unique.
Type:	This is default filled in as Dental Anatomy.
Author:	The author is automatically assigned as being the user who started the creation of the case (revision).
Max attempts:	This is the maximum number of attempts the student will get. If the maximum has been reached, the student will not be able to make an attempt at this case again. If you do not want to you a limit, select 'no limit'.
Case content description:	Here a default explanation of the student workflow for the case is given in each of the available languages. If desired, this description can be customized per language.

Dental Anatomy Step 2: Teeth

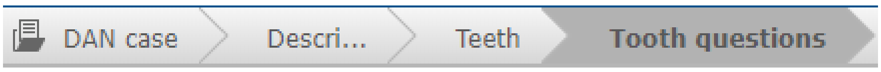


This step in 'case creation' for a Dental Anatomy case is mandatory. The student will not see this page on the Simodont. Multiple models can be added to allow a pool of teeth that the student has to choose from.

When selecting a model, the edit button of the model becomes available for this model . When clicking this button it opens a model specific Tooth questions page.

Filters:	Use the filter or search field to find the models suitable for your case. Either filter on tooth number (ISO tooth numbering system), creation or modification date or search on model name using the search field.

Dental Anatomy Step 3: Tooth questions



This step in 'case creation' is merely informative as it holds various predefined questions for the chosen model. However, it can be expanded when desired.

Details:	Model name and Tooth number are specified.

Tooth Media: Here, the available pictures of the model are shown. The student will see all available pictures of the tooth on the Simodont.

Question details: These are the questions that the student must answer. There are predefined questions which guide the student to the identification of the correct tooth number, but the feedback text that is given when the student selects an answer can be customized and an image can be added to this feedback.

Additional questions can be created by clicking the Add button next to the question counter. This button will appear when the last of the predefined questions is selected.

Use the Add button below the available answers to add an answer to the list.

Use the Bin button if you want to delete an additional question.

The questions can be formulated in each available language. If the question is available for a language it is shown via a checkmark on the tab.

Question counter and Add question button

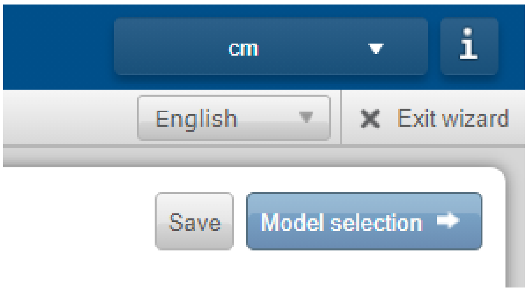
Translation of the question is available

Case content language

The Courseware supports the creation of cases in different languages. Within the same case it is possible to add multiple different languages. This makes it possible for Simodont users to switch to another preferred language.

When you are inside the case creation wizard in the Courseware, you will see a language selector in the upper right corner of the wizard. With this button it is possible to switch to another language. Only languages that are enabled for your system by your administrator will be available on this list.

Please know that the case wizard by default starts with the language that is selected as 'default language' (Settings page) for your system.

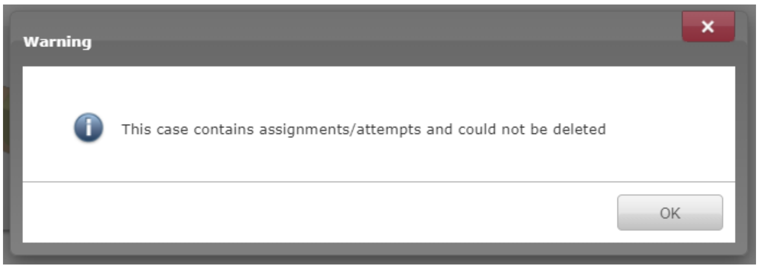


My case is empty!

It may happen that it seems that the case that you created is empty. When this happens, please check if the correct language is selected at the top and check if there are other languages that do have the case content that you were looking for. This problem can occur when the text was accidentally added under the wrong language. If this happened in one of your cases and manual correction is too much effort due to the size of the case, please contact us at support@nissin-dental.nl such that we can help you to rectify this.

Delete case

Please be aware that only Simodont users with Administrator rights can delete a case that already has student attempts. When a Simodont user with Teacher rights tries to delete a case that already has attempts, he/she will get the following pop-up.

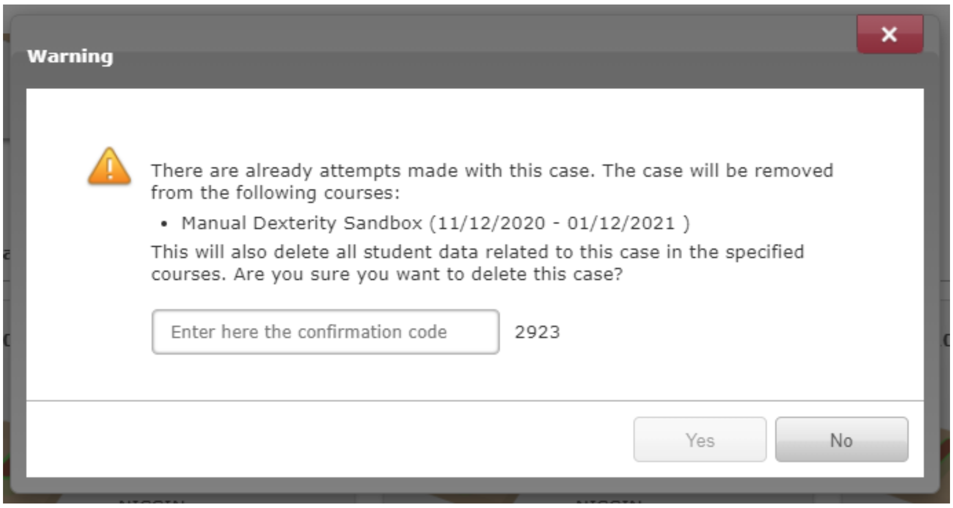


Note! Please be aware that when deleting a case, all student results related to that particular case will also be deleted from the database. This action cannot be undone!

For Administrator users:

1. In the Courseware go to the Case page.
2. Select the case of concern.
3. In the Case Details pop up, click ‘Delete’.
4. Enter the confirmation code presented in the warning and click ‘Yes’.

   The case is now deleted.



Case deletion

Edit case

In order to edit a case, click on the case tile and click ‘Edit’.

Case editing is only allowed when your institute is the original owner of the case. If your institute is not the owner of the case, but you still want to use this case as a base for your own case, simply create a ‘Copy’ of the case.

Publish case

A case has one of the following states:

1. ‘new/in progress’
2. ‘published’

Important to know is:

- As long as a case is not published, it will not be ready to be planned in a course. Unpublished cases are not shown in the curriculum planner
- Every time you publish a case, the latest revision of that case is made official and becomes locked. When you want to make changes after publication of a case, the system automatically creates a new revision for that case. Hereby the original revision of the case remains untouched. This is to make sure that both old courses are not changed, and case revisions that are already used in running courses do not change halfway.

Publishing cases is done either:

a. in the final stage of case creation. At the end of the case wizard, you are asked if you want to ‘Save and Publish’ the case or only ‘Save’ the case.

b. by clicking on a case tile from the case overview. The pop-up will show you the available options. Case publication is one of these options.

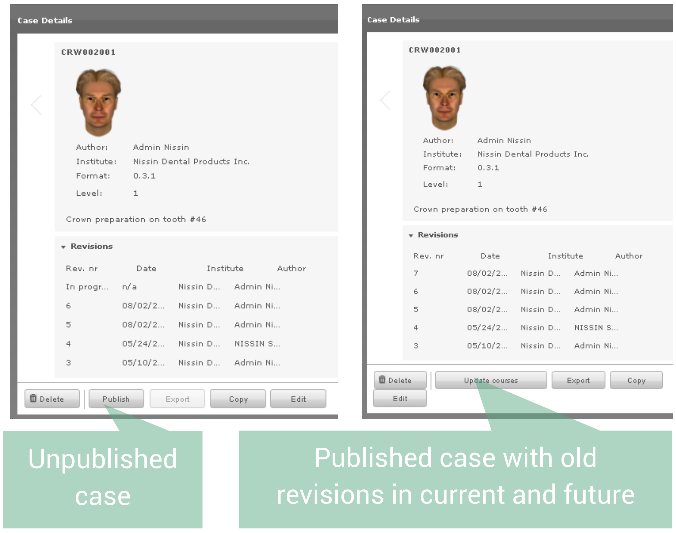
Note! Please be aware that Publishing a case can only be done by a user with Administrator rights. Creating and saving a case can be done by a user with Teacher role or Administrator role.

Updating cases to the latest revision can be done either:

a. directly during publishing. Use the checkbox to enable the update

b. by clicking on a case tile from the case overview. If there are any old revisions of the case in current or future courses. the pop-up will show an Update courses button.

In both cases a list of all current and future courses containing this case is shown and for each course it can be selected if the revision should be updated or not.



Case details window

Copy case

In order to create a copy of a case, click on the case tile and click ‘Copy’.

A whole new case is created based on the content of the original case. For this copy you are free to make any changes without violating the original case. The original owner of the case is still visible in the case info pop-up.

Export case

Sharing and transferring cases from one system to another is possible using the case import and export functionality.

In order to export a case:

1. In the Courseware, go to the cases page
2. From the case overview, select a case
3. In the Case details pop-up, click ‘Export’.

   All case content (case information, model, instruments etcetera) is packed together in a .tgz file and placed in the ‘Downloads’ folder.

Export of a case is only allowed when the case has the status ‘published’. If your case is still ‘in progress’, make sure to first finish the case, save and publish it.

The exported .tgz file can be fed directly into the Courseware through ‘import case’ in the Cases page.

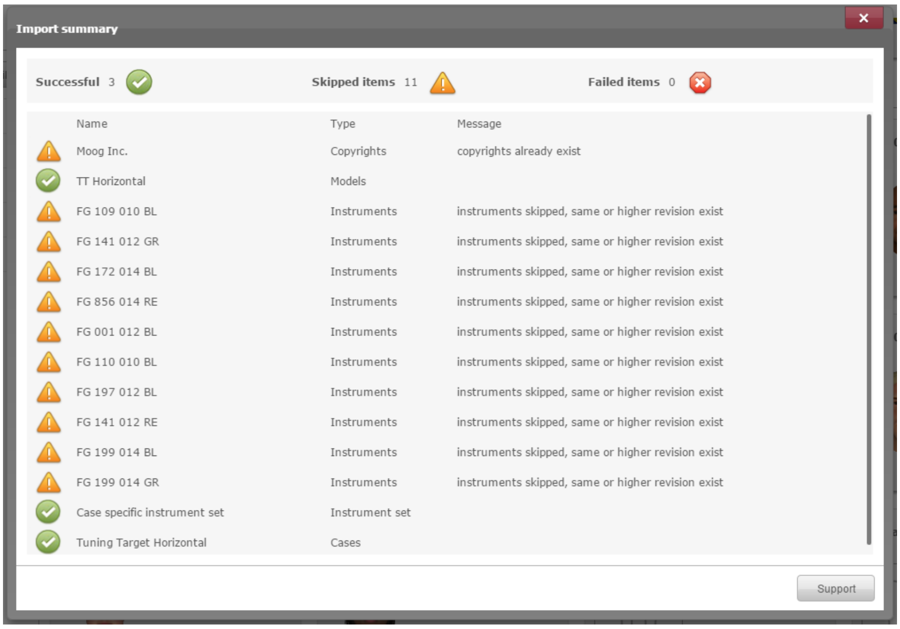
Import case

In order to import a case:

1. In the Courseware, go to the Cases page
2. Click 'Import case'
3. Select the case package file (.tgz file)
4. Close the Import summary pop-up

At import you will be prompted with an import summary. This summary will tell you which content is successfully imported , which is skipped and for which content the import failed .

Import of content is skipped in case the content already exists on your system. This happens often when importing instruments.

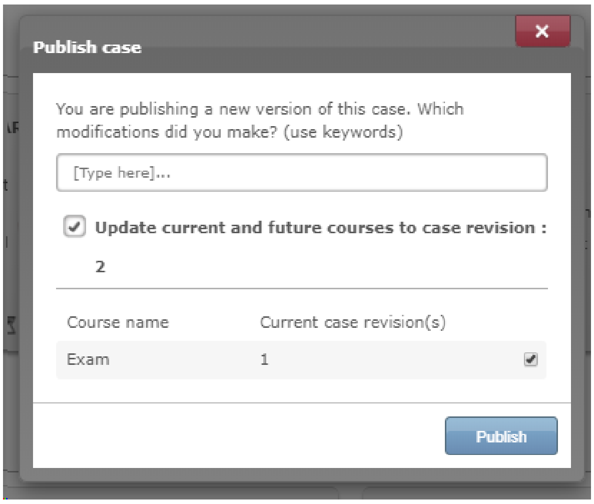


Updating a case in a course

It often happens that you would like to change a few details in a case, while this case is already being used in a planned course.
Since v4.8 it is possible to update your case and all the courses that are using this case in a few simple clicks. Updating courses is done right after publishing a new case revision or can be done at a later stage if course update needs to wait.

Updating a course right after case publication:

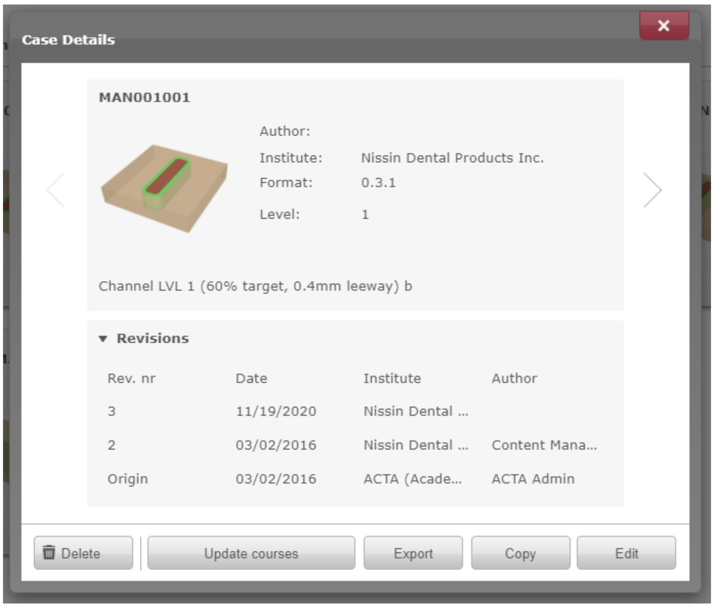
1. In the Courseware, go to the Cases page
2. Select the case you want to edit
3. Click the 'Edit' button and make the desired changes
4. Go to the Analysis page
5. Click 'Publish'
6. Enable the option "*Update current and future courses to revision: <new revision no.>*"
7. In the course list, check those courses that you would like to update with the new case revision
8. Click 'Publish'



Updating courses with an already published case:

1. In the Courseware, go to the Cases page
2. Select the case you want to update in your courses
3. Select ‘Update courses’.

   All courses that use this case will be updated to the latest case revision.



5.2. Assessment methods

By default, none of the assessment methods are enabled when creating a new case. Depending on the type of procedure, and the selected model for the case, certain assessment methods make more sense.

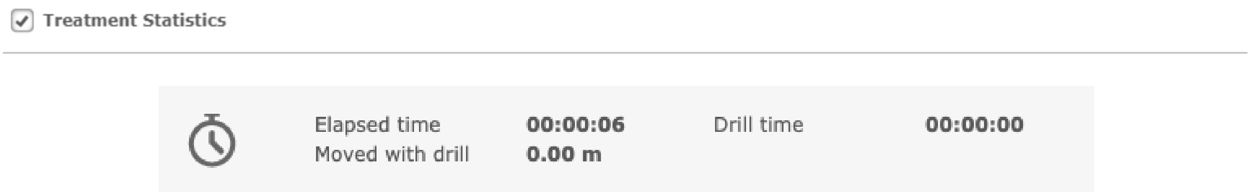
Treatment Statistics

Treatment statistics is one of the assessment methods that can be used for all types of cases and models.

Basic treatment statistics

By enabling the option 'Treatment Statistics' you activate the following basic treatment feedback parameters:

- Elapsed time — the duration of the treatment session in seconds (start to stop case)
- Drill time — the actual time the drill was actively drilling in seconds
- Moved with drill — the traveled distance of the drill in meters



Timer in the Simodont

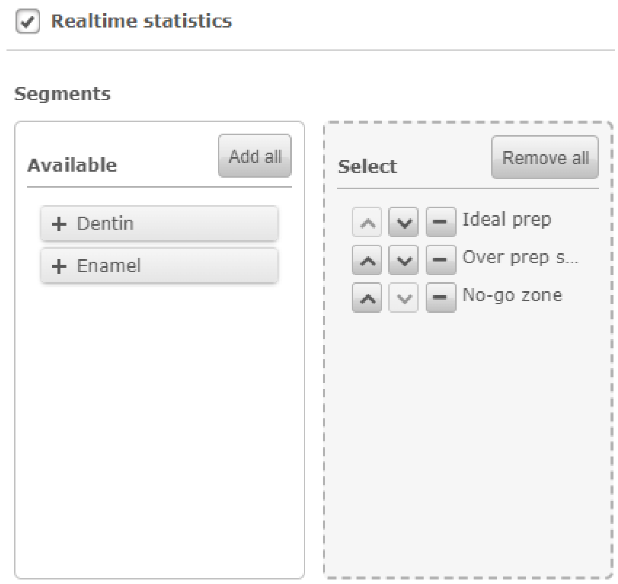
Tracking of model segment statistics & Setting up a score formula

In addition to the basic treatment statistics, it is possible to track the statistics of the model segments. In other words, these statistics will show exactly how much material is removed per segment (in percentages). These scores per segment can then be used in a formula to calculate an overall performance score.

Please be aware that the percentages are in relation to their own segment volume, and not in relation to the total model volume.

In order to use tracking of model segment statistics and automatic scoring, please do the following;

1. In the Courseware, go to the Cases page.
2. Select the case you would like to enable statistics for
3. Click Edit
4. In the Case Editor wizard, go to the Treatment Execution page
5. Enable the option 'Realtime statistics'
6. From the available segments in the model, select the segments that you would include in the score calculation / show to the student. Selected items appear in the right box.

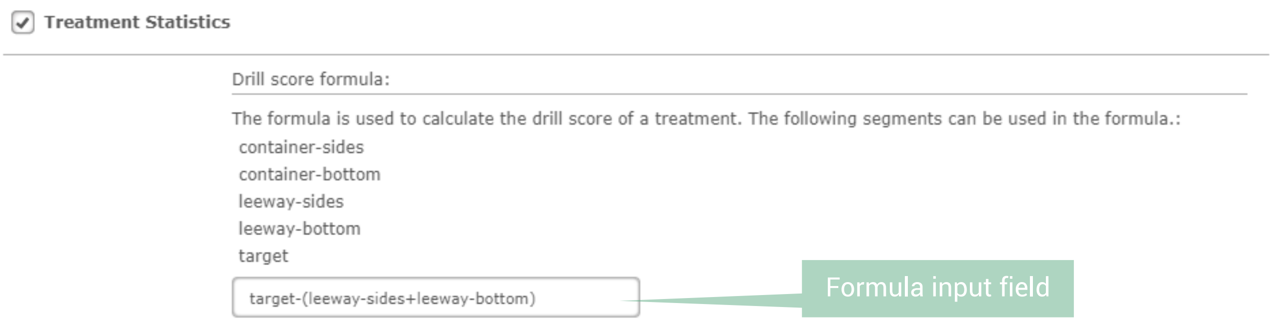


In this example, the selected model has three segments available and all of them will be used for the segment statistics and scoring.

Tip: To change the order in which the segments appear in the Simodont, use the 'move-up' and 'move-down' buttons next to the segment names.

7. Go to the Analysis page
8. Score formula: For the calculation of the score, you can enter your own formula in the formula input field. It is important though, to use the segment names exactly as they are written in the list above the formula input field. Accepted mathematical symbols are +, -, *, /, (,).

   You need at least two segments in your formula in order for the formula to work.



Tip: If you do not want to calculate a score, simply leave the Formula input field empty.

9. Set parameter tolerance: For each segment you should select either the 'required' or 'allowed' option and set a certain percentage. The meaning of both is explained here:

   Required: The student must remove at least this amount of this segment in order to pass the exercise. In general, used for segments within the ideal preparation area.

   Allowed: The student is allowed to remove up to this amount of this segment and will still pass the exercise. When he exceeds this percentage, the exercise fails.

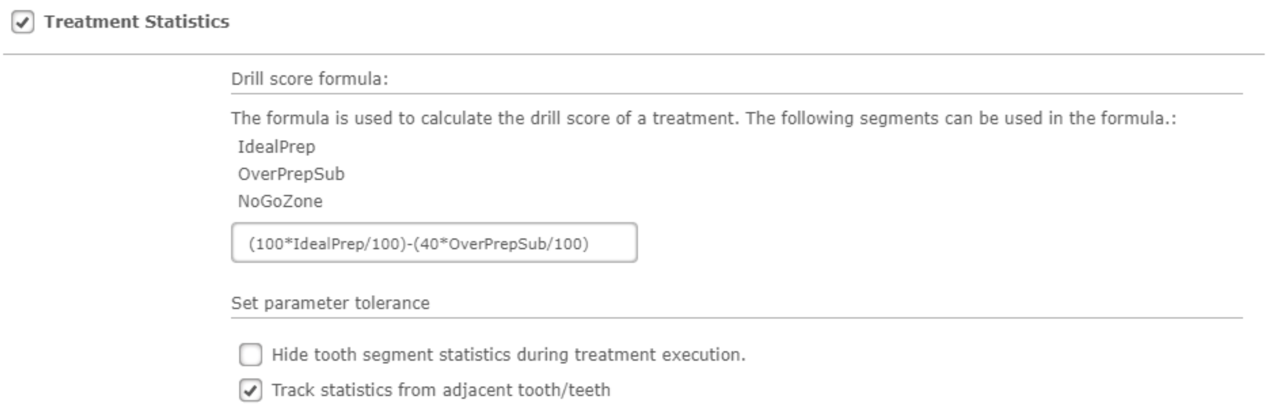
In this example;

- The student is allowed to touch the leeway segment.
- The student is not allowed to touch the container segment at all. He fails the exercise if he does.
- The student must at least remove 90% of the target segment in order to pass the exercise.

Note! It is important to know that the segment parameter tolerance settings are leading for the 'pass' or 'fail' definition of an exercise, the score is not. The score is solely an extra performance indicator to show how well the exercise was executed.

Hiding segment statistics for students

In order to hide the segment statistics for a student, please enable the option 'Hide tooth segment statistics during treatment execution'. The statistics are still active in the background and will be visible to the teacher in the evaluation page and reporting. This option can be useful for examinations.

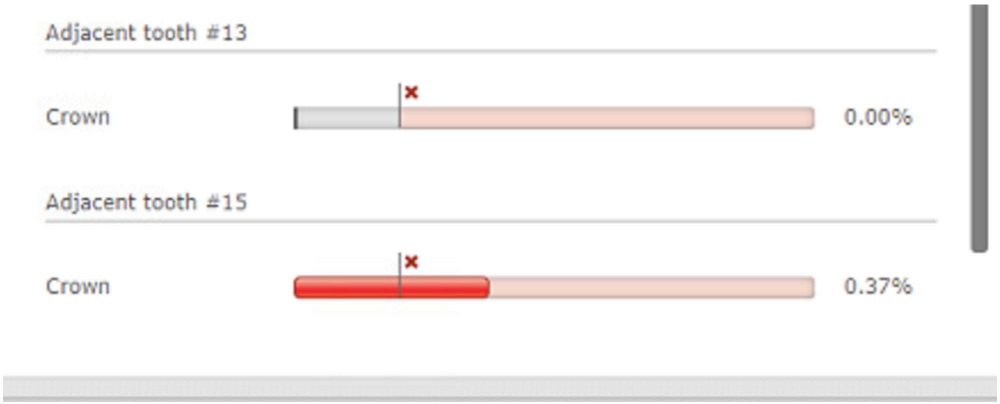


Hide statistics from students is disabled

Tracking adjacent teeth

In order to track if the adjacent teeth were touched during treatment, please enable the option 'Track statistics from adjacent teeth'.
Once enabled, it is possible to set a small tolerance (0-1%) for how much damage is still acceptable. This tolerance can be set for each adjacent tooth and is measured for the crown area of the tooth only. The root of the tooth is not taken into account. When the student is exceeding the tolerance for one of the adjacent teeth, it will result in a 'fail' status for the exercise.

Setting a tolerance for damage to adjacent teeth



Feedback shown in Simodont on adjacent tooth damage

Periodontal settings

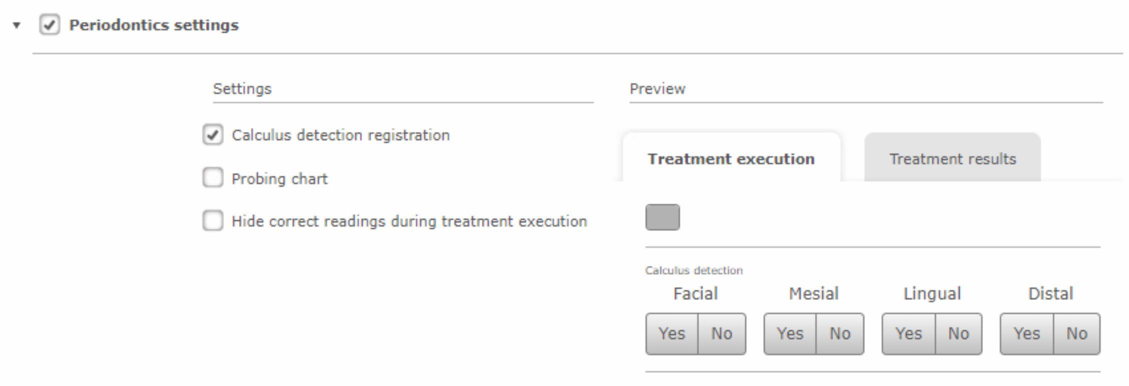
Periodontal settings can be used for Periodontics cases only.

By enabling the option ‘Periodontal Settings’ you can activate one or more of the following settings:

- Calculus detection registration
- Probing chart
- Hide correct readings during treatment execution

Calculus detection registration

To give the student the opportunity to register calculus detection results, the setting ‘Calculus detection registration’ must be enabled. The preview of this screen shows the view that will also be shown to the student on the treatment execution page on the Simodont.



Calculus detection registration is enabled

Probing chart

To give the student the opportunity to register periodontal measurement (probing) results, the setting ‘Probing chart’ must be enabled. The preview of this screen shows the view that will also be shown to the student on the treatment execution page on the Simodont.

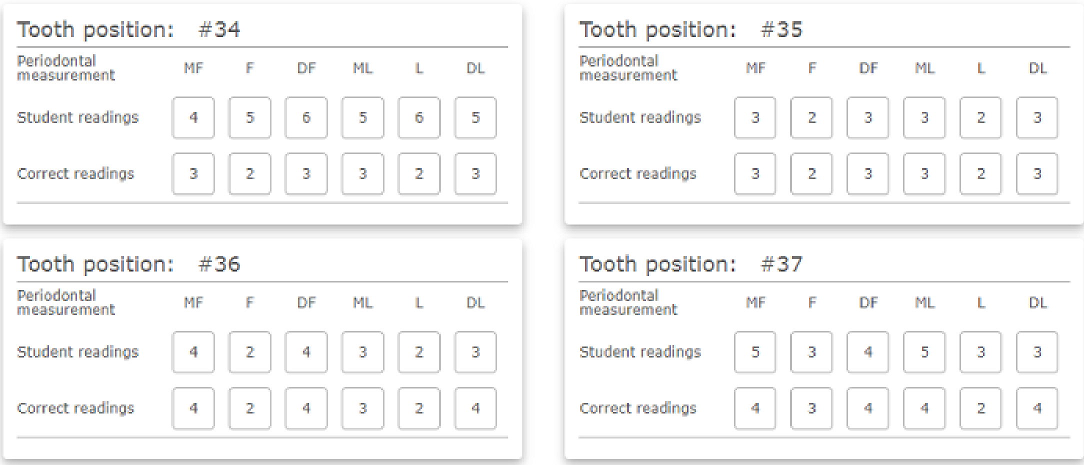
Both ‘Calculus detection registration’ and ‘Probing chart‘ can be activated at the same time.

Calculus detection registration and probing chart are both enabled

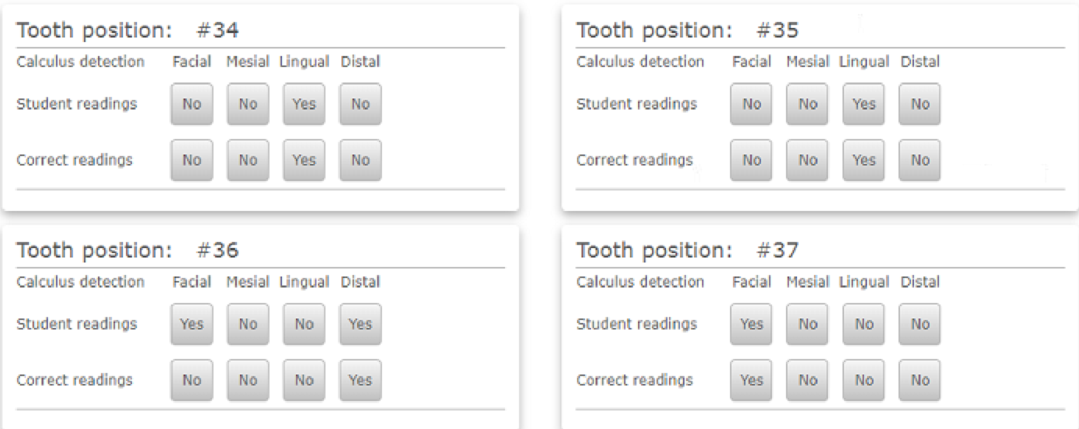
Hide correct readings during treatment execution

In order to hide the official model readings for a student, the option 'Hide correct readings during treatment execution' must be enabled. The official model reading will then not be shown to the student on the results page of the treatment execution. The official model reading will be visible to the teacher in the evaluation page and reporting. This option can be useful for exams.

By default the option is disabled. In this case, the students can compare their own readings with the official model readings on the results page.



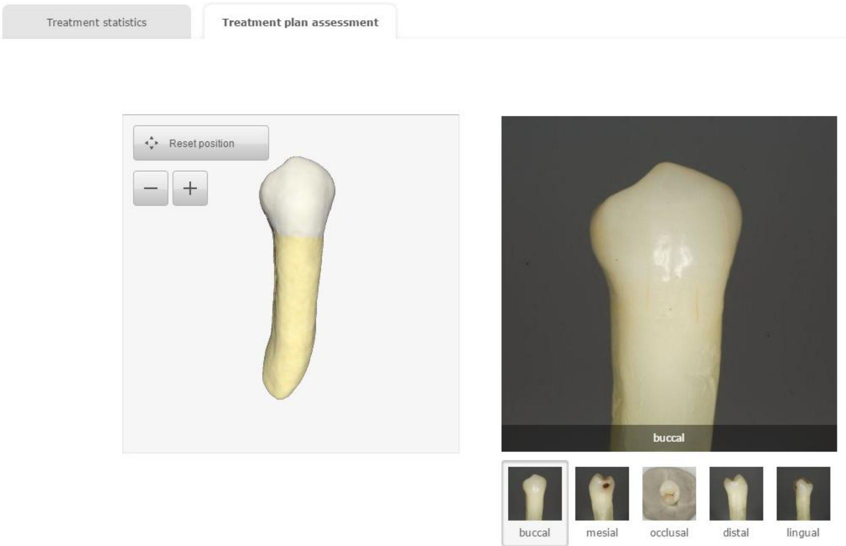
Student readings versus the official model readings for periodontal probing



Student readings versus the official model readings for calculus detection

Treatment Plan Assessment

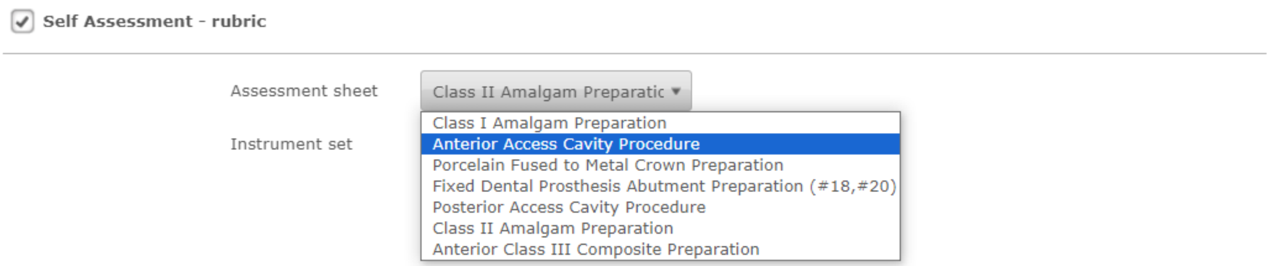
Enable this option to show the treatment plan drawings in the 'Pause and Analyze section during treatment. This allows students to compare their treatment plan drawings with their actual preparation while in treatment.



Self-Assessment Rubric

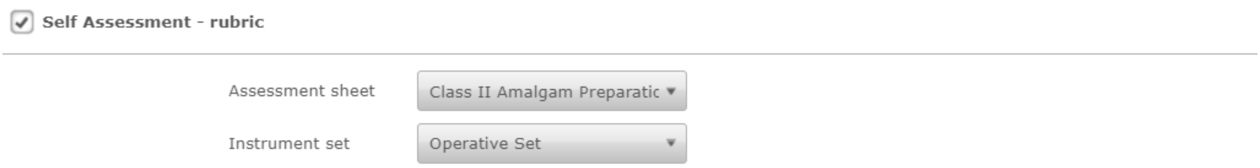
Enable this option to show the self-assessment matrix that students need to fill in during treatment.

The Simodont comes with a set of example rubrics. Please refer to the Content Catalog for an extensive description of the contents of the different rubrics.



Self-Assessment – rubric: available rubrics

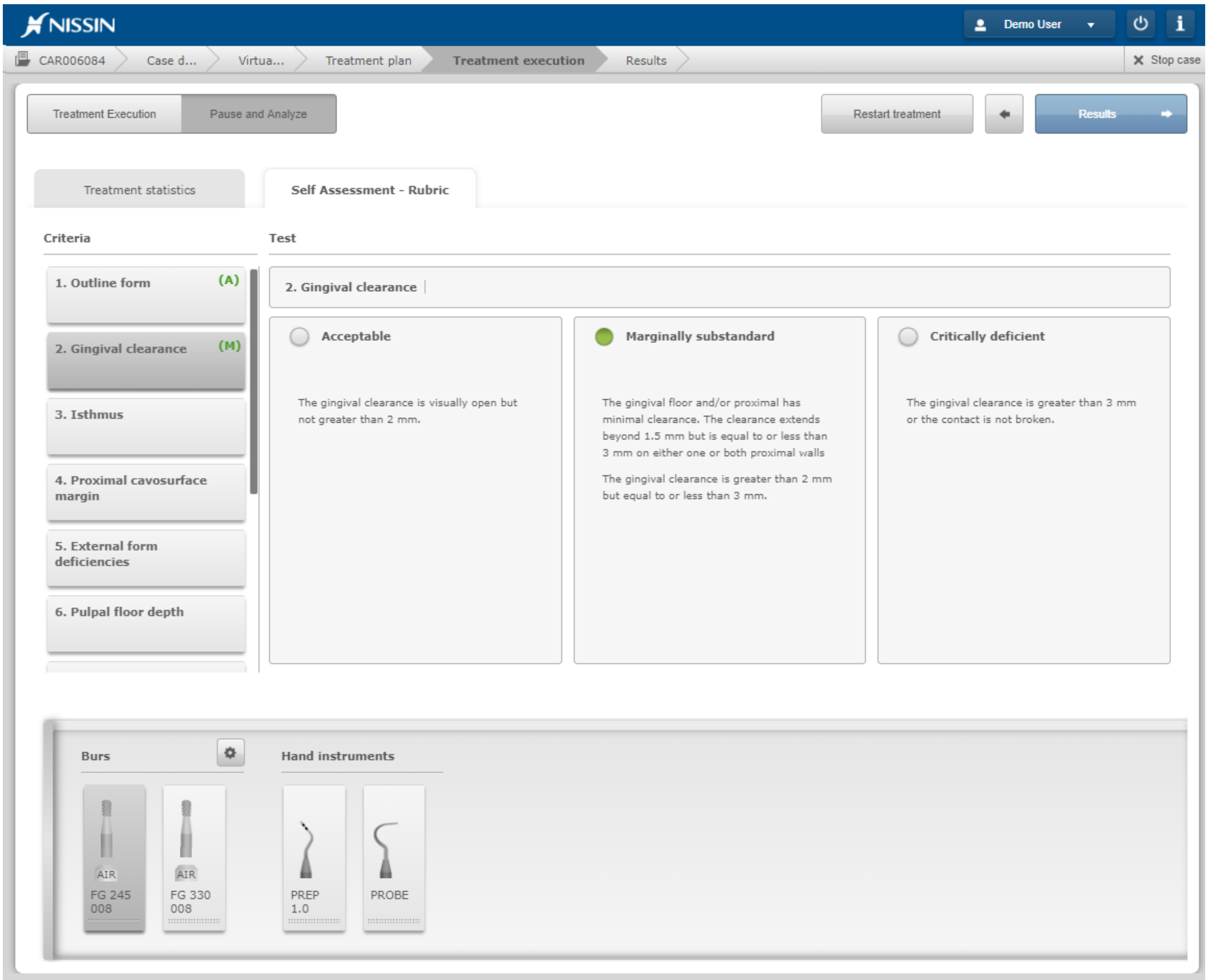
An instrument set must be selected such that the student can use the hand instruments from this set during the assessment.



Self-Assessment – rubric: selection of instrument set

With the rubric feature, teachers are able to review the scoring in the Evaluation Environment and can enter their scoring next to the student scoring.

On the Simodont, the rubric is shown in the Pause and Analyze section.



In case you want to implement your own rubric, please contact NISSIN. We are able to remotely install a custom rubric.

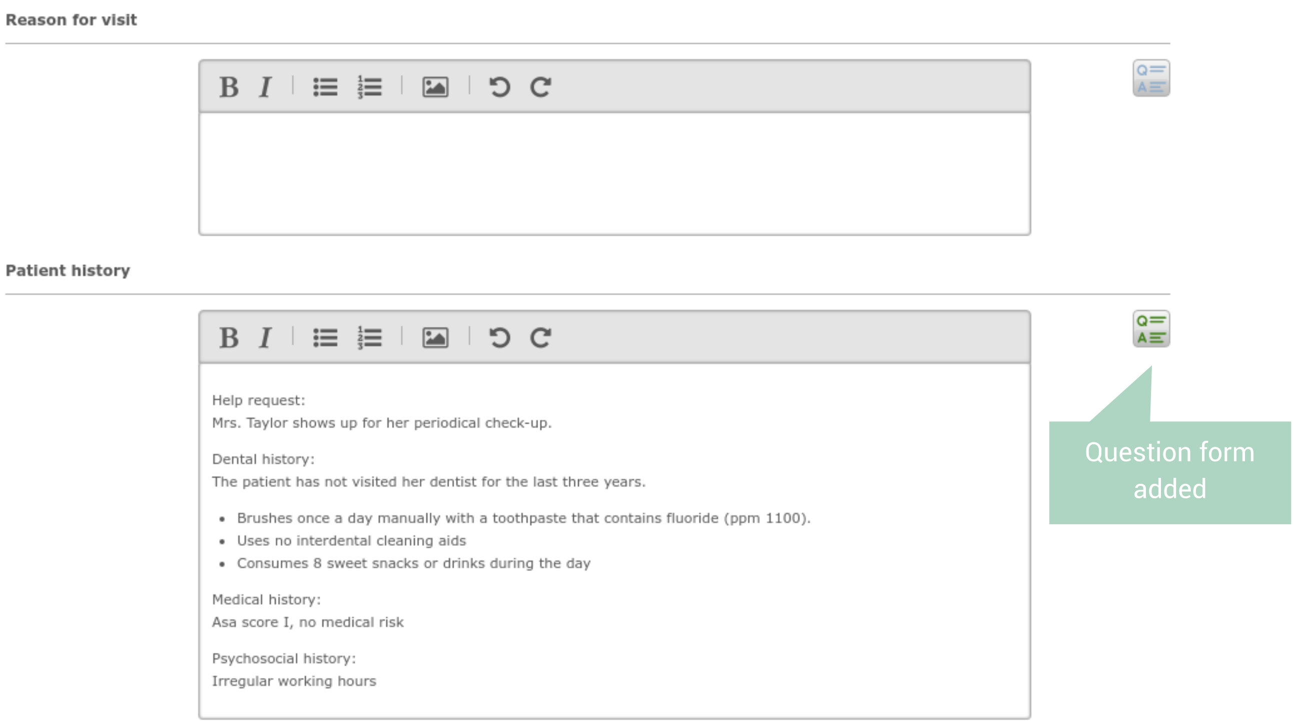
Question forms

Since version v4.8 of the Simodont Courseware it is possible to add question forms at several locations in a case. At this moment it is possible to add question forms for the individual sections on the Patient details and the Treatment plan page.

Location of the question forms

You will recognize the locations where you can add a question form by the Q&A button in the Case Wizard.

When a question form is added/active the question mark changes to green.



Blue: no question from added yet

Green: Question form was added for this section

The locations of the question forms are shown to the student in a similar way. They are also shown by the Q&A button. However, the student will only see these buttons when a question form was added to that particular section.

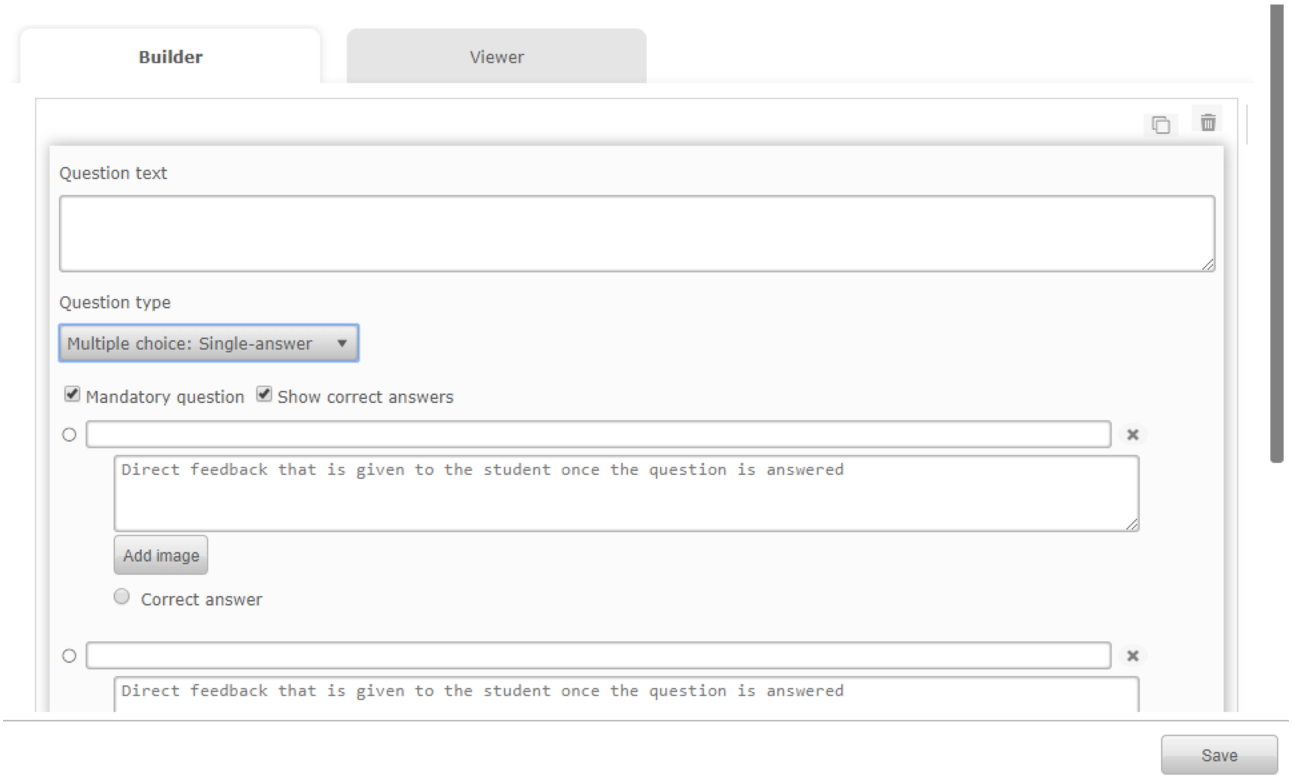
Type of questions

The following types of questions are available in the question form:

Open:	An open question cannot be answered with a simple 'Yes' or 'No' or other static response.
Multiple choice - single answer:	For this type of question, the possible answers are given to the student. Only one answer is the correct answer.
Multiple choice - multiple answer:	For this type of question, the possible answers are given to the student. Multiple answers can be assigned to be correct.

Question form Builder and Viewer

The question form contains a Builder and a Viewer section. In the Builder, questions can be added to the form. The Viewer allows the teacher to preview the form as it will be shown to the students when working on the Simodont.



Multiple choice question form Builder

Question form components

The Simodont Courseware supports the following components in a question form:

Question text:	Here the question itself is entered.
Question type:	Choose here the type of question.
Mandatory question:	Select this option if the student is not allowed to continue to the treatment before answering this question.
Show correct answers:	For multiple choice questions it is possible to give the student direct feedback or information on a selected answer while answering the questions on the Simodont. In order for that to work, the teacher must enter a text in the direct feedback box of the specific answer. When this option is selected, this text is shown to the student immediately when the student selects the answer.
Correct answer (for multiple choice):	Check this box to indicate the correct answer(s) for a multiple-choice question.
Add question:	More questions can be added to the form.
Add image:	Images and an image description can be added to the form. They can be aligned left, center or right using the alignment buttons that become

	available when editing the image. 
Add paragraph:	A paragraph component can be added to add for example extra instructional information, references or image labels.

To rearrange components within the form, click the up/down arrow that appears on the upper right corner when editing the component.

To copy a component from the form, click the copy icon that appears on the top right corner when editing the component.

To delete a component from the form, click the bin that appears on the upper right corner when editing the component.

Rearrange, copy or delete components

Reporting on question forms

It is possible to export the question form data from a case to a CSV file, which can be imported in Open Office or Excel. For more information, please refer to Creating a Course data export.

5.3. Instruments and instrument sets

The instruments page is used to manage your instruments and instrument sets. This is the place where you compose your own instruments sets.

The instrument library contains 70+ rotary instruments and several hand instruments. For a detailed list of all instruments please refer to the Simodont Content Catalog.

Generic versus case specific instrument sets

The software distinguishes two types of instrument sets: a generic (or global) set and a case specific instrument set.

Generic instrument set	The generic or 'global' instrument sets are the sets that are visible at the Instruments page, under the Sets tab.
Case specific instrument set	The case specific instrument sets are sets that are created at case level. You would typically use this only when a generic instrument set is not sufficient for your case, and you need specific changes only for this particular case.

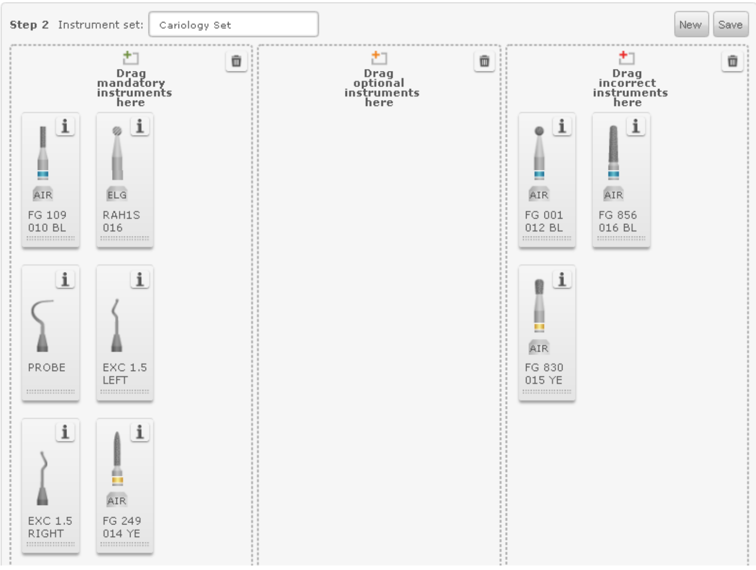
Tip: It is best to minimize the use of case specific instrument sets. Typically instrument sets are institute specific but are pretty much fixed per procedure. Try to first customize and create new global sets and use these when building your cases. Editing a generic instrument set will affect all cases that use this instrument set. This way you will only need to change the global set, in order to change the collection of instruments in a collection of cases.

Instrument selection as part of the exercise

Instead of just offering the right collection of instruments for a certain procedure to a student, it is also possible to make the instrument selection an active task for the student, as part of the thinking process in the treatment preparation phase of the exercise.

When you are composing an instrument set, you will see three sections in which you can drop the instruments. These sections allow you to categorize the selection of instruments in to:

Mandatory instruments	Drop all instruments that are mandatory for the procedure in this section.
Optional instruments	Drop all instruments that are not mandatory, however still allowed for the procedure in this section.
Incorrect instruments	Drop all instruments that are not allowed for the procedure but that you want to offer on the selection tray as part of the instrument selection exercise in this section.



Only instruments part of one of these sections are presented to the student within the exercise.

Finding your instruments (instrument specifics)

The instrument library contains over 70 different virtual instruments, and new instruments are added on customer request. To find the rotary instruments suitable for your procedure you can use the following instrument filters:

Filter	Description	Options
Diameter	Head size of the bur/ diameter.	*Many sizes available*
Grit/Blade	Coarseness of diamond	Yellow = extra fine
		Red = fine
		Blue = medium
		Green = course
	Blade configuration of hard steel/carbide*	*Many shapes available*
Shape	Shape of drilling part of the bur.	*Many shapes available*
Shank	Shank type	RA = Right Angle
		RAL = Right Angle long
		FG = Friction Grip
Material	Material of drilling part of the bur	Diamond, Tungsten carbide, hard steel
Hand piece	Type of hand piece	AIR = air rotor (turbine)
		ELG = Electrical Green (speed reducing)
		ELR = Electrical Red (speed increasing)
		USS = Ultrasonic Scaler

Tip: Use the button to see detailed information of the selected instrument.

Tip: Please refer to the latest Content Catalog for detailed information on all available instruments.

Creating a new instrument set

There are two ways to create a new instrument set.

Using an empty tray:

1. In the Courseware, go to the Instruments page.
2. Click ‘New’.
3. Enter a name.

4. From the “Burs” and/or “Hand instruments“ tab drag and drop the individual instruments to the sections ‘mandatory’, ‘optional’ and ‘incorrect’ on the right.
5. Click ‘Save’.

Copy an existing set and adjust

1. In the Courseware, go to the Instruments page and select the “Set” tab.
2. Click on the info button of an instrument set i.
3. Click ‘Copy’.
4. Enter a new name.
5. Make the preferred changes.
6. Click ‘Save’.

Editing an instrument set

When you edit an instrument set the changes will affect all cases that are using this set. To edit a set:

1. In the Courseware, go to the Instruments page.
2. Go to “Set“ tab.
3. Select the set you want to edit.
4. From the “Burs” and “Hand instruments” tab. Drag and drop your preferred instruments into the sections ‘mandatory’, ‘optional’ and ‘incorrect’ on the right and remove you do not want to use by dragging them from right to left.
5. Click ‘Save’

Note! Most cases that were provided with the system make use of one of the predefined instrument sets. Editing these instrument sets thus also affects all cases that use this instrument set.

For this reason, it can be interesting to customize the predefined instrument sets according to your own preferences. This way all cases will make use of your preferred instruments.

Import instrument

In order to import an instrument:

1. In the Courseware, go to the Instruments page.
2. Click ‘Import instrument’.
3. Select the instrument package. (.tgz file)
4. Close the Import summary pop-up.

Instruments are created and provided by NISSIN. In case you have requested a new instrument for your library, NISSIN will provide this new instrument via an import package. For most rotary instruments an import package is sufficient to add the instrument. Adding new hand instruments often also requires a software update.

Import instrument set

In order to import an instrument set:

1. In the Courseware, go to the Instruments page.
2. Click ‘Import set’.
3. Select the instrument set package. (.tgz file)
4. Close the Import summary pop-up.

Export instrument

1. In the Courseware, go to the Instruments page.
2. Click on the “Burs” or “Hand instruments” tab.
3. Click on the info button of an instrument i.
4. Click ‘Export’.
5. A .tgz file is saved in the downloads folder.

Export instrument set

1. In the Courseware, go to the Instruments page and click on the "Set" tab.
2. Click on the info button of an instrument set i.
3. Click ‘Export’.
4. A .tgz file is saved in the downloads folder.

Delete instrument set

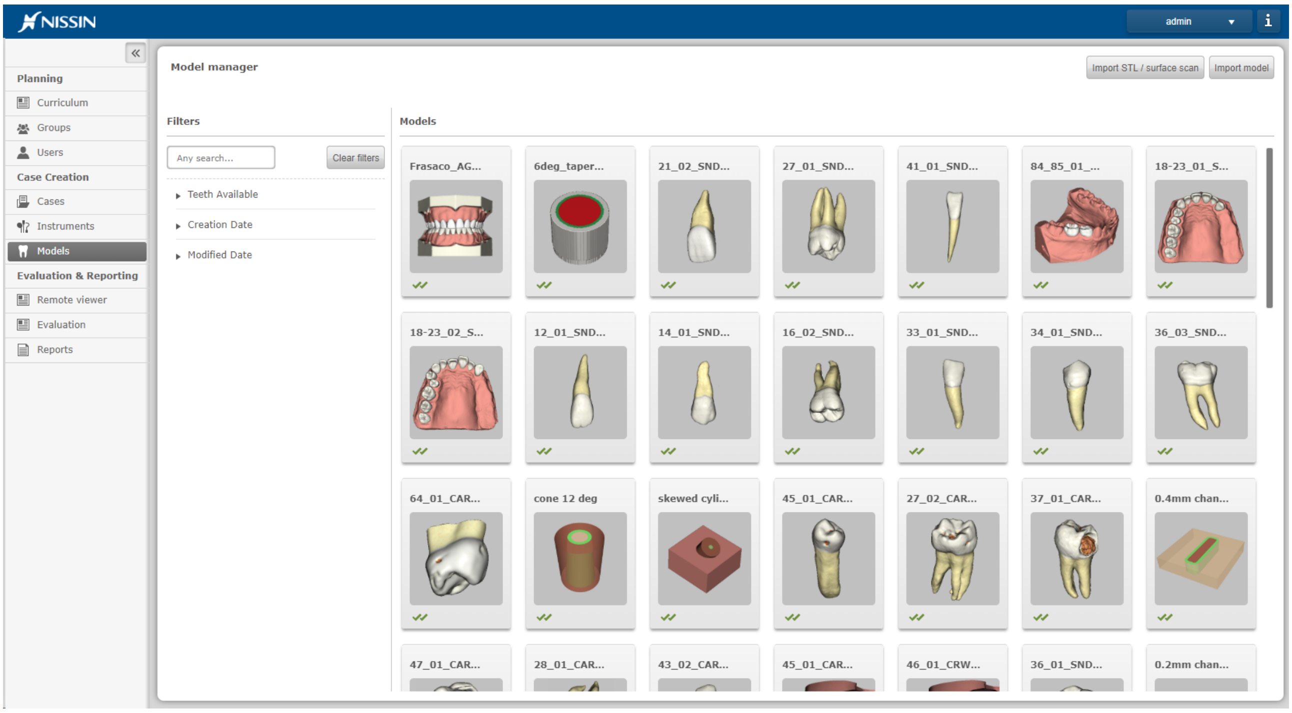
1. In the Courseware, go to the Instruments page and click on the "Set" tab.
2. Click on the info button of an instrument set i.
3. Click ‘Delete’.

An instrument set can only be deleted when it is not used in any case.

5.4. Models

The Models page shows an overview of the model library. At the Models page you manage (edit, add and delete) models from the model library. There are over 60 different models available and new models are released regularly.

Since v4.8 it is possible to also import your STL intra oral surface scans into the generic model library. This is in addition to uploading STL intra oral scans to a single user. By adding STLs to the generic model library, you are able to build cases based on the STL scan and provide them to a whole group of users in one go (by planning the case in a course).



Tip: Please refer to the latest Content Catalog for detailed information on all available models.

The model library contains two different types of models:

- Manual dexterity models; abstract shaped practice blocks
- Tooth models; created based on scan data from real extracted teeth

The available editing options per model depend on the type of model.

Available model actions are:

- Edit model
- Publish model
- Copy model
- Delete model
- Export model
- Import model
- Import STL

Edit model

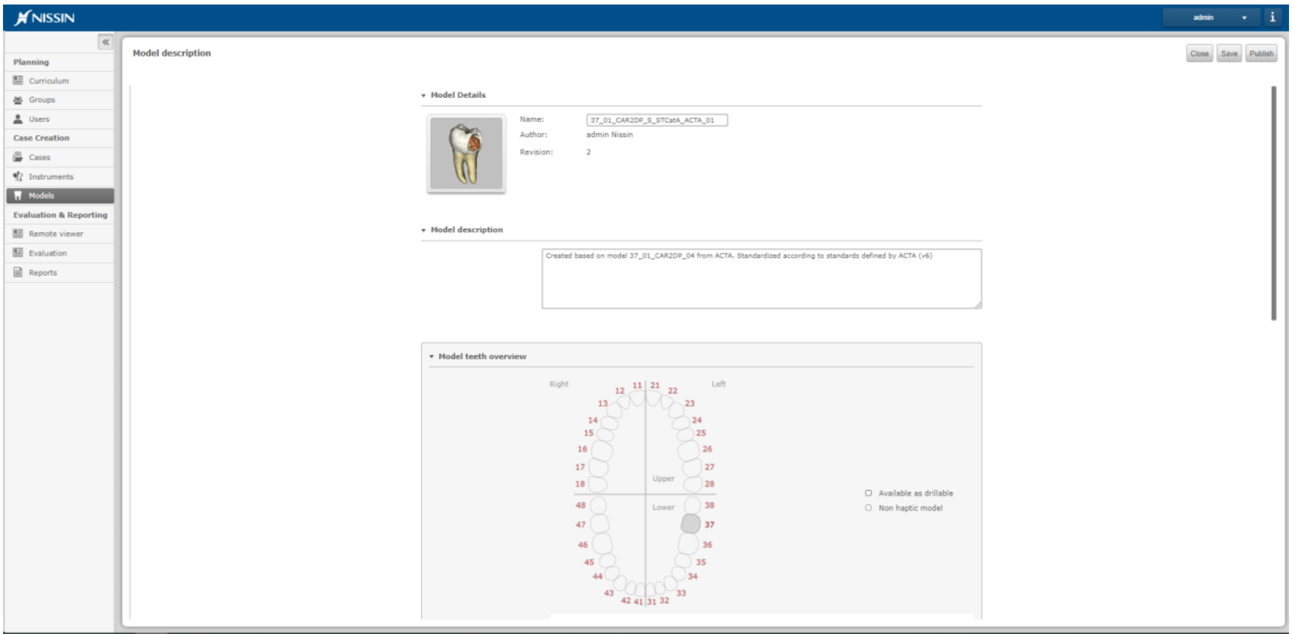
Editing of models is only possible for models that are originally owned by your institute.

Models that are not published will not be shown in the case wizard and therefore are not selectable for case creation.

In order to edit a model;

1. In the Courseware, go to the Models page.
2. Select a model.
3. In the model details pop-up, click ‘Edit’.

   The model editor opens up.
4. In case of a tooth model, select a tooth from the teeth overview. The tooth details for the selected tooth become editable.
5. Make the preferred changes.
6. Save
7. Publish.

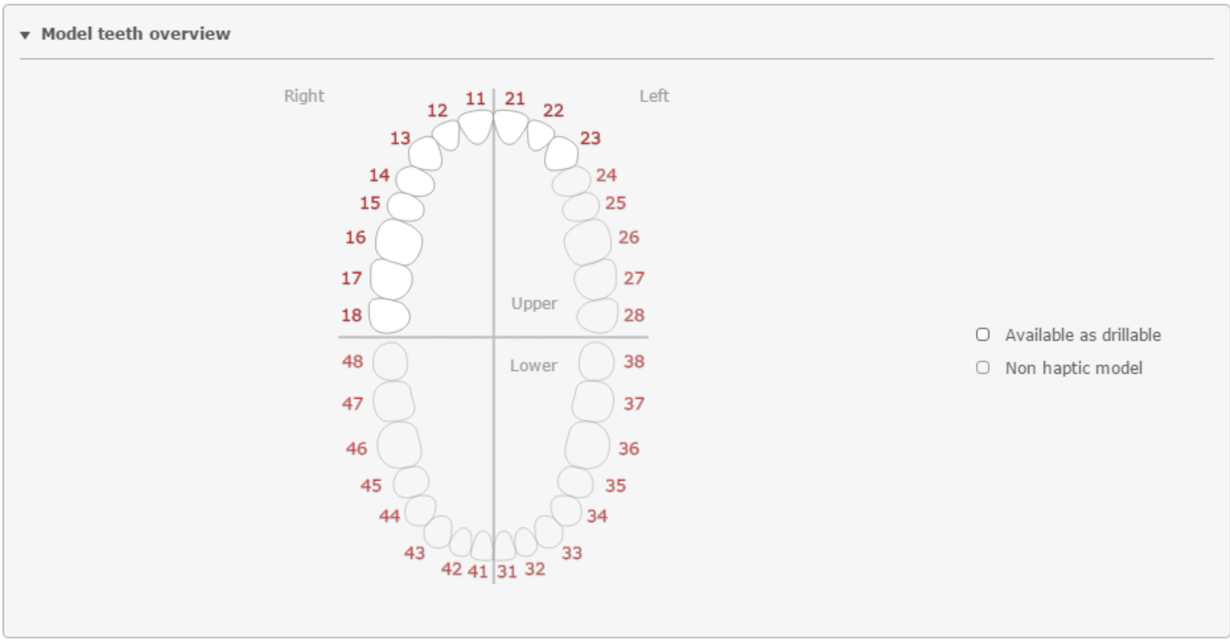


Model teeth overview

The teeth model overview shows which teeth are available in the selected model.

Teeth in ‘white’ are available as drillable models. Teeth in ‘Grey’ are not available at all, or just visually present but not haptic.

In order to edit the tooth details and media for a specific tooth, simply select one of the white teeth from the model teeth overview.



During case creation you will be prompted with a similar tooth selector, to make your selection of maximum three drillable teeth.

Segments: The Treatment plan page is optional. If this page is disabled it is excluded from the case shown on the Simodont.

Tooth description: This is the description of the selected tooth.

Tooth media (radiographs, intraoral): In this section you can add, label and delete radiographs and intra oral images of the selected tooth.

Ideal Prep: Ideal preps are needed for the automatic objective assessment method. See paragraph 'Automatic Objective Assessment' for more information.

In order to assign an ideal prep to a model:

1. Go to the models page
2. Edit a model
3. Select a tooth
4. Click 'Add ideal prep'
5. Find the correct ideal prep
6. Click 'Ok'

Publish model

Just like a case, a model has one of the following states:

- 'new/in progress'
- 'published'

Important to know is:

- As long as a model (revision) is not published, it is not ready to be used in a case. The model is not shown in the model page in the case wizard during case creation.
- Every time you publish a model, the latest revision of that model is made official and becomes locked. When you want to make changes after publication of a model, the system automatically creates a new revision for that model. Hereby the original revision of the model remains untouched. This is to make sure that model revisions that are already used in running courses do not change halfway.

Publishing a model is done either:

- in the model editor, by clicking the 'Publish' button in the right upper corner
- by clicking on 'Publish' in the model details pop-up

Copy model

In order to copy a model:

1. In the Courseware, go to the Models page.
2. From the model overview, select a model.
3. In the Model Details pop up, click 'Copy. A copy of the model is created.
4. Edit the model according to your preferences.

Delete model

In order to delete a model:

1. In the Courseware, go to the Models page.
2. From the model overview, select a model.
3. In the Model Details pop up, click 'Delete'.

Note! Model deletion is only allowed for models that are not used in a case. First delete all cases that make use of the model, and then delete the model.

Export model

Sharing and transferring models from one system to another is possible using the model import and export functionality.

In order to export a model:

1. In the Courseware, go to the Models page.
2. From the model overview, select a model.
3. In the Model details pop-up, click 'Export'.

   All model content (model information, images, raw model data) is packed together in a .tgz file and placed in the 'Downloads' folder.

Export of a model is only allowed when the case has the status 'published'. If your model is still 'in progress', make sure to finish the model, save and publish it.

The exported zip file can be fed directly into the Courseware through 'import model' in the Cases page.

Import patient scan (STL/PLY)

In order to import an STL or PLY file in the Courseware for repetitive use in courses, it is advised to import it via the Models page and build a regular case for it.

For more information on working with patient scans (STL and PLY files), please refer to chapter 6: Intra oral scan workflows

Import model

In order to import a model:

1. In the Courseware, go to the Models page.
2. Click 'Import model'.
3. Select the model package file. (tgz file)
4. Close the Import summary pop-up.

When importing a model, you will be prompted with an import summary. This summary will tell you which content is successfully imported , which is skipped and for which content the import failed . Import of content is skipped for content that already exists on your system.

Updating a model that is being used in a case/course

Updating a model, in a case that is planned for a course, would mean creating a new revision of a case. Please see paragraph "Updating a case that is being used in a course" for more information.

Note! Please be aware that changing a model in an existing case which is already being used in a course will lead to compatibility problems when reloading snapshots on the Simodont. The older snapshots taken for a different model will no longer match the newly selected model. Therefore, you should be very careful with changing models in an existing case.

5.5. Content Copyrights / intellectual property

Every institute that uses the Simodont Dental Trainer has its own Copyright. Every piece of content is labeled with this trademark to be able to identify the original source of the content.

6. INTRA ORAL SCAN WORKFLOWS

6.1. Where to import a patient scan?

Patient scan page versus models page

The Simodont Courseware provides two basic workflows for the handling of patient scans, depending on the difference in the usage of the scan. The intended use determines which workflow you should use to import your scan.

If you are planning to use the scan only for a limited period of time and/or for a limited number of users, then it is advised to upload the scan through the Patient scans page.

If you want to use the scan for an unlimited period of time and/or in multiple cases, or in repetitive courses, it is advised to add the scan to the generic models library. In that case upload the scan through the Models page.

Do you want to use the scan for a limited period of time?

YES, limited use of scan

Import the scan in the Patient Scans page

Teacher or Student imports the scan file in the **Patient Scans page**.

NO, repetitive use of scan

Import the scan in the Models page

Teacher imports the scan file into the model library via the **Models page**.

STL and PLY support

The Simodont Courseware supports the import of two types of files:

- STL – surface scan without color information
- PLY – surface scan WITH color information

Please be aware that intra oral scans in the **STL format** are converted into models with a uniform color and hardness, as color information and internal anatomy information is not included in the scan itself and not captured in an STL file. A uniform model also means that the Simodont will not be able to identify the different teeth in the scan, like is done in other models.

Intra oral scans in **PLY format** will include color, as color information is available in this type of scans. Since it concerns a surface scan, the color information is only available for the surface of the model. To increase realism of the model, the color is pushed inwards for 1 mm in the 3D drillable model. The hardness of the model in Simodont will be uniform throughout the model since internal anatomy information is not included in the intra oral scan.

6.2. Preparing scans for import in the Simodont Courseware

Since v4.18 of the Simodont Courseware, it is no longer needed to prepare the scan in a separate tool before importing it into the courseware. The workflows in the courseware allow you to crop the scan to the appropriate size.

Just retrieve the scan (STL or PLY + textures) from the intra oral scanner computer and move the files to the Teacher Station. Import the scan according to the steps described in the following paragraphs.

Note!: The maximum files size is 50MB. The user will be warned if the file is too large.

6.3. Import of scans through the Patient Scan page – limited use

In order to import a scan through the Patient Scan page:

1. In the Courseware, go to the Patient scans page.
2. Click + New Patient Scan in the upper right corner.
3. Click 'Upload' to select your scan or click 'Load example file' to use the example file.
    a. When uploading a PLY file with a separate texture file (.jpeg, .jpg, .tiff, .bmp), it is possible to select both files in one go. Or upload the files in two steps like depicted below. If the uploaded PLY file is referring to a texture file, the software will tell you which file you should upload.
    b. Enable 'Skip texture file' if you do not have the texture file available.

    The system will check the size of the file. If it is larger than the supported size for Simodont, the user will be notified. The user can then use a smaller size scan.
4. Rotate the model until you have a proper view of the region of interest.
5. Take a snapshot of the model using the camera button. This image will be used on the case tile.
6. Make a selection of your region of interest, by selecting two points on the scan:
    a. Best results are achieved when you select a point at the highest point on the gum line, close to where the teeth touch each other.
    b. When you are not satisfied with the selected area, click 'Reset' and select again.
7. When you are satisfied with the selected area, click 'Confirm'.

    The system will check the size of the region of interest. If it is larger than the supported size for Simodont, the user will be notified. The user can then reset the selection and select a smaller region of interest to be able to continue.
8. Check the cropped result one more time and click 'Confirm' again. Or click 'Undo' if you want to retry the selection of the region of interest.

    After the second confirmation you will be forwarded to the Details page.
9. On the Details page, enter the following details.
    - Patient name.
    - Start date.
    - End date.
10. Select type of model (permanent or primary).
11. Select the teeth numbers that need to be prepared in the tooth selector.
12. Enter a short description of the assignment.
13. Select an instrument set. Once a set has been chosen, you are able to move to the Positioning page.
14. Click Positioning.
15. Set the start position and limitations for the model.

16. Click Users.
17. Select the user(s) that will use this scan.
18. Save and exit.

The scan is added to the selected user(s) and appears in the scan overview of the Patient Scans home page in the Courseware.

Tip: Use the Demo STL. If you quickly want to try out the Patient Scan workflow, you can make use of the example file. This file is provided to you by default when you start to add a new patient scan.

A more detailed explanation of the available settings in the Patient Scan wizard is found on the following pages.

Patient scans home page

The start screen of the Patient Scans page shows a list of all patient scans appointed per user. Here is where you can see details like number of attempts per scan, and this is where you can delete uploaded scans.

Finding a patient scan

You can search for a patient scan using the search field. Your search criteria will be checked against the scan names, tooth numbers and usernames.

Scan details

▼ Regan Hall

Patient name	Teeth	Due date	Last used	Total attempts	Longest attempt	Short description
Demo Patient	[25,26]	08/31/2021	08/05/2021	1	02:27 m:s	Crown preps on #25 and #26

Patient name:	The name you entered for the patient when the scan was uploaded.
Teeth:	The tooth numbers that were selected as focus teeth for the preparation when the scan was uploaded.
Due date:	After this date the scan will no longer be accessible for the selected users. The data is still kept on the system. Therefore, reporting is still possible, but the scan will no longer appear on the Simodont as an active assignment for the user.
Last used:	The date of the latest attempt.
Total attempts:	The total number of attempts.
Longest attempt	The attempt with the longest duration.
Short description:	This shows the description that was entered for the scan assignment.

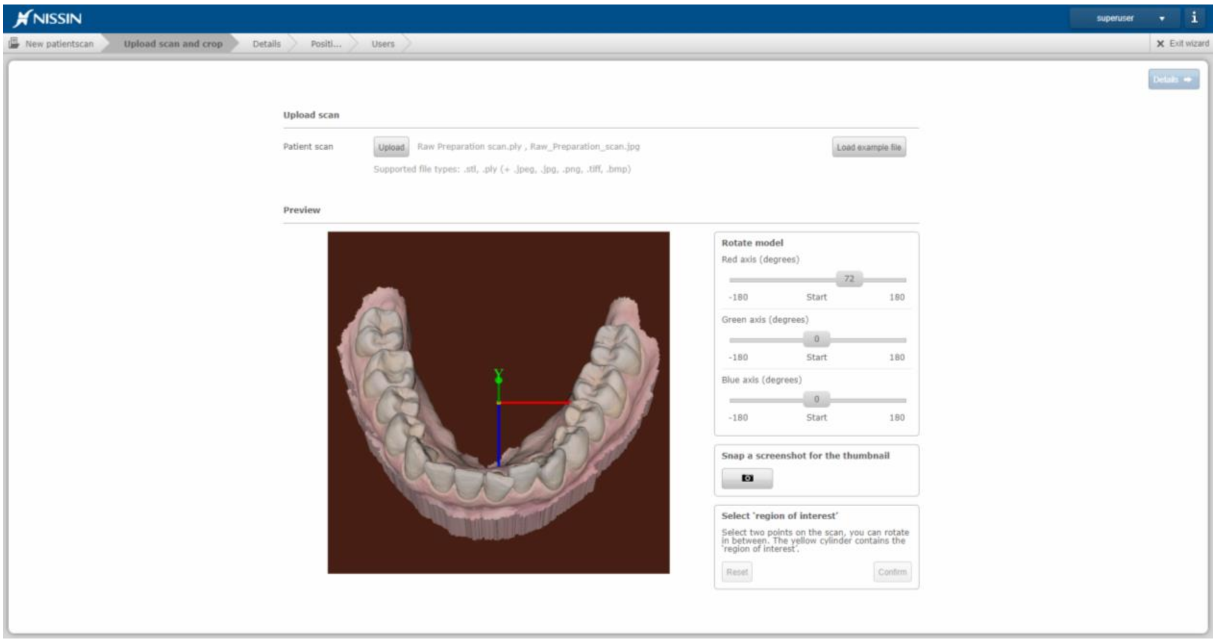
The 'New patient scan' wizard

The patient scan wizard is designed to guide you through the process of uploading a scan and assigning it to one or multiple users in a fast and easy way.

The following features are always enabled for a patient scan exercise uploaded through the new patient scan page:

- Taking and loading of snapshots
- Restart treatment

Step 1: Upload scan and crop



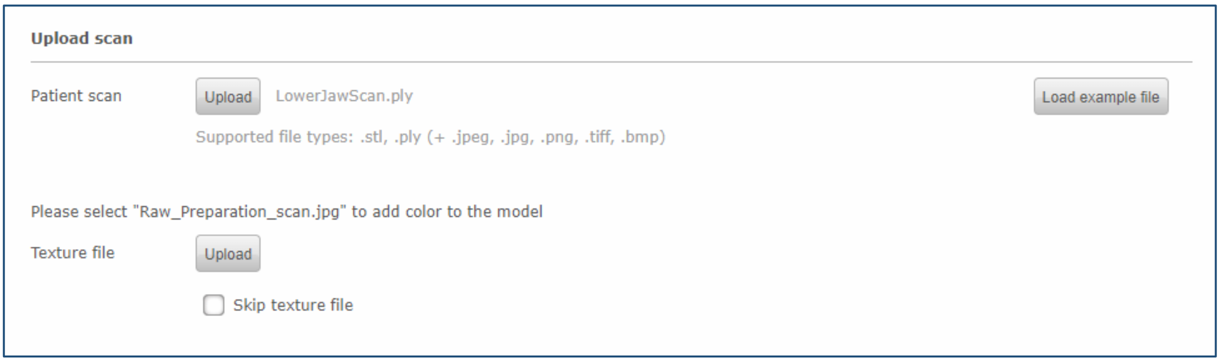
The scan is uploaded, and a preview is shown

Once you have clicked 'New patient scan' the wizard is started.

Click 'Upload' to select your SLT or PLY file. When uploading a PLY file with a separate texture file (.jpeg, .jpg, .tiff, .bmp), it is possible to select both files in one go. Or upload the files in two steps like depicted below. If the uploaded PLY file is referring to a texture file, the software will tell you which file you should upload.

Enable 'Skip texture file' if you do not have the texture file available.

If you do not have any scan file available yet, you can choose to use the example file. In order to make use of this, click 'Load example file'.



The PLY file and a separate texture file can be uploaded in two steps

Rotate model

Use the sliders to put the model in the position such that the selection of the region of interest becomes easy. It is advised to have a clear view on the gum line of the model, as the best results are achieved when you select two points at the highest point on the gum line (or just above), close to where the teeth touch each other. You may want to reorient the model between selecting the first and second point of the drillable area to get a better result.

Snap a screenshot for the thumbnail

When the model is positioned nicely, use the camera button to take a snapshot. This snapshot will be used for the thumbnail of the case. This way students are able to recognize the model by looking at the case tile.

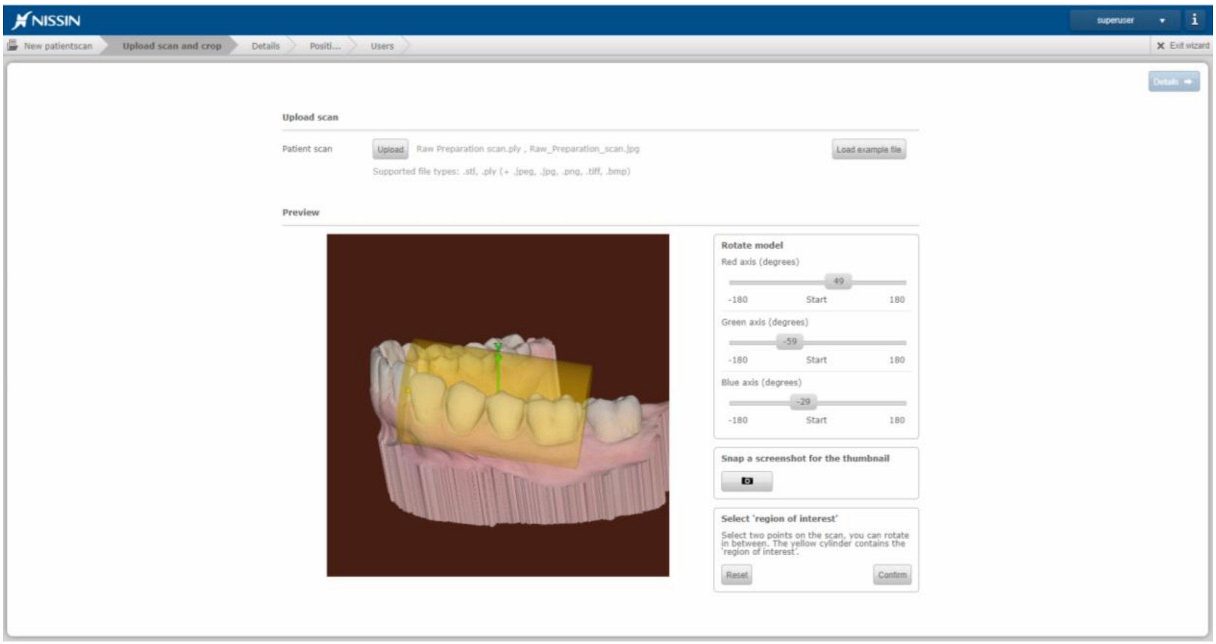
Select 'region of interest'

Select the drillable area or so called 'region of interest' from your scan. Simodont supports a drillable area with a size similar to approximately 6 to 7 teeth in a row. Therefore, you must select which area from the scan you are interested in using in your case. Only the part inside the 'region of interest' will be made into a drillable (haptic) model. The rest of the scan will be shown in the Simodont as a visualization only (non-haptic).

To select the 'region of interest' you should select two points on your scan. Within these points lies your 'region of interest'. Best results are achieved when you select a point at the highest point on the gum line, close to where the teeth touch each other. You may want to reorient the model between selecting the first and second point of the drillable area to get a better result. The yellow cylinder contains the 'region of interest'. Use the Reset button when you are not fully satisfied with the selected area. Repeat your selection until you are satisfied with the selected area and click Confirm.

Tip: Best results are achieved when you select a point at the highest point on the gum line, close to where the teeth touch each other.

Tip: You may want to reorient the model between selecting the first and second point of the drillable area to get a better result.



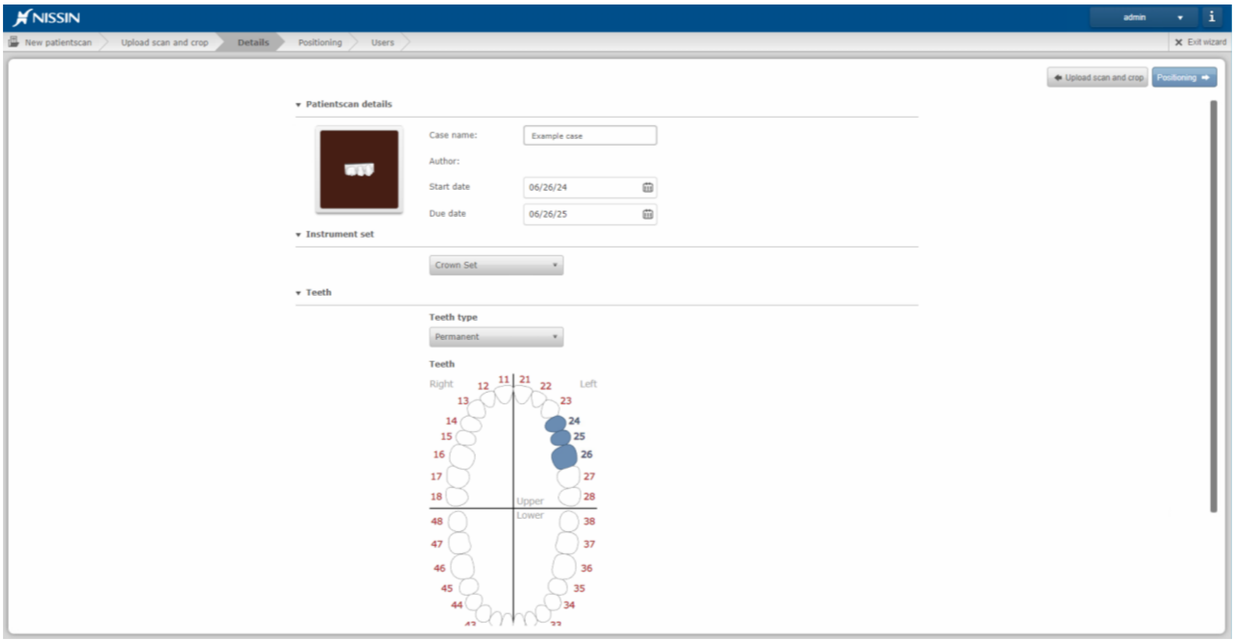
Selecting the region of interest

The ‘region of interest’ will now be cut out of the original scan. Check the cropped result one more time and click ‘Confirm’ again. Or click ‘Undo’ if you want to retry the selection of the ‘region of interest’.

After the second confirmation you will be redirected to the Details page.

Step 2: Details

The Details page allows you to enter a few basic details that are needed to create a case for the patient scan.

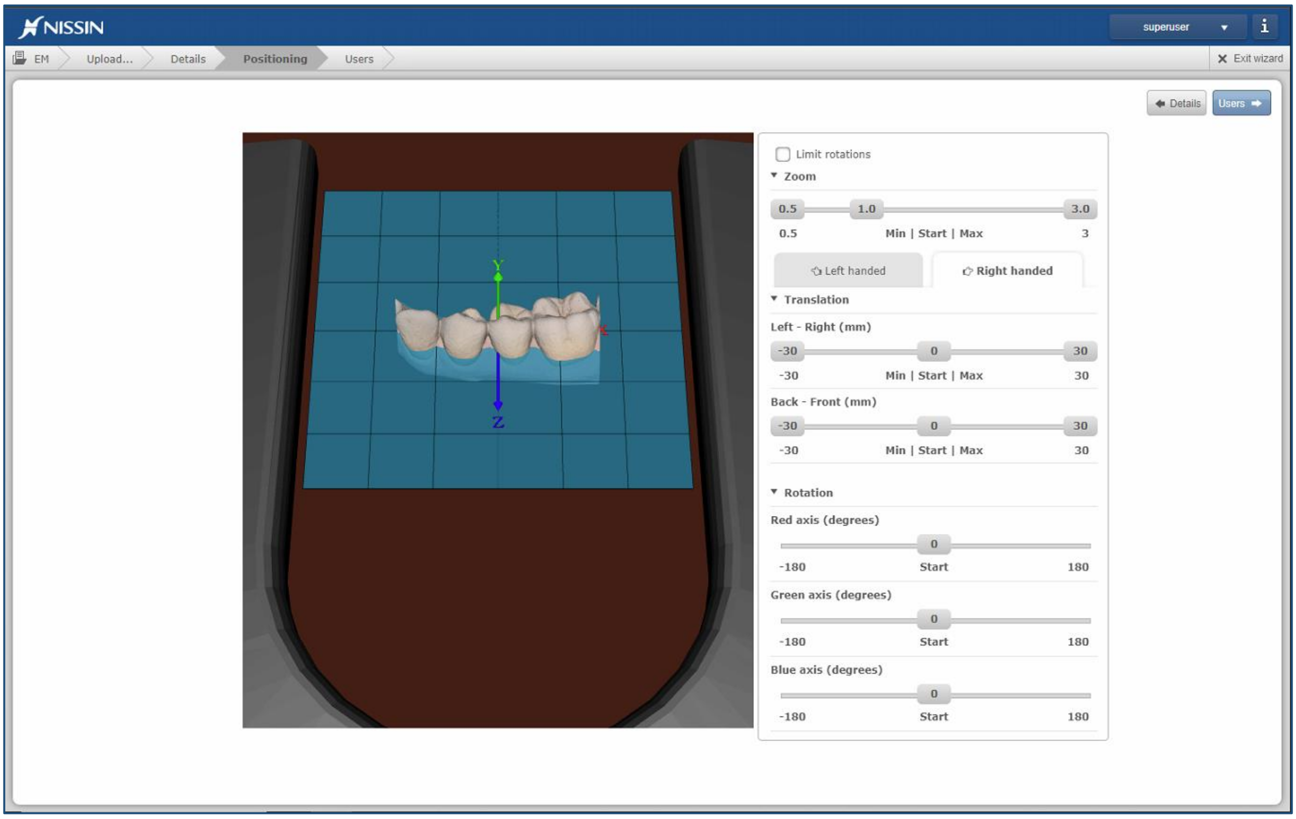


Selecting the drillable teeth

Case name:	The name you enter will be used as the case name.
Start date	The scan is accessible for the student from this date.
Due date:	After this date the scan will no longer be accessible for the user.
Instrument set:	Here you should select which instrument set must be used for the treatment of the patient scan.
Teeth type	Permanent or primary. This is needed to show the correct tooth selector.
Teeth:	Select the teeth that the student should treat. This is solely meant to inform the student which teeth he should focus on. There is no assessment related to this setting.
Description	Enter a short description of the exercise.

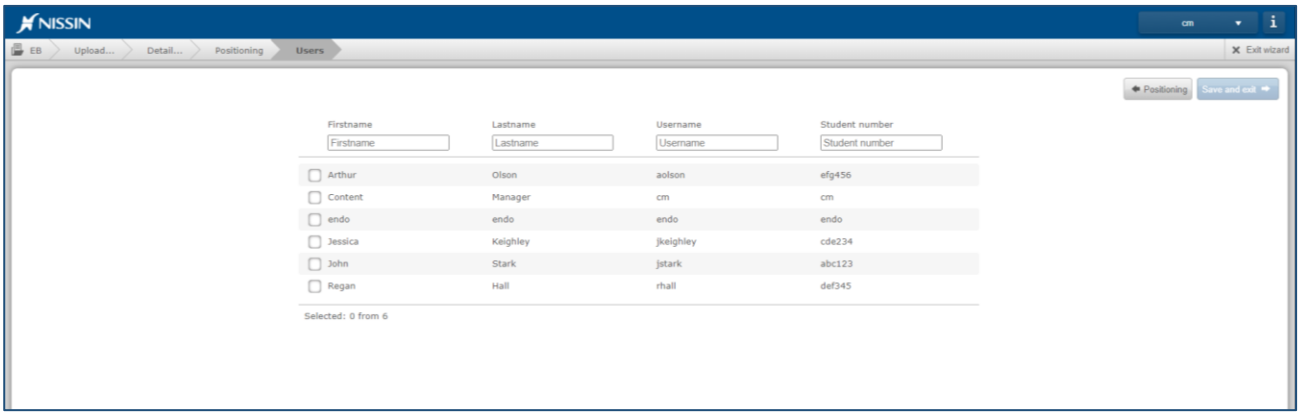
Step 3: Positioning

On the Positioning page you are able to set the start position and orientation of the model. It is also possible to set limitations for the model's available motion. Just like this is possible within the normal case wizard.
Please refer to the case wizard execution page settings (page 82) for explanation on the positioning settings.



Step 4: Users

At the fourth and last step, you can select the users you want to assign the scan to. You can assign a scan to multiple users in one go. It is possible to search for users based on their first name, last name, username or student number.



6.4. Deleting a scan from the patient scan page

1. In the Courseware, go to the Patient scans page.
2. Enter the name of the user or the name of the scan in the search field.
3. Click on the username to see the appointed scans.
4. Click the recycle bin button behind the scan you want to delete.

6.5. Import of scans through the Models page – repetitive use

In order to import an STL or PLY file in the Courseware for repetitive use in courses, it is advised to import it via the Models page and build a regular case for it.

1. In the Courseware, go to the Models page.
2. Click 'Import patient scan (STL/PLY)'.
3. Click 'Upload' to select your scan or click 'Load example file' to use the example file.
    a. When uploading a PLY file with a separate texture file (.jpeg, .jpg, .tiff, .bmp), it is possible to select both files in one go. Or upload the files in two steps like depicted below. If the uploaded PLY file is referring to a texture file, the software will tell you which file you should upload.
    b. Enable 'Skip texture file' if you do not have the texture file available.
4. Rotate the model until you have a proper view of the region of interest.
5. Take a snapshot of the model using the camera button. This image will be used on the model tile.
6. Make a selection of your region of interest, by selecting two points on the scan:
    a. Best results are achieved when you select a point at the highest point on the gum line, close to where the teeth touch each other.
    b. When you are not satisfied with the selected area, click 'Reset' and select again.
7. When you are satisfied with the selected area, click 'Confirm'.

    The system will check the size of the region of interest. If it is larger than the supported size for Simodont, the user will be notified. The user can then reset the selection and select a smaller region of interest to be able to continue.

    Check the cropped result one more time and click 'Confirm' again. Or click 'Undo' if you want to retry the selection of the region of interest.

    After the second confirmation you will be forwarded to the Model details page.
8. Enter the model details:
    a. Model name
    b. Model description

Tip: Best results are achieved when you select a point at the highest point on the gum line, close to where the teeth touch each other.

Tip: You may want to reorient the model between selecting the first and second point of the drillable area to get a better result.

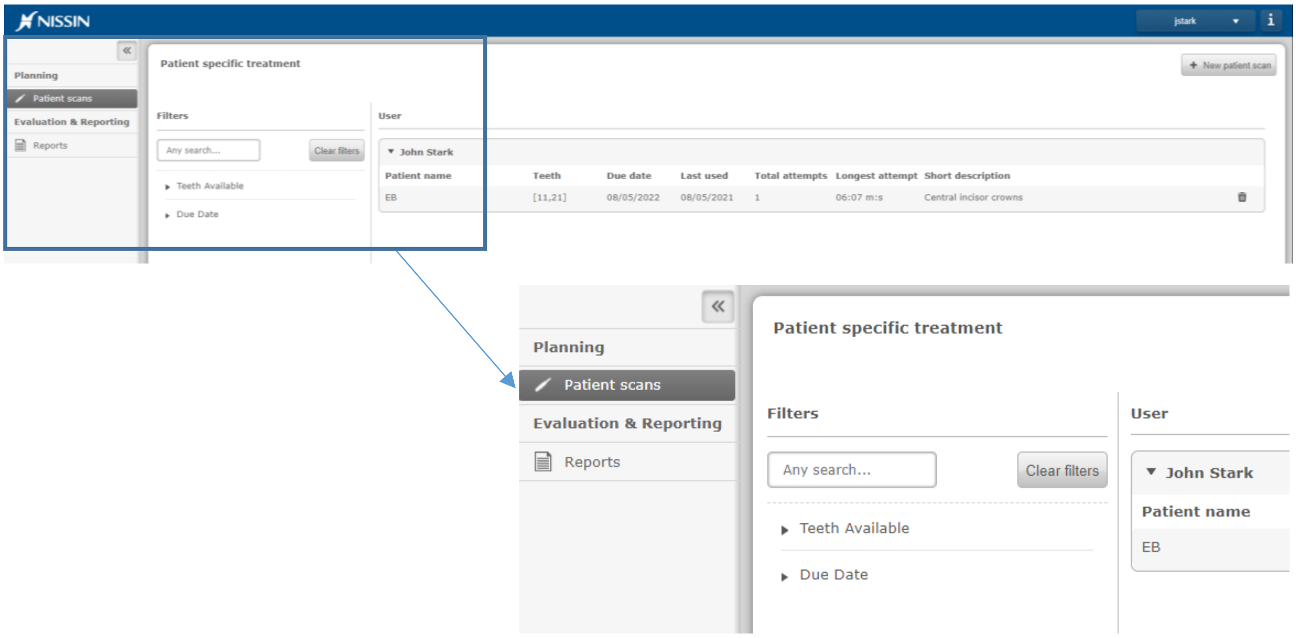
6.6. Deleting a scan from the models page

Please be aware that it is not possible to delete a model that is being used in a case. This is a precaution to avoid cases getting incomplete. When you need to delete a model, you will first have to delete all the cases that make use of this model. After that you will be able to delete the model. Please find the instructions on how to delete cases and models in chapter 5.

6.7. Students uploading patient scans

It is also possible to let students upload their own patient scans into the Simodont system via the Courseware. When this feature is enabled for students, the student will see a very limited version of the Courseware application when he logs in on the Teacher Station. The student will only be able to upload scans to his own user account and he will be able to download a report of his own attempts made on his own patient scans.

The example below shows the user interface of the Courseware application when a student has logged in. You see that the student only has access to the Patient scans page and the Reports page.



Student logged in on the Courseware

Enabling scan uploads by students

For safety reasons, the upload of patient scan files by students is by default disabled. This is because this feature is accessible through the Teacher Station / Courseware application only. Allowing students to access the Teacher Station needs to be a well-considered decision.

In case you are interested in using this option, please contact our service and support department at support@nissin-dental.nl. Together we will discuss the safety precautions that may be required. After agreeing on the implementation and usage of this feature we can unlock this functionality for you.

As an alternative, we could discuss the option of adding a separate Student Workstation to the Simodont's SimoNet or Student user Windows account on the Teacher Station for the purpose of uploading scans by students.

6.8. Downloading a report of a patient scan exercise (students only)

In order to download a user report:

1. As a student, log in to the Courseware,
2. Go to the Reports page
3. Click the User report icon
4. Select the student
5. Select a patient scan
6. Click Generate in the upper right corner. A report is generated.
7. Optional; select an STL to download

Teachers, please refer to chapter Reporting.

6.9. Intra oral scans versus regular crown case visibility options

Please be aware that not all Crown Case specific visualization options are available for models generated from intra oral scans like STL or PLY files. This is because in these models, the teeth are not recognized as different components, where this is required for some of the visibility options to work.

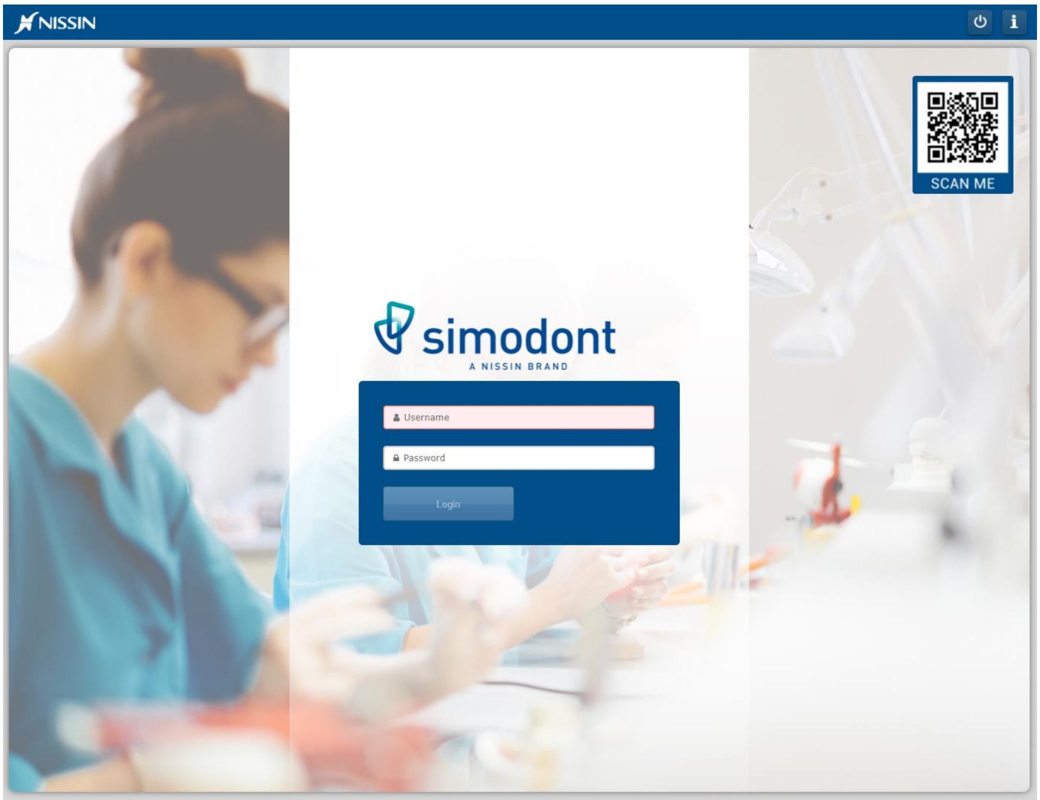
Model generated from:	**Tooth axis**	**Antagonist**	**Outline**	**Glass Grid**	**Tooth visibility options**
Intraoral scan / STL / PLY	*X*	*X*	*V* *Only blue, due to missing separation of teeth*	*V* *Free moving, not automatically snapped to tooth axis as tooth axis is not defined*	*X*
Micro CT	*V*	*V*	*V* *Main tooth is blue, adjacent teeth are red*	*V* *Snapped to tooth axis*	*V*

SIMODONT COURSEWARE

Dental Trainer Application

SIMODONT COURSEWARE - DENTAL TRAINER APPLICATION

The Dental Trainer Application is the software application running on the Simodont Dental trainer. This chapter describes what the student is viewing while working on the Simodont. Note that the content will be similar but more limited than when logging in as teacher.



1. QR code

The QR code contains a link to the product page of the website https://www.simodontdentaltrainer.com/ . Here, additional information is found on the various procedures and possibilities of the Simodont system.

2. Login / logout

After the system is switched on, the login page becomes visible. Here the student can login by either typing his username and password or by using his swipe or RFID card. On request, login via the university authentication system is also available.

Based on the student's credentials he will be redirected to his account and only the user specific assigned cases will be available.

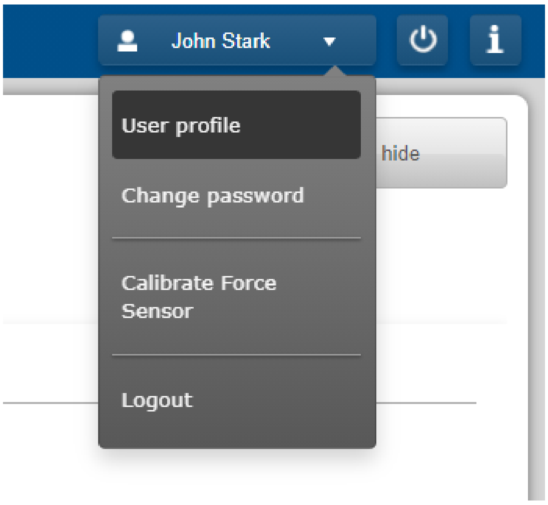
After a successful login, the upper right part of the application will become stationary. It will display the user profile button, the shutdown button and the system information button.

- The system information button is intended for NISSIN support when needed.
- The shutdown button can be used to shut down the system; it will prompt for confirmation when pressed.
- Once logged in the user is able to access the user profile. For more information on the user profile see chapter 3 User profile.

3. User profile

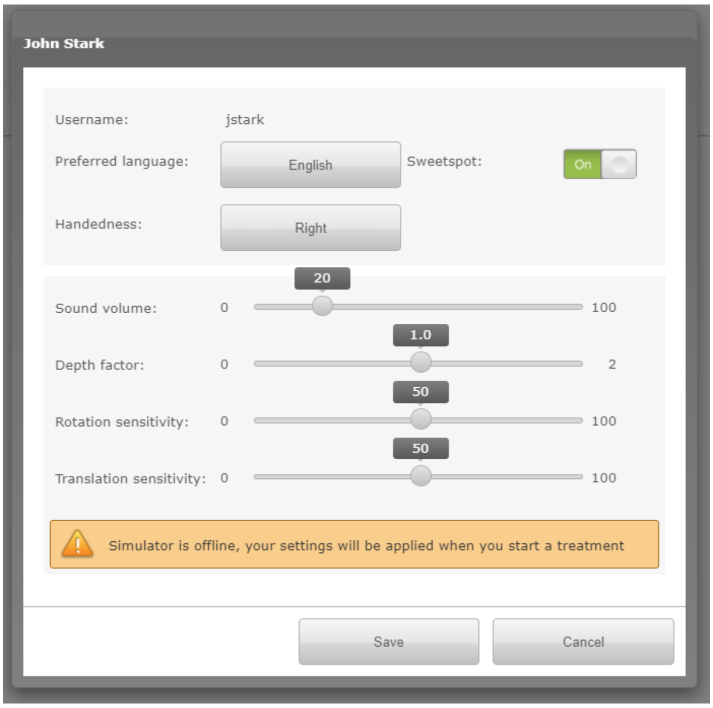
Each user has a profile which contains personalized settings for the simulator.

In order to access the user profile settings, the user has to click on the username depicted in the upper right corner of the screen. Then click 'User profile'. To active the new setting immediately, it is best to change the settings from the treatment execution phase.



A settings window will be opened, allowing the user to change the following settings:

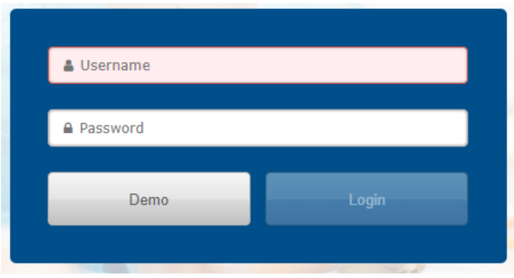
Preferred language	This setting is used to select the language for the user interface and content texts. The user can choose between the languages that are activated by the system administrator.
Handedness	This setting is used to change the handedness, with the possible options of left and right. This selection could have an impact on the model's start position and limitations, depending on how the case is designed.
Sweet spot	This setting is used to turn off the visibility of the sweet spot. The sweet spot is normally shown when the space mouse is being touched, to indicate the center of the working area. However, for certain procedures like endodontic access cavity preparation, it is preferred to have the sweet spot disabled.
Sound volume	The user can change the volume of the sounds from the simulator.
Depth factor	The user can change the depth factor in case the default factor is not ideal. Changing this setting has an effect on the stereo vision (position of the two projected images of the left and right projector).
Rotation sensitivity	This setting is used to change how fast the simulator reacts on changing the orientation of the model using the space mouse.
Translation sensitivity	This setting is used to change how fast the simulator reacts on changing the position of the model using the space mouse.



4. Demo mode (optional)

The demo account is a generic account that can be used by anyone for giving demonstrations. This account cannot be used for any training or research purposes, as all generated data will **NOT** be saved.

With the DEMO button you will be automatically redirected to a generic demo account.



Demo button enabled

The quick access to the demo account (the DEMO button) on the Simodont is by default disabled. Please request NISSIN to enable the demo button on your Simodont Dental Trainer when preferred.

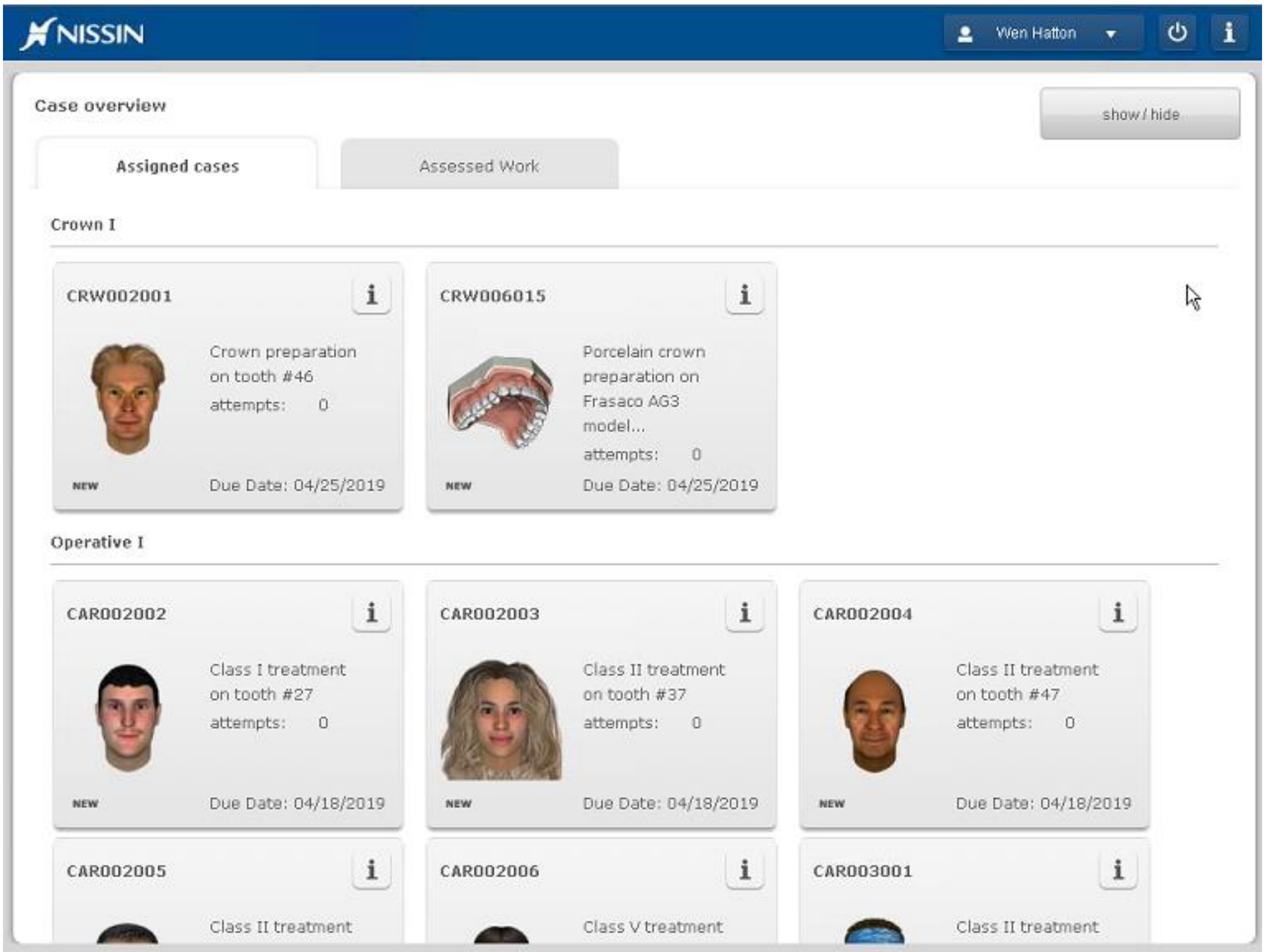
or

Contact NISSIN for the login credentials for the demo account, without using the demo button. The login credentials are not shared in this manual for security reasons. This is because the demo account gives access to **all published cases** in your library.

5. Assigned cases

After login the student will be redirected to the assigned cases page based on his credentials. This displays the active courses to which he is enrolled. The courses are by default collapsed. Each course consists of one or more cases. Clicking on the name of the course will show the case tiles of the cases that are assigned to the student.

If a student cannot find his course/case in the list, he is either not enrolled for the course or the course is not active yet. Please check the date and time settings for the course in the Curriculum planner.



Case overview when logged in as a student

Each case tile shows the following information:

Case name The name of the case

Short description A short description of the case

Attempts The maximum number of attempts that are allowed for this case.

Due date The date at which the case will expire, after this date the case will not be visible.

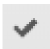
State icon The state of a case.

New:

This case is new. No attempts yet.

In progress: The case has been started, but was not submitted (handed in) yet.

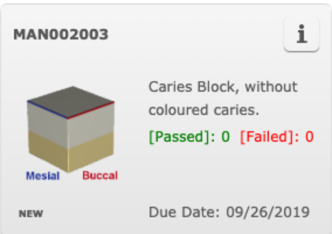
Done: The case is completed and submitted at least once. This does NOT automatically mean a student has also passed the assignment.



Automatic exam passed:

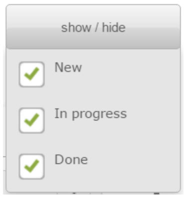
If the case holds an exam this means that the exam is passed successfully.

If the case includes an automated exam, the tile shows the amount of failed and passed attempts. Note that the score that is shown includes the number of exams taken. The number of attempts that have to be passed before an exam taken is determined by the Teacher during the creation of the course. After the student has passed the exam, he/she is not able to start the case again.

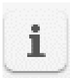


Filter

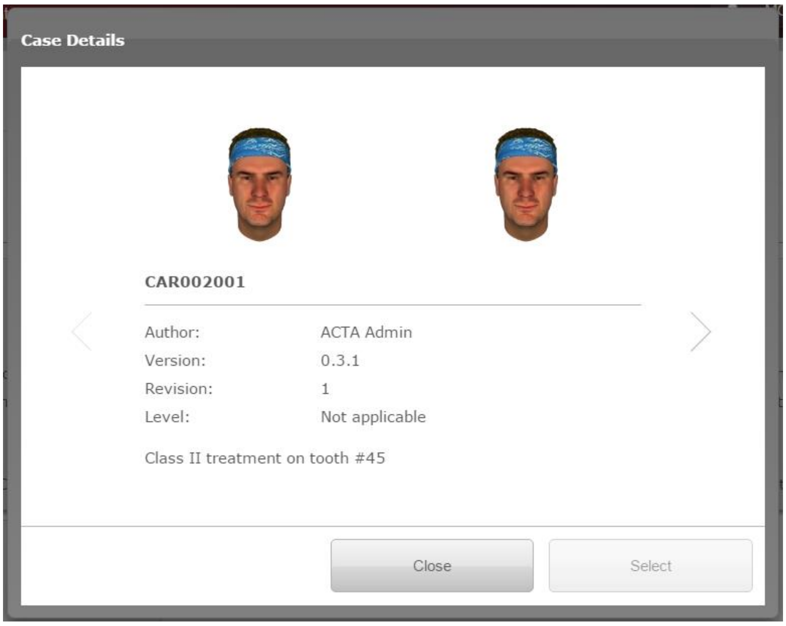
The filter button can be used to filter the cases by state.



Case details

For more information tap the information icon  on the tile. This will open a popup that contains the details of the case. Here you can find the Author and revision.

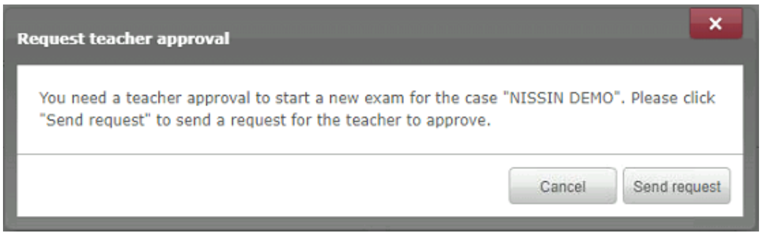
Please note that a case can have multiple revisions. It can be helpful in case of any issues or questions about a case to check the name and the revision number of the case.



When the case you would like to work on is located, it can be started by tapping the case tile or tapping select from the case details popup.

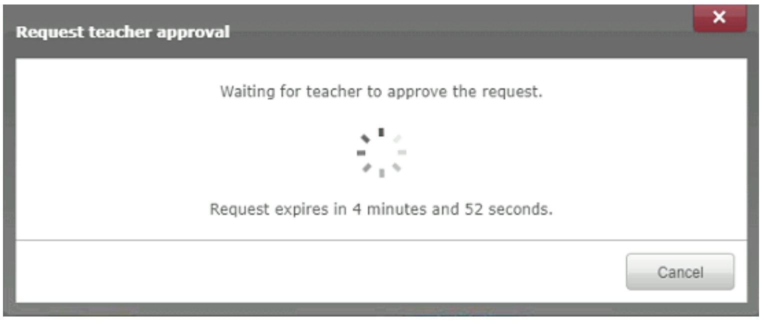
Teacher approval to start an exam case

Since release v4.20 the student can get warned that an exam case cannot be started without permission of the teacher. This will only occur in situations where the student has already started or completed the exam, either on the same Simodont or a different Simodont. See chapter 4.4 Teacher Approval for teacher part of this functionality..



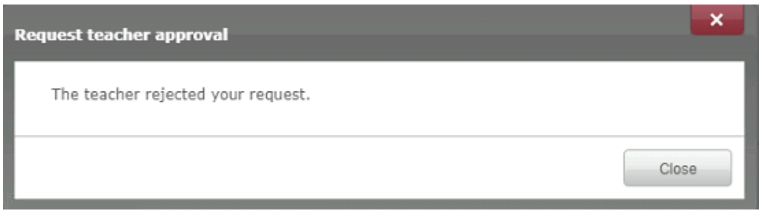
The student is notified that they cannot continue without teacher approval

After sending the request, the teacher has 5 minutes to respond to the request. The student will be shown a countdown for this. In the same screen the student can cancel the approval request, the teacher does no longer need to respond to it.



Countdown for the approval request

The student will be notified of the teachers response. This is either accepted (the student will be able to execute the case), rejected (the student will return to the cases overview) or the teacher did not responded within 5 minutes (the student will get a time-out message and send the request again).



The approval request has been rejected by the teacher

Case execution workflow

When a case is started, you will be working with a series of steps which are displayed as breadcrumbs at the top of the application. Which steps are available can vary depending on the design of the case. Moving from one step to another can be done by pressing the blue colored button which is always placed on the upper right corner.

Note that you might have to meet certain criteria before you can move to the next step. For example: On the instrument selection page the application can ask you to create a correct selection of instruments before proceeding to the execution page.

The number of steps in the case workflow depends on how the case was designed. If optional steps are not configured in the case, they will not appear to the student.

Case description

This step will provide the description of the case and assignment. It contains tips and whether any other additional information is needed before proceeding to the next page. If predefined stages are desired, they are listed at the bottom.

Predefined stages are called steps that are required for delivery. The stages can be added on the results page with snapshots that can be created during treatment execution.

Virtual Patient (optional)

This page describes a virtual patient which contains the patient history, examinations and diagnosis.

Treatment Plan (optional)

Here the student needs to write his treatment plan and use the pictures to draw the contour of the preparation and indicate the caries infected/affected tissue.

Instrument selection (optional)

This page contains a set of instruments which belong to this case. The behavior of this page can vary depending on how the case is configured.

The options are:

1. An empty tray and the student needs to select the correct instruments before he can proceed to the next step. He will get the defined number of attempts to make the correct instrument selection. The system will check the selected instruments when proceeding to the next step. Depending on the case design, the attempts will be registered and after a certain of unsuccessful attempts the system will make the correct selection for you.

2. The mandatory instruments are selected, optionally the student can add more to his liking.

You can select an instrument by tapping the instrument tile or dragging the tile to the tray. You can search for instruments using the instrument filters. Note that you are filtering the instruments that were designed as part of this case and not through all available burrs in the system.

Question forms

In several pages during case execution question forms can be applicable. A question form can be recognized via the Q&A icon . By clicking this icon, the question form will pop up. Three types of questions can be present:

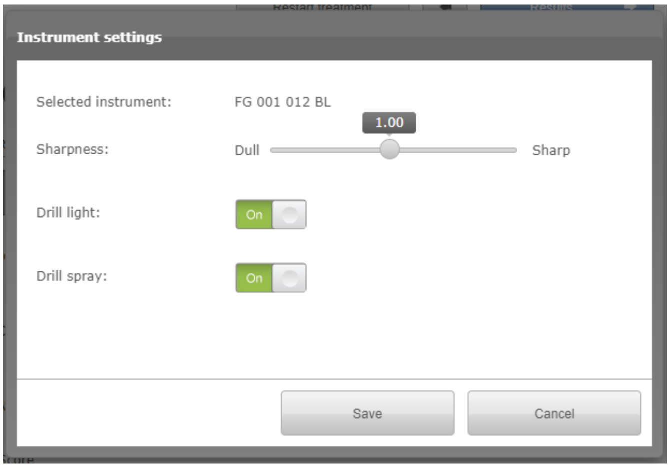
- Open question
- Multiple choice: Single answer
- Multiple choice: Multiple answer

In case of a multiple choice question a 'Show answer' button can be available that will give you feedback on your chosen answer before actually submitting the form.

Treatment execution

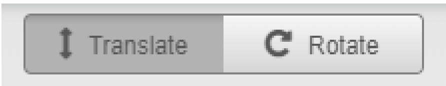
When entering this page, the virtual model will be loaded in the simulator. Please note that depending on the model this may take a while. Once the model is loaded you can start the treatment in the simulator. Depending on the treatment various features are available.

Mirror	The availability of the mirror depends on how the case was designed by the teacher. At case level, it is possible to disable the availability of the mirror. Important to know is that the mirror surface will turn black when the drill head is in contact with the mirror. This is by design, to avoid students using the drill while it is intersecting the mirror.
Zoom in/out	Zoom the simulator view. Similar to wearing loops. Note that the zoom level can be limited by the case.
Reset position	Resets the position of the virtual model to the startup position.
Instruments tray	The tray contains the instruments which you can use during the execution. Burs and hand instruments are separated on the tray. Evaluation instruments are also placed here. To allow more space to show the segment statistics it is possible to collapse the instrument tray with the button in the upper right corner. When a rotary instrument is selected, it is possible to open the settings menu. Within this menu it is possible to change the drill sharpness, light and spray of the drill. Settings are saved for the duration of the current session. After the session they are reset to default.



Glass grids

For glass grid instruments there are extra options available that allow the student to manipulate the glass grid tool in relation to the tooth.



To change the height of the glass grid along the tooth's long axis, hold the drill pedal down and move the hand piece up and down.

To rotate the tooth along the long axis, hold the drill pedal down and rotate the handpiece.

To switch the placement of the glass grid from one to another tooth in a bridge case, you can use the tooth buttons above the glass grids.

Save snapshot

Enables you to save the current state of the model.

Load snapshot

Enables you to load previously saved snapshots at certain key moments during the treatment.

Restart treatment

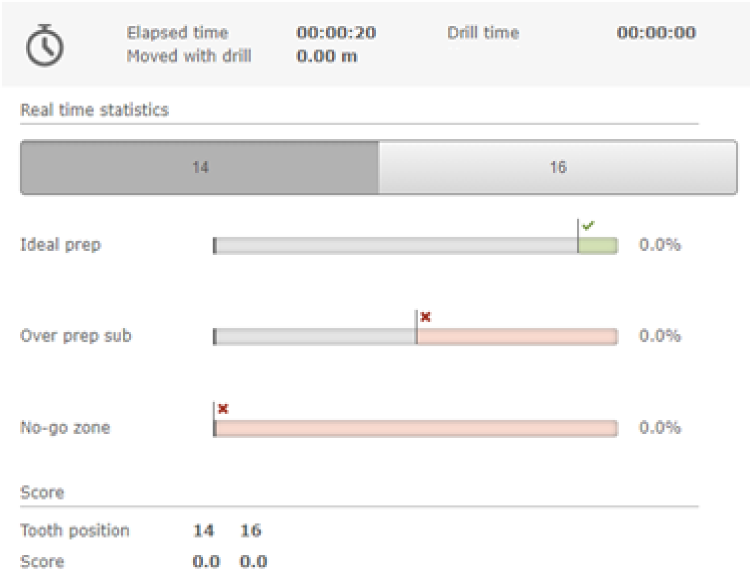
Enables you to restart the treatment from the very beginning.

Realtime statistics

This section shows the real time feedback of the treatment. If the real time statistics option was enabled, it shows the treatment timer and drill timer. And it shows the distance traveled with the handpiece, in meters.

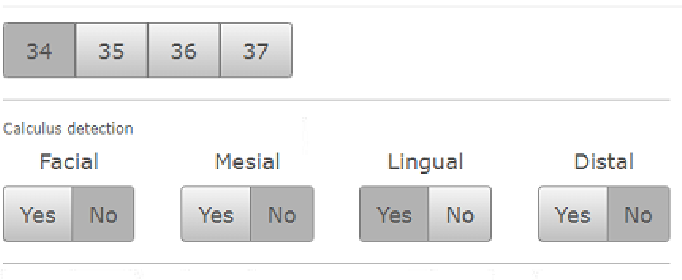
In addition, and depending on the type of case, it can show the segment statics and score.

For bridge cases where two teeth are treated, it is possible to switch between the teeth to see the statistics per tooth.



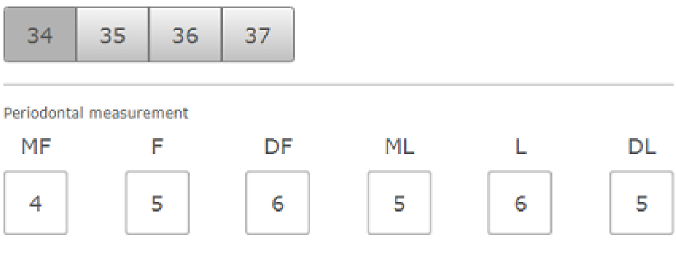
Calculus detection chart

The calculus detection chart is an option for periodontic cases. The chart allows students to enter their readings in a calculus detection exercise. The student can indicate per tooth and per side whether there is calculus present or not.



Periodontal measurement chart

The periodontal measurement chart is an option for periodontic cases (probing chart). The chart allows students to enter their readings when working in a periodontal measurement exercise. The student can indicate the depth on the 6 aspects of the tooth.



Pause and Analyze

This will pause the treatment, and gives you the opportunity to analyze the current state of the model using one of the following assessment methods:

- Treatment statistics
- Rubric self-assessment
- Evaluation against treatment plan

Radiographs This shows the radiographs for this case during treatment execution.

Head light adjustment Nine different light positions can be selected, and the light intensity can be adjusted. This may help to have a better depth perception and inspect the preparation better.

Caries detector Apply caries detector on your preparation. It will highlight any caries tissue in the model with a magenta color.

Calculus detector Apply calculus detector on the teeth. It will highlight any calculus tissue in the model with a blue color.

View options The view options are virtual tools that will aid in the inspection of the preparation of the main tooth.

- Antagonist – *no drilling possible*
- Long axis – *no drilling possible*
- Outline (original contour of the tooth) – *no drilling possible*
- Semi-transparent tooth – *no drilling possible*
- Target in tooth – highlights the target and leeway zones in a target in tooth model
- Visual assistance (periodontic cases) – real-time assistive graphics to show force and angulation feedback for periodontic instruments
- Drill guide (implant cases)

Only with the Target in Tooth and the Drill guide options active you will be able to use a drill. In case one of the other options is active, the drill will be hidden.

Visibility options The view options allow you to toggle between different states of showing/hiding teeth in the model. This will allow the student to inspect all faces of the prepared and adjacent teeth.

For crown and bridge cases:

- All (default)
- All but neighbors – *no drilling possible*
- No main – *no drilling possible*
- Main only – *no drilling possible*

For implant cases:

- Show gingiva
- Show bone – *no drilling possible*

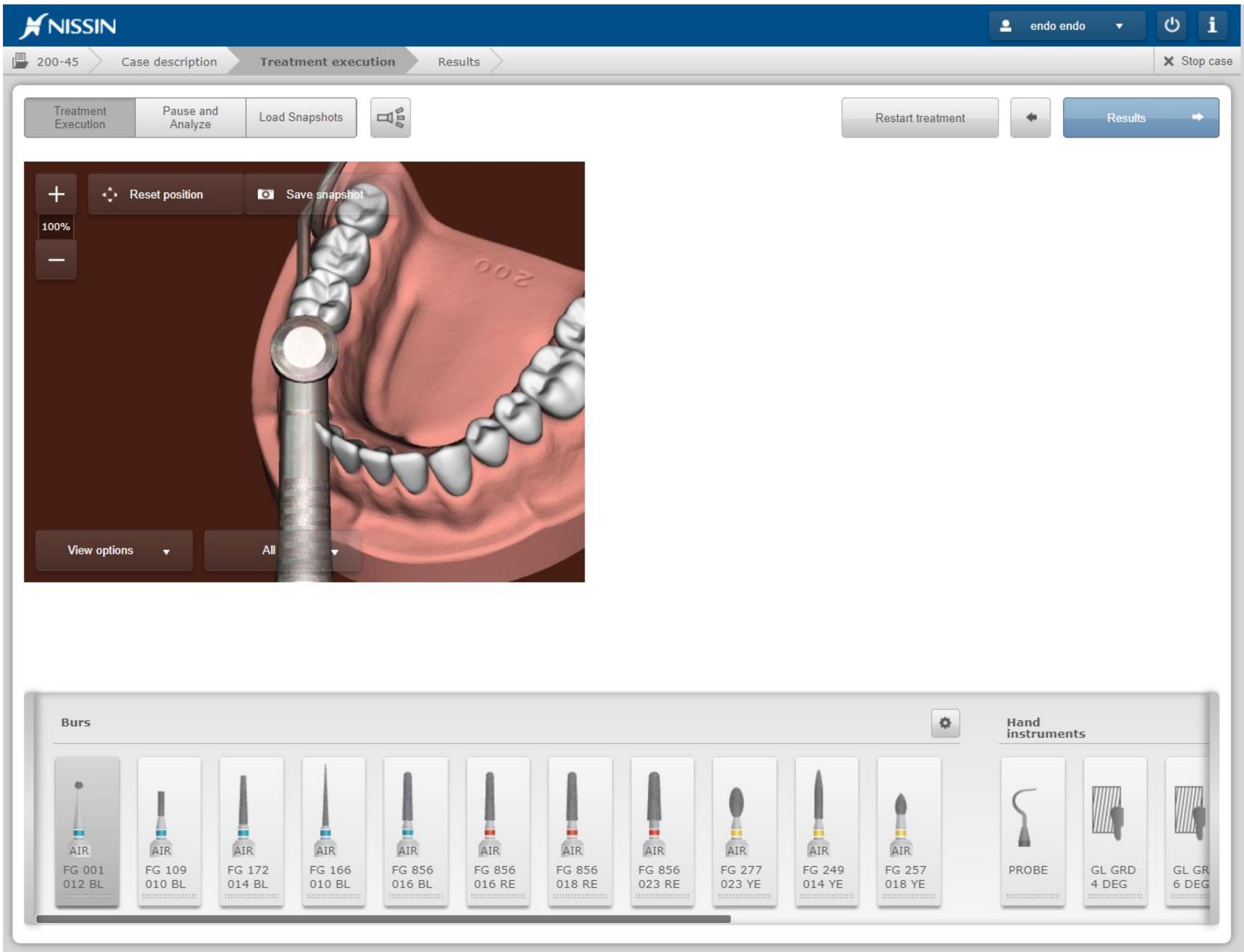
Only when the model is shown in its original state, you will be able to use a drill, otherwise the drill will be hidden. This is done to avoid too easy / unrealistic access to the teeth.

For periodontic cases:

- No gingiva

Restoration Applies restoration material, either amalgam or composite depending on how the case was designed. Pressing the button repeatedly will add extra layers of restoration material.

Irrigate Removes the red color (blood) from the pulp chamber.



Pause and analyze

While you are on the analyze page you are unable to execute any treatment. This page is exclusively for analyzing your work. You have various options to analyze your work; each option is placed on a separate tab. The options are: Statistics overview, evaluation against treatment plan, assessment against ideal preparation and rubric with criteria. Options that are made available depend on the case.

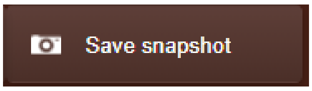
Statistics overview Displays statistical information, similar to the real-time statistics that are displayed on the execution page. You will find statistics that relate to time, distance moved and segment information. For example, the target and leeway material in a manual dexterity block or the amount of caries tissue remaining in a tooth. Depending on the case; statistics might be used to indicate if you pass/fail your case. For example, removing too much leeway material.

Evaluation against treatment plan	Displays your preparation and compares it against your designed preparation in the treatment plan.
Rubric self-assessment	The rubric displays the set of criteria which are used to evaluate the preparation. Each criterion will have its own scoring and margins. The student will have to score his own preparation. His scoring will be submitted and made visible with the scoring of the teacher.

Saving snapshots

By using the 'Save snapshot' button, the user can capture the current state of the preparation. This is a very powerful feature that enables users to go back to a certain point in the preparation and continue the preparation again from there.

In addition, snapshots can be used to show the progress of a preparation, when they are linked to so-called predefined stages that can be defined for the exercise.

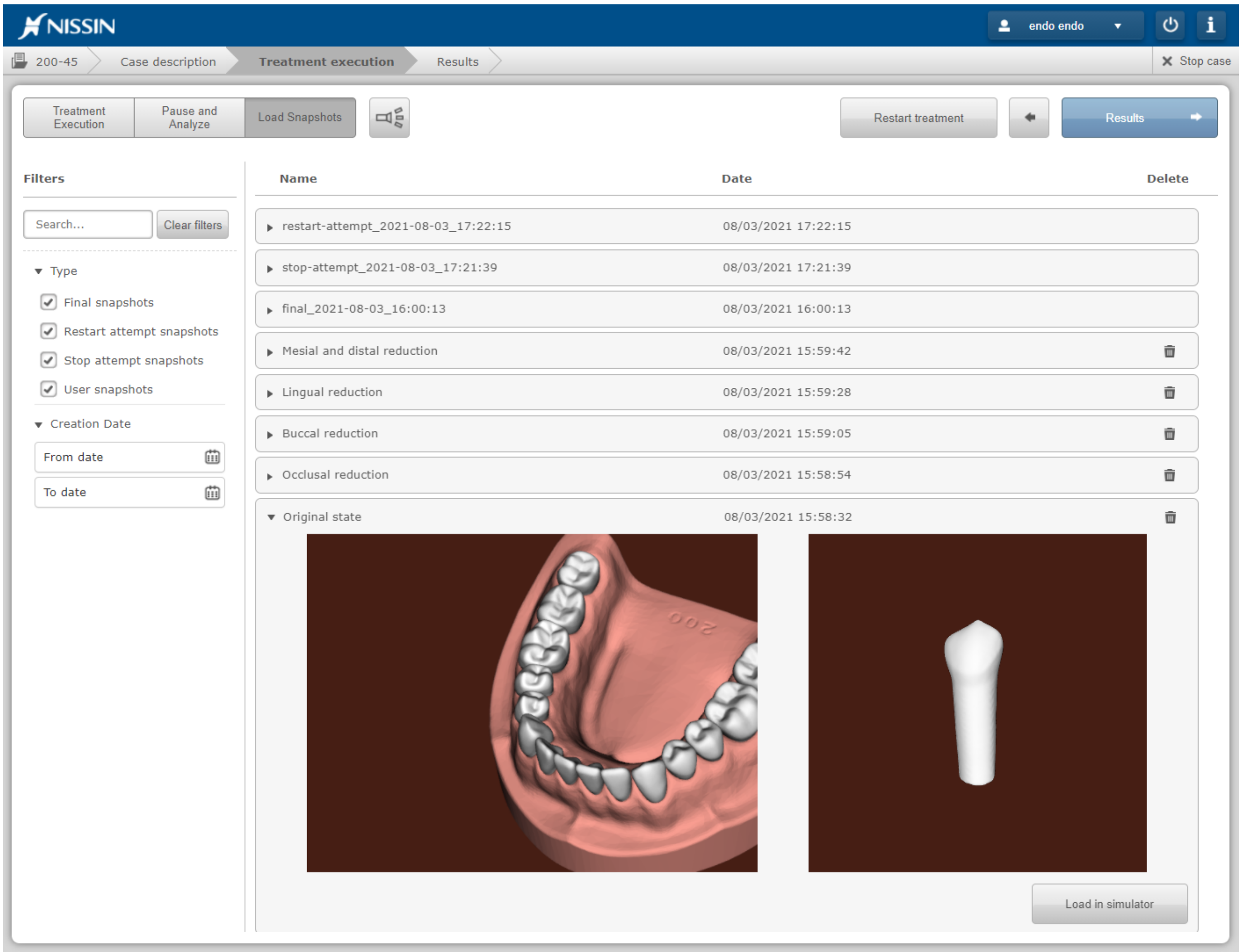


Loading snapshots

From the 'Load Snapshots' menu, students can load snapshots into the simulator that are either taken by the system automatically or taken by themselves. The system distinguished four types of snapshots:

User	- snapshots taken by the user itself
Final	- snapshots taken by the system at the moment of 'Submit'
Stop attempt	- snapshots taken by the system at the moment of 'Stop case'
Restart attempt	- snapshots taken by the system at the moment of 'Restart treatment'

The student selects the snapshot he wishes to load into the simulator. Quickly finding the correct snapshot is facilitated using either the search field or the filter options. A large preview of the selected snapshot is given in the shape of a picture and a 3D model. After the student is convinced that this is indeed the snapshot he wishes to load, he can press the button 'Load in simulator'.



For the student mainly the ‘user snapshots’ are of value. For the teacher the ‘final snapshot’ is the one to be reviewed.

User snapshots are only visible to the student and not to the teacher, unless the user snapshot was linked to a predefined stage.

Deleting snapshots

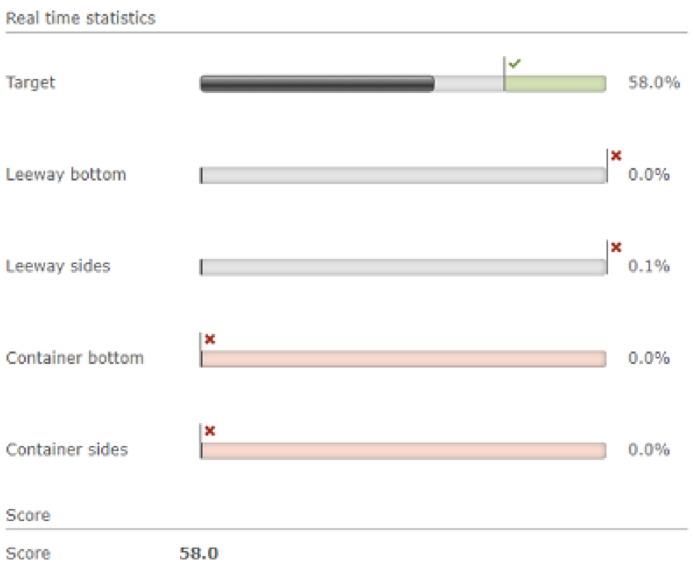
In order to keep the list of snapshots clean, a user is able to delete the snapshots he created himself via the recycle bin. Snapshots taken by the system cannot be deleted.

Results

The result page gives you an overview of the data that will be submitted to the teacher.

Statistics overview

Displays statistical information, similar to the real-time statistics that are displayed on the execution page. You will find statistics that relate to time, distance moved and segment information. For example, the target and leeway material in a manual dexterity block or the amount of caries tissue remaining in a tooth. Depending on the case; statistics might be used to indicate if you pass/fail your case. For example, removing too much leeway material.

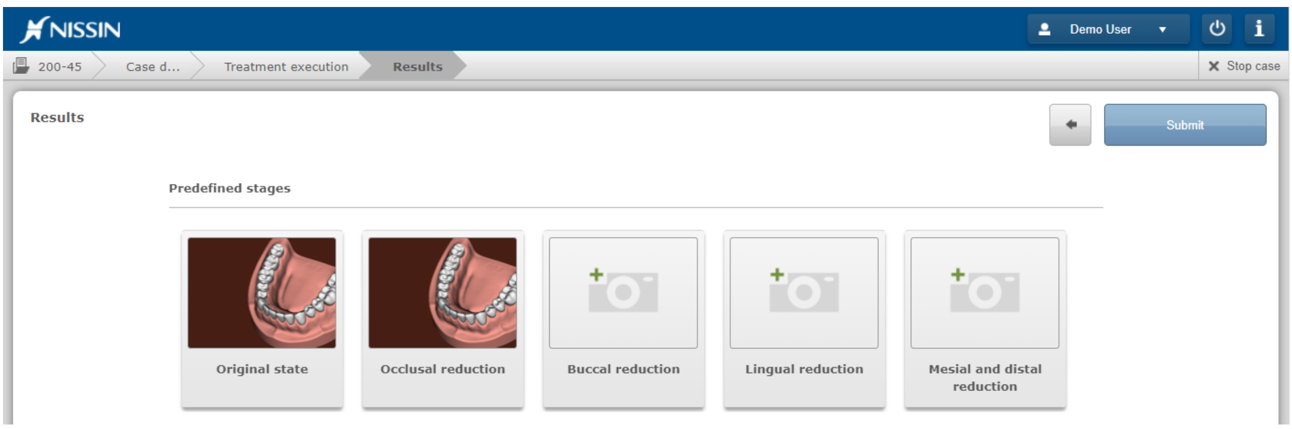


Predefined stages

Depending on how the case was created, the applicable predefined stages are visualized in the Results page. The case cannot be submitted when one of the predefined stages is not linked to a snapshot.

The aim is to link user snapshots, taken at key moments during the treatment, to the different stages that were defined for the case. This enables the teacher to assess snapshots from different stages during the procedure when reviewing the attempt in the Evaluation page.

The student is able to link any of the snapshots that where taken during the current attempt to one of the predefined stages.

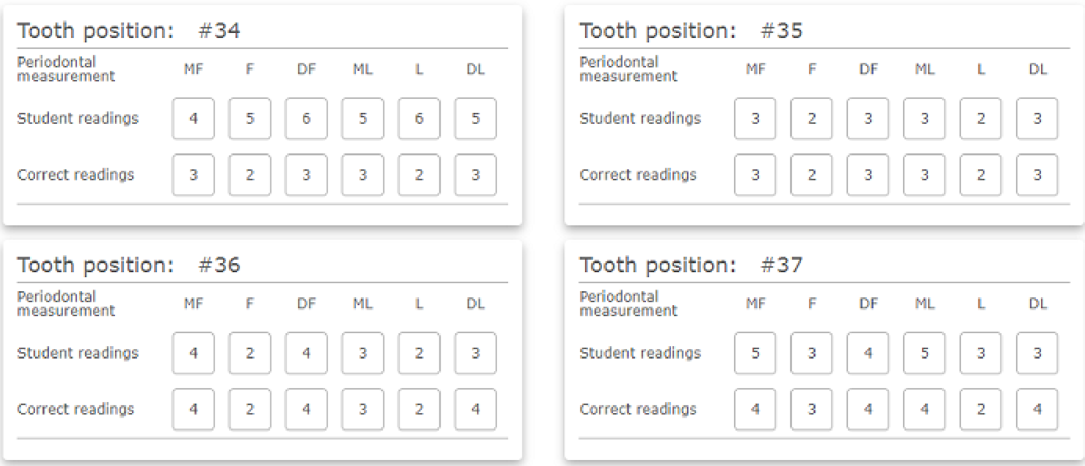


Results page: linking snapshots to predefined stages

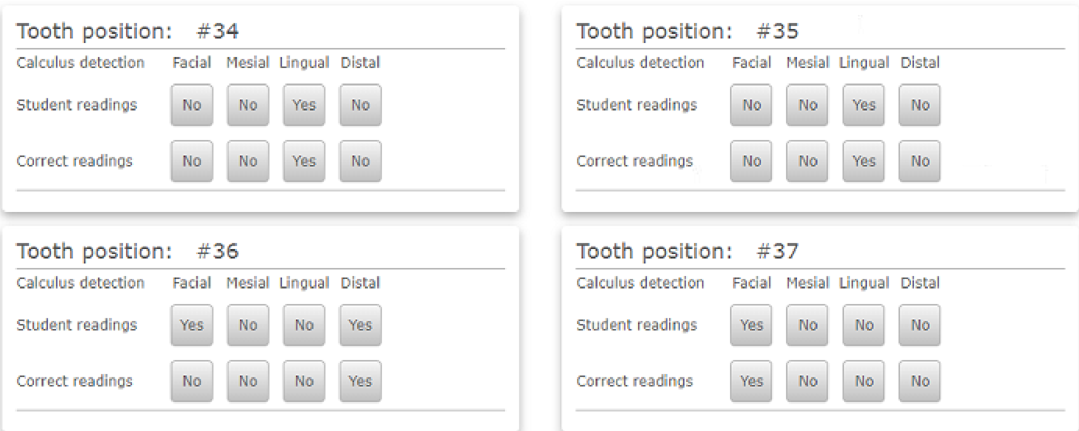
Periodontics results

Periodontal measurements and calculus detection charts

On the results page, students can compare their own readings with the official model readings. Whether this official readings are shown to the student depends on how the case was set up in the case creation wizard (see chapter 5.2 Periodontal settings). It is possible to hide the readings for a student, for example for exams.



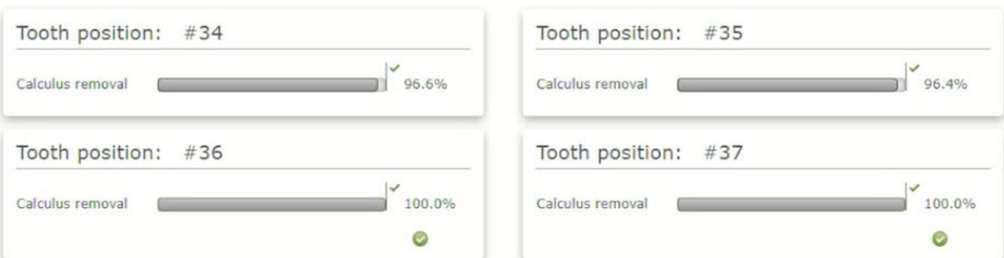
Periodontal probing student readings versus the official model readings



Calculus detection student readings versus the official model readings

Calculus removal statistics

For calculus removal cases it is possible to show the removal statistics, as a percentage of the original amount of calculus present per tooth.



Reflection

The Reflection section allows the student to add a personal reflection note on the exercise to the teacher. This allows the teacher to review the student's personal reflection when reviewing the attempt in the Evaluation page.

Submit

The Submit button is used when a student is completely finished with the exercise and ready to hand in his work. Once an attempt is submitted it cannot be undone. Submitting data may take a while.

Stop Case

You can find the stop case button at the right of the progress bar. This button is always available while working on a case and will bring you back to the case overview if needed. You can stop a case at any time, beware that a stopped case will be registered as an attempt, however it will not be visible for the teacher since it is not delivered.

6. Assessed work

The assessed work tab shows all work that has been evaluated and graded by the teacher. In this environment, the student is able to reload the work that has been submitted and read the evaluation given by the teacher.

The work is grouped by course and by case. By default, only work from the currently active courses is shown. If you are looking for evaluated work from the past, you can use the search option or filters.

7. Live recovery

A live recovery procedure is introduced to make it possible to resume working as fast as possible, in the rare occasion that the communication with the real time computer was lost during treatment execution. The Simodont will self-detect this fault state. It will automatically capture the latest state of the users' work via a snapshot and then reboot the entire simulator. After the reboot of the simulator, the user will be able to start again the case and load the snapshot saved by the system, such that he can resume his work working on the Simodont.

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