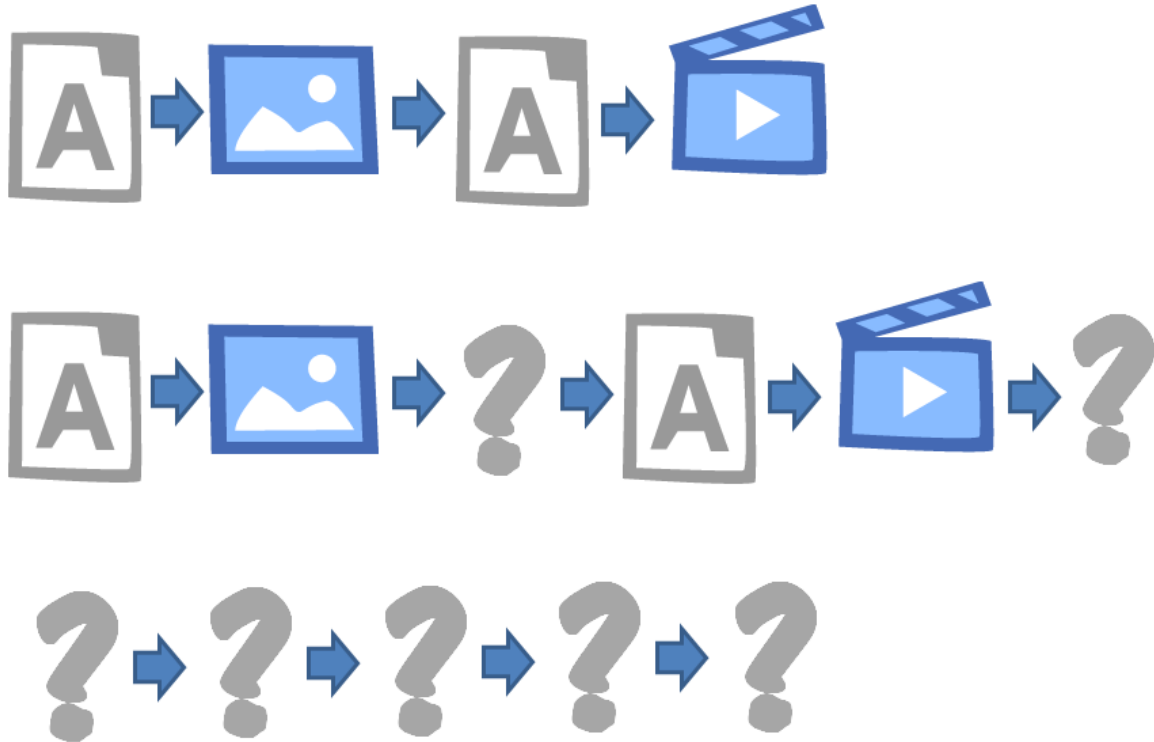


## Manual 'Create Learning Path (lesson, quiz)'

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## ***What is a Learning Path?***

A learning path is a sequence of texts, images, videos, 'interactive items' and questions. These may be presented in a fixed or in a random order.




With digital media and e-learning, passive content and questions can be easily mixed. Only passive content, as in the top example in the graphic, may be called a '*lesson*', whilst only questions, as in the bottom example in the graphic, may be called a '*quiz*'. But in fact all combinations are possible. Therefore we name all these a '*learning path*'.

## ***Personalised learning paths***

Some content may be applicable for many target groups, whilst other content may be of use only for specific groups. In AnatomyTOOL it is easy to create these specific combinations in learning paths tailored to different target groups. It is just a matter of selecting the content items and reordering them to the desired order.

# Example learning Path

## Example: a quiz




### Quiz 'Digestive System'

A quiz with a number of questions about the anatomy of the digestive system.

Your score: **100 %**

The questions in this Learning Path / quiz:

Click on a part of the colon that is secondary retroperitoneated



Which structure is indicated with a question mark?

Jejunum

bursa omentalis (lesser sac)

Pancreas

[Check](#)

Which of the following structures are made of peritoneum?

Mesentery

Transverse\_mesocolon

Meso-appendix

Gastrocolic\_ligament

Hepatogastric\_ligament

Falciform\_ligament

Round\_ligament\_of\_liver

Coronary\_ligament

Greater\_omentum

Omental\_bursa

[Check](#)

A 12-year-old boy is taken to the Accident & Emergency department, presenting with fever, nausea and abdominal pain. The symptoms and additional examination (leukocytes) quickly lead to the diagnosis 'acute appendicitis'. A CT scan shows an inflamed appendix in retrocecal position, surrounded by oedema. The boy is taken to the OR for laparoscopic appendectomy. Ligation of the branches of which artery is required in order to prevent excessive blood loss during the procedure?

Superior epigastric artery

Inferior epigastric artery


Coeliac trunk

Superior mesenteric artery

Inferior mesenteric artery

[Check](#)

Drag and Drop



Gastroduodenal artery

Short gastric artery

Left gastric artery

Splenic artery

Left gastroepiploic artery

[Check](#)

A 35-year-old man suffered from sharp abdominal pain and had been vomiting blood for two days before he died without seeking medical help. The autopsy report mentions that a perforated ulcer in the posterior part of the first portion of the duodenum had damaged an adjacent artery. Which artery is this most likely?

Gastroduodenal artery

Short gastric artery

Left gastric artery

Splenic artery

Left gastroepiploic artery

[Check](#)

Which structures can be seen on this Endoscopic Retrograde Cholangiopancreatography?

Ductus choledochus / Bile duct

Major duodenal papilla (Vater)

Pancreas


Ductus hepaticus dexter / Right hepatic duct

Ductus cysticus / Cystic duct

V. portae / Portal vein

[Check](#)

Click on the bile duct!



[Download](#) [Embed](#)

Which structure is indicated by the arrow?

Ductus hepaticus / Hepatic duct

V. portae / Portal vein

V. hepatica / Hepatic vein

A. hepatica propria / Proper hepatic artery

Ductus choledochus / Bile duct

[Check](#)

The image shows an angiography of the superior mesenteric artery (SMA). A canule has been traversed through the aorta and inserted into the SMA where it arises from the aorta (at A). Contrast agent has been injected into the SMA. In the blanks below fill in the names of the parts of the digestive system that are supplied at that place.

Supplied intestine at B:

Supplied intestine at D:

[Check](#)

## Step 1. Sign in

To submit content on AnatomyTOOL you need to have a (free) account with 'student' or 'teacher' rights. Create a free account, if you haven't got one, and request for the rights.

Sign in on AnatomyTOOL.

## Step 2. Preparation

It is advisable to first collect (and if not yet existing: create) the items (documents, pages, questions, etc.) that should be in the Learning Path.

You can use and combine questions you created yourself and questions that are already in AnatomyTOOL's question pool (originating from different institutions).

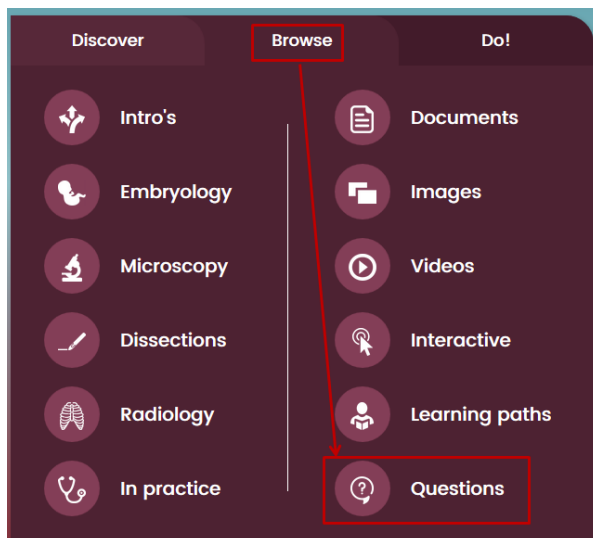
## Finding available questions in the platform



**Warning!** This functionality is still in development and does not yet function at the intended quality level.

You can search the questions that are available already in AnatomyTOOL's question pool.

Browse > Questions



Select filters > View questions

**ANATOMYTOOL** Test yourself

**Anatomical Structures**

Cardiovascular system (487)

Remove

Add another item

Include parts of this/these structure(s)

Anatomical Region

Anatomical System

Clinical Discipline

Language

**Topics**

- Introductions
- Gross
- Tables & diagrams
- Dissection
- Embryology
- Microscopy
- Radiology
- Anatomy in Practice
- Pathology

← Select topics with the filters

Selected: Anatomical Structures: Systema cardiovasculare

Topics: Gross, Anatomy in Practice

Language: Any

**1. Select**

**2. Found questions**

Start quiz

View questions

Question ID	Author	Type	Systema	Cor	Thorax	Topics	Level	Language
Circulation Q#01	chulsman	DragText	Systema cardiovasculare	Cor	Thorax	Introductions, Anatomy in Practice	Academic health sciences students	English
Circulation Q#02	chulsman	DragText	Systema cardiovasculare	Cor	Thorax	Introductions, Anatomy in Practice	Academic health sciences students	English
Circulation Q#03	chulsman	DragText	Systema cardiovasculare	Cor	Thorax	Introductions, Anatomy in Practice	Academic health sciences students	English
Circulation Q#04	chulsman	DragText	Systema cardiovasculare	Cor	Thorax	Anatomy in Practice	Academic health sciences students	English
Circulation Q#05	chulsman	MultiChoice	Systema cardiovasculare	Cor	Thorax	Introductions, Anatomy in Practice	Academic health sciences students	English

The list gives the type of question, the anatomical structures involved in the question, the topics (gross, microscopy, etc.), a rough indication of the level of the question and its language. Click a question to see it.

## Circulation Q#01

Language English

*Given:* The blood circulates within the body to provide O<sub>2</sub> and nutrients to all tissues and organs. The blood vessels differ in size and type (coming from the heart or going to the heart).

*Task:* Give the correct order of blood vessels for this circulation starting with **the heart**.

1.

2.

3.

4.

5.

6.

Arteriole

Vein

Capillary

Heart

Venule

Artery

Check

[Download](#) [Embed](#)

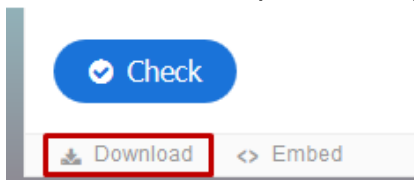
By: C. Hulsman, University Maastricht

Make a note of the titles of questions that you would like to use in your quiz.

## Copying available questions

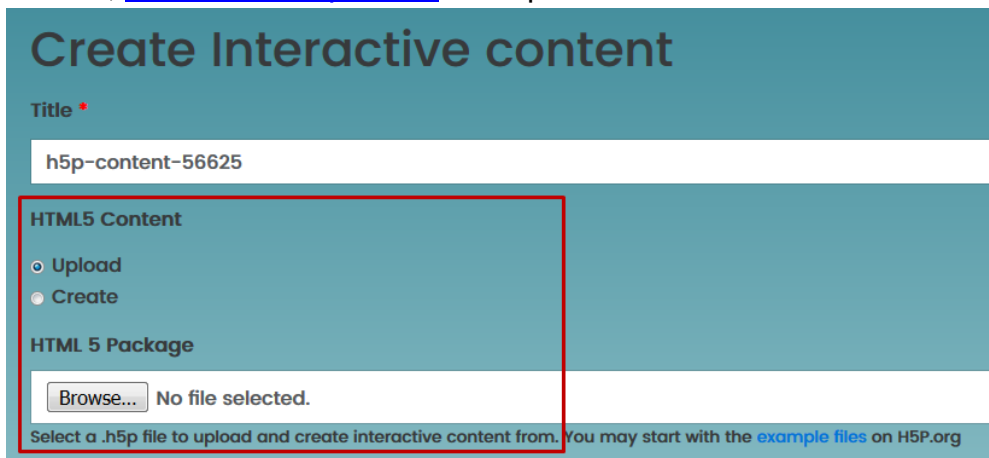
If you want to use questions created by others and you want to use them for quizzes that are more than trivial or temporary it may be beneficial to create an own copy of these questions. This is because the author of the original question can always change or even delete the question. Moreover, in an own copy, you can make changes to your own needs. The disadvantage is that you are responsible to have the new item reviewed. To make a copy:

1. Download the question to your computer



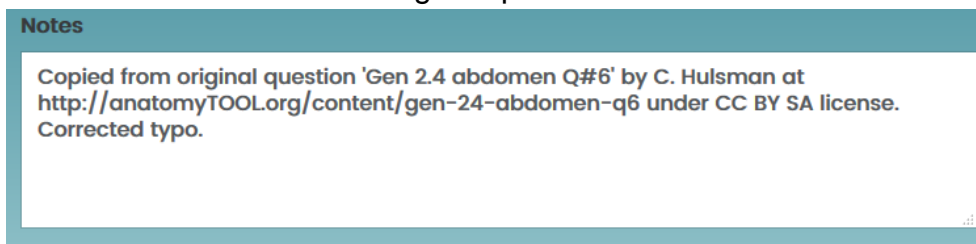
You get a so-called H5P question file. [What is this?](#)

2. Next, [create a new question](#) and upload the H5P file into it:

A screenshot of the 'Create Interactive content' form. The title 'Create Interactive content' is at the top. Below it is a 'Title' field with the text 'h5p-content-56625'. Underneath is the 'HTML5 Content' section, which has two radio buttons: 'Upload' (selected) and 'Create'. Below that is the 'HTML 5 Package' section, which has a 'Browse...' button and the text 'No file selected.'. At the bottom of this section, there is a note: 'Select a .h5p file to upload and create interactive content from. You may start with the [example files](#) on H5P.org'.

Fill out the rest of the form.

Make sure to attribute the original question in the textbox 'Credit'. Example:

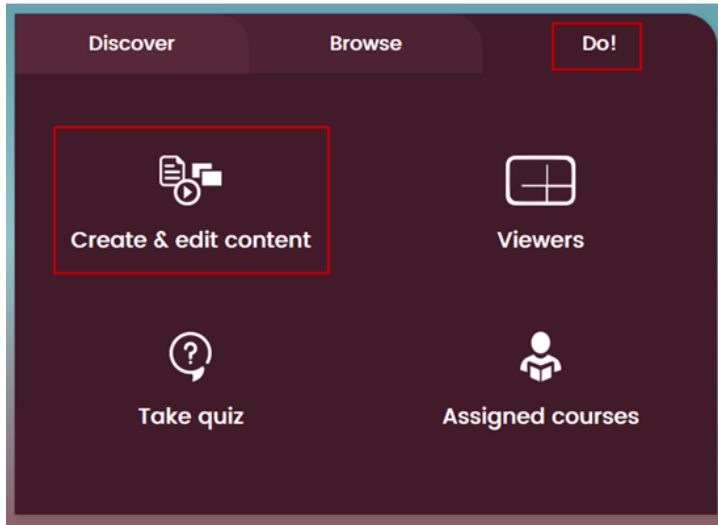
A screenshot of the 'Notes' field in the form. The text inside the field reads: 'Copied from original question 'Gen 2.4 abdomen Q#6' by C. Hulsman at <http://anatomyTOOL.org/content/gen-24-abdomen-q6> under CC BY SA license. Corrected typo.'

[Learn more how to correctly credit materials under Creative Commons license.](#)

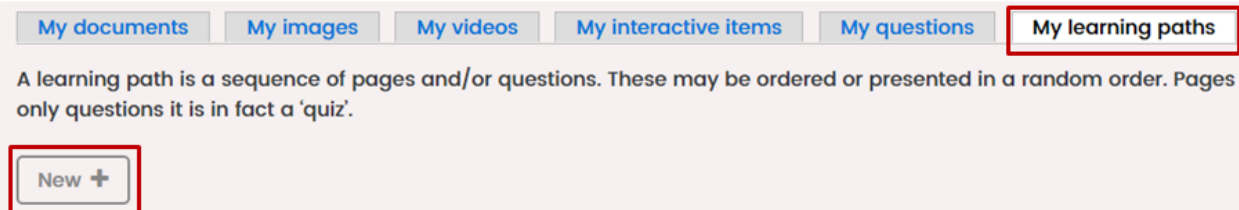
Now the copy is yours!

### Step 3. Create a new Learning Path

Do! → Create & edit content



Choose the tab 'My learning Paths' and click 'New' to create a new item.



## Step 4. Create the settings for the Learning Path as a whole

For a new learning path, first create the settings for the Learning Path as a whole:

Give the learning path a title, a description and write an introductory 'cover page text' that can contain instructions how to use the Learning Path.

The screenshot shows a form for creating a learning path. It is divided into several sections: Title, Description, Language, and Introduction. Each section has a text input field and a red callout box with instructions. The 'Title' section has the text 'Quiz 'Digestive System'' and a callout box saying 'Replace auto-generated title by meaningful title'. The 'Description' section has the text 'A quiz with a number of questions about the anatomy of the digestive system.' and a callout box saying 'Provide a short description'. The 'Language' section has the text 'English'. The 'Introduction' section has a rich text editor with the text 'Quiz 'Digestive System'' and a callout box saying 'Write an introductory text'. Below the title in the introduction section, there is additional text: 'Answer the following questions. Be sure to click the 'Check' button below each question, or your answer will not be evaluated and counted. Note that if you go backward, you need to enter your answers to the revisited questions again.'

**Title \***

Quiz 'Digestive System'

The name of the Learning Path.

**Description**

A quiz with a number of questions about the anatomy of the digestive system.

**Language**

English

**Introduction (Edit summary)**

Quiz 'Digestive System'

Answer the following questions.  
Be sure to click the 'Check' button below each question, or your answer will not be evaluated and counted.  
Note that if you go backward, you need to enter your answers to the revisited questions again.



## Set behaviour of the learning path.

▾ Taking/availability options

<b>Taking options</b>	<input checked="" type="checkbox"/> <b>Allow Resume</b> Whether to allow users to leave the Learning Path incomplete and then resume it from where they left off.
<b>Availability options</b>	<input checked="" type="checkbox"/> <b>Allow skipping items</b> Whether to allow users to skip items in the learning path
	<input checked="" type="checkbox"/> <b>Allow jumping</b> Whether to allow users to jump between items using a menu in the learning path
	<input checked="" type="checkbox"/> <b>Backwards navigation</b> Whether to allow user to go back and revisit their answers
	<input type="checkbox"/> <b>Repeat until correct</b> Require the user to re-try a question until they answer it correctly.
	<input type="checkbox"/> <b>Mark Doubtful</b> Allow user to mention if they are not sure about the answer
	<input checked="" type="checkbox"/> <b>Show passed status</b> Show the status, if the user has previously passed

## You can choose to shuffle the items or draw a subselection.

**Randomize items?**

- No randomization: display items in the set order
- Random order: display all items in this learning path in a random order (the learning path will always consist of the same items)
- Random draw: draw subselection of items from this learning path

## You can provide feedback based on the achieved results.

If this learning path contains questions, you can grade and provide feedback to the students in two ways. You may use both, one of both, or none:

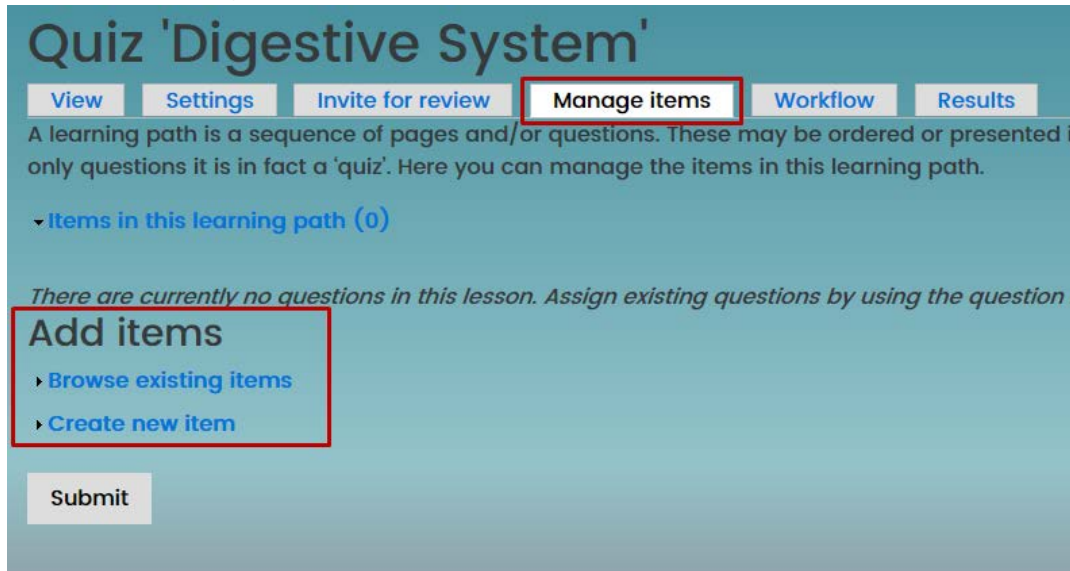
- You can set a pass/fail percentage and give textual feedback for each (tab 'Pass/fail' options).
- You can give textual feedback per range of scores (tab 'Result Comments'). This does not influence passing or failing.

<b>Pass/fail options</b>	<b>Pass score for learning path (%)</b>
<b>Result Comments</b>	<input type="text" value="75"/> Give the percentage to score in order to pass (enter as a number)
	<b>Text to show if passed</b> <input type="text" value="Well done!"/>

## Step 5. Collect the items in the learning path

Next, collect the items that should be in the learning path.

Click tab 'Manage items'.

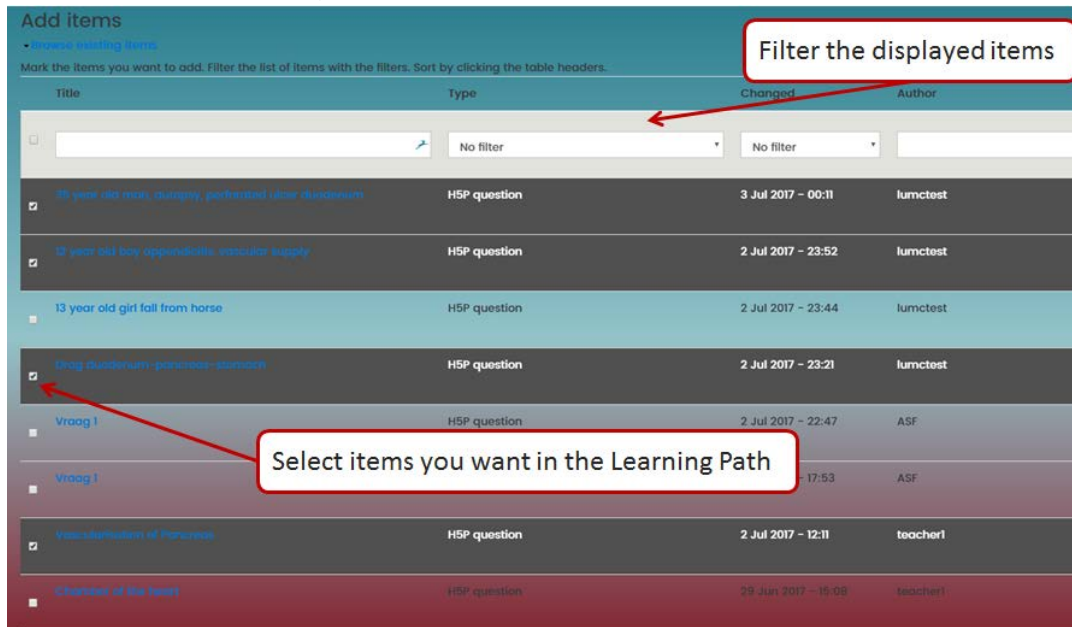


The screenshot shows the 'Quiz Digestive System' interface. At the top, there are tabs: 'View', 'Settings', 'Invite for review', 'Manage items' (highlighted with a red box), 'Workflow', and 'Results'. Below the tabs, there is a text block explaining that a learning path is a sequence of pages and/or questions. A section titled 'Items in this learning path (0)' is shown, followed by a message: 'There are currently no questions in this lesson. Assign existing questions by using the question...'. Below this, there is a red-bordered box containing the 'Add items' section with two options: 'Browse existing items' and 'Create new item'. A 'Submit' button is located at the bottom left of the interface.

You can add items to the Learning Path from the existing items in AnatomyTOOL, or create new items.

## Find and add existing items to the Learning Path

Choose 'Browse existing items' to find and add existing items. You will get a list of all available items. You can filter which items are shown. Select the items you want to include in the Learning Path.

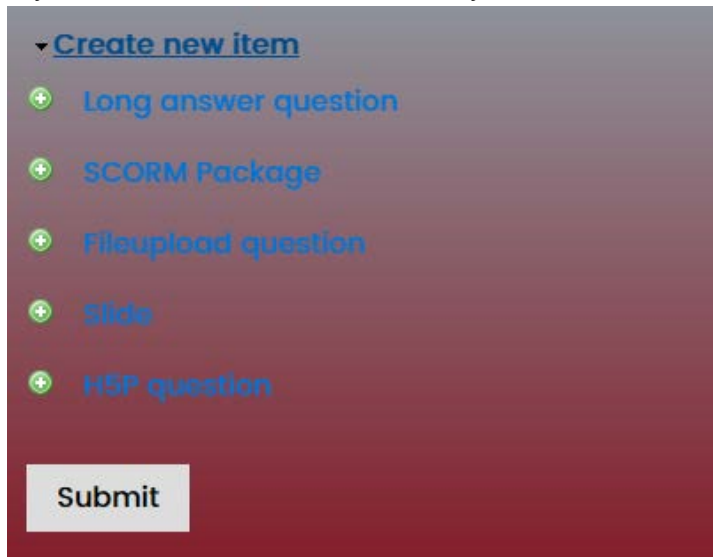


The screenshot shows the 'Add items' interface. At the top, there is a red-bordered box with the text 'Filter the displayed items'. Below this, there is a table with columns: Title, Type, Changed, and Author. The table contains several rows of items, each with a checkbox in the first column. A red arrow points from the 'Filter the displayed items' box to the filter dropdowns in the table. Another red-bordered box with the text 'Select items you want in the Learning Path' has a red arrow pointing to the checkboxes in the table.

Title	Type	Changed	Author
<input type="checkbox"/>	No filter	No filter	
<input checked="" type="checkbox"/> 18 year old male, anatomy, perforated ulcer duodenum	H5P question	3 Jul 2017 - 00:11	lumctest
<input checked="" type="checkbox"/> 12 year old boy appendicitis, vascular supply	H5P question	2 Jul 2017 - 23:52	lumctest
<input type="checkbox"/> 13 year old girl fall from horse	H5P question	2 Jul 2017 - 23:44	lumctest
<input checked="" type="checkbox"/> 18kg duodenum - pancreas - stomach	H5P question	2 Jul 2017 - 23:21	lumctest
<input type="checkbox"/> Vraag 1	H5P question	2 Jul 2017 - 22:47	ASF
<input type="checkbox"/> Vraag 1		-17:53	ASF
<input checked="" type="checkbox"/> vascularisation of pancreas	H5P question	2 Jul 2017 - 12:11	teacher1
<input type="checkbox"/> Chambers of the heart	H5P question	29 Jun 2017 - 15:08	teacher1

## Create new items for the Learning Path

If you choose 'Create new item', you can choose a number of different types of items.



'Long answer question' is an open answer question. Its creation form is self-explanatory.

'SCORM Packages' are independent packages with e-learning that abide to the international SCORM standard. They can be played in AnatomyTOOL. The creation form allows to upload a SCORM package.

'File upload question' allows the student to upload a file. Its creation form is self-explanatory. 'Long answer question' and 'File upload question' are the only two non-H5P questions used in AnatomyTOOL, as they offer possibilities that presently do not yet exist in a H5P variant.

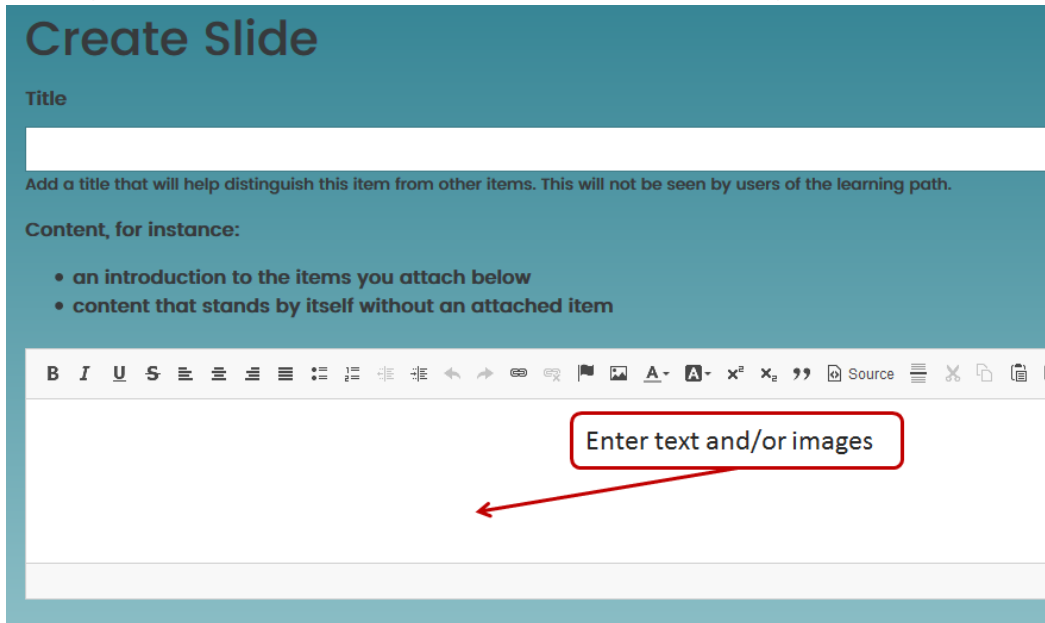
'Slide' is a format specific for learning paths. It is discussed in the next chapter.

'H5P question' allows to create a new H5P question. Creating H5P questions is explained in a [separate AnatomyTOOL manual](#).

## Slides in Learning Paths

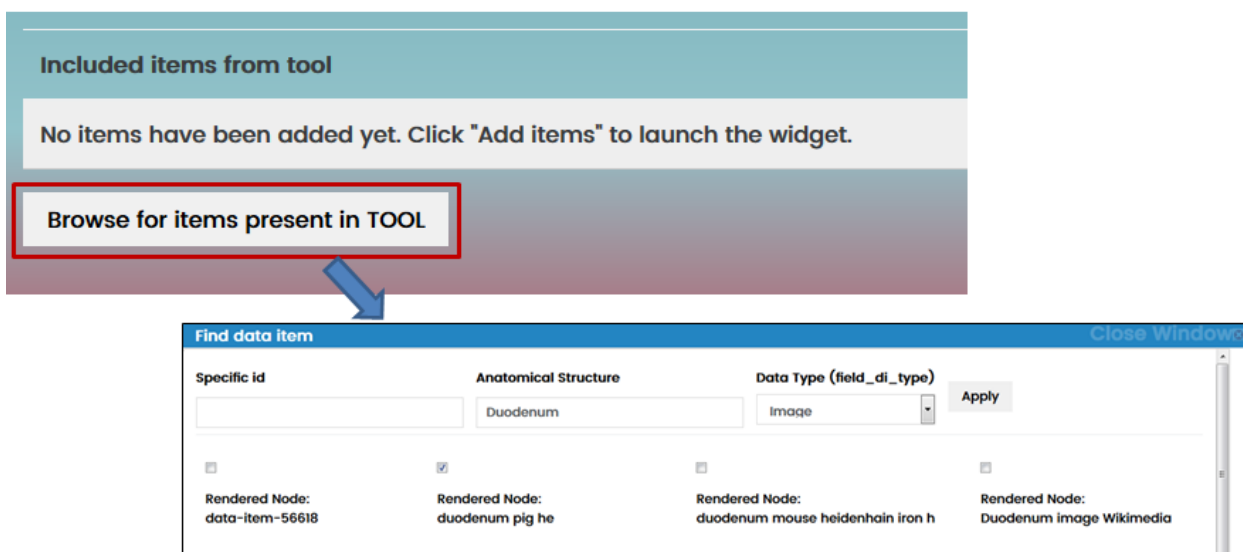
A slide in a learning path is a simple web page / blog, that is shown at a certain point in the learning path, in analogy to a slide in a presentation. It is similar to the Document

type 'blog', but different from that, it only appears within the learning path to which it belongs. Hence, it will not be found in the Documents gallery.



## Inserting documents, blogs, images, video's, interactive items, etc. in a Learning Path

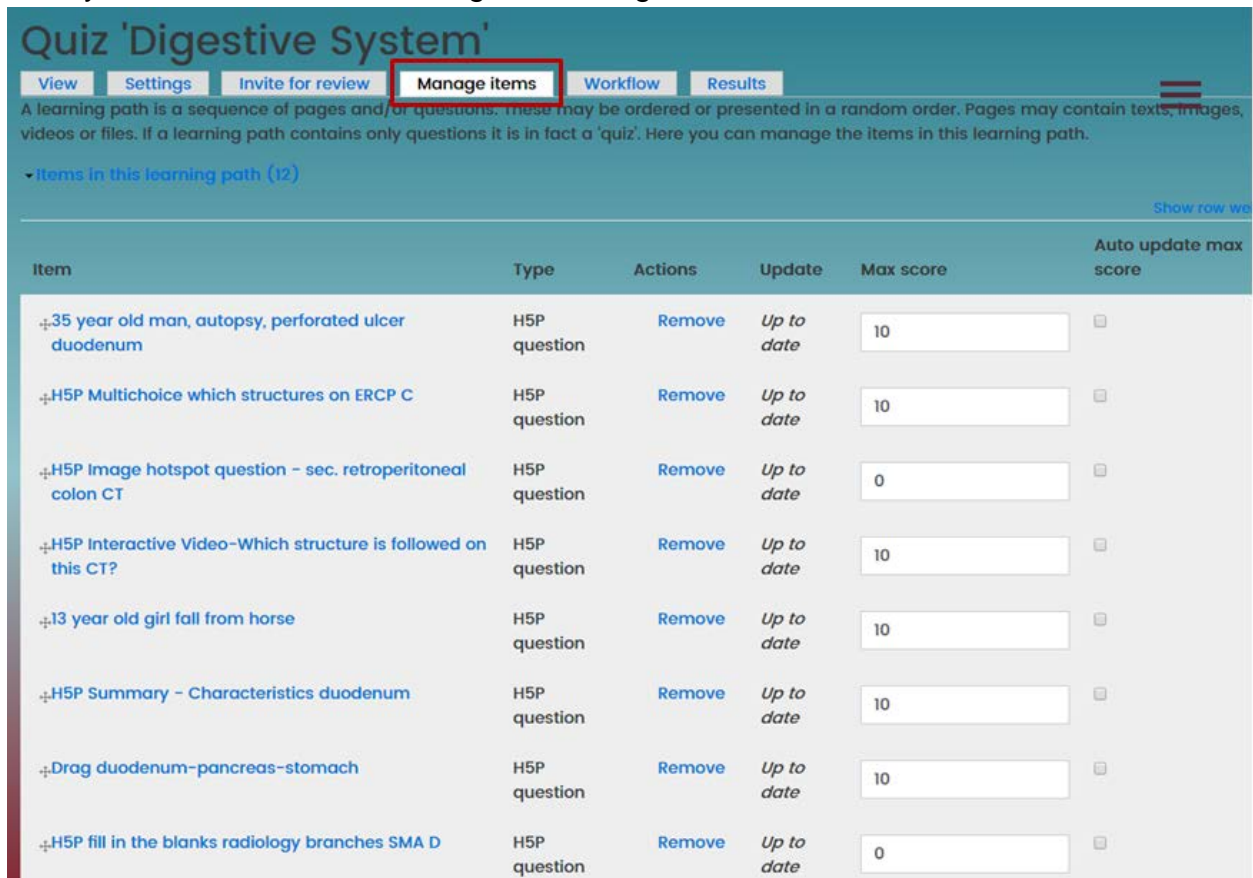
Documents, blogs, images, video's, interactive items, etc. presently cannot yet be inserted in a learning path directly, but they must be included in a 'slide' first. This is a slight impracticality that hopefully will be resolved in future upgrades of AnatomyTOOL. A slide thus functions as a kind of container for the static content.



Items can be searched by their id, anatomical structure or data-type.

## Step 6. Manage items: determine order, drawing of items and scores per question

After you have added the items, go to 'Manage items'



Quiz 'Digestive System'

View Settings Invite for review **Manage items** Workflow Results

A learning path is a sequence of pages and/or questions. These may be ordered or presented in a random order. Pages may contain texts, images, videos or files. If a learning path contains only questions it is in fact a 'quiz'. Here you can manage the items in this learning path.

Items in this learning path (12) [Show row wa](#)

Item	Type	Actions	Update	Max score	Auto update max score
±35 year old man, autopsy, perforated ulcer duodenum	H5P question	Remove	Up to date	10	<input type="checkbox"/>
±H5P Multichoice which structures on ERCP C	H5P question	Remove	Up to date	10	<input type="checkbox"/>
±H5P Image hotspot question - sec. retroperitoneal colon CT	H5P question	Remove	Up to date	0	<input type="checkbox"/>
±H5P Interactive Video-Which structure is followed on this CT?	H5P question	Remove	Up to date	10	<input type="checkbox"/>
±13 year old girl fall from horse	H5P question	Remove	Up to date	10	<input type="checkbox"/>
±H5P Summary - Characteristics duodenum	H5P question	Remove	Up to date	10	<input type="checkbox"/>
±Drag duodenum-pancreas-stomach	H5P question	Remove	Up to date	10	<input type="checkbox"/>
±H5P fill in the blanks radiology branches SMA D	H5P question	Remove	Up to date	0	<input type="checkbox"/>

You can drag the items in a desired order.

Warning: certain types of H5P questions do not yet report their score to a quiz they are embedded in. These are:

- Image hotspot question (aka 'Find the hotspot')
- Fill in the blanks question

This will hopefully be fixed by H5P, but for now we should prevent this shortcoming to affect the quiz result by setting the max. score to 0 for those question types, as shown below.

Item	Type	Actions	Update	Max score
±35 year old man, autopsy, perforated ulcer duodenum	H5P question	Remove	Up to date	10
±H5P Multichoice which structures on ERCP C	H5P question	Remove	Up to date	10
±H5P Image hotspot question - sec. retroperitoneal colon CT	H5P question	Remove	Up to date	0
±H5P Interactive Video-Which structure is followed on this CT?	H5P question	Remove	Up to date	10

If you had chosen 'Random draw' as behaviour for the Learning Path, you can now set how many questions you want to draw randomly and which questions are compulsory:

**Number of random items. These will be drawn from the items in the list that are NOT set to compulsory**

0

The number of items to be randomly selected each time someone takes this Learning Path. Total number of items in a learning path = number random items + number compulsory items.

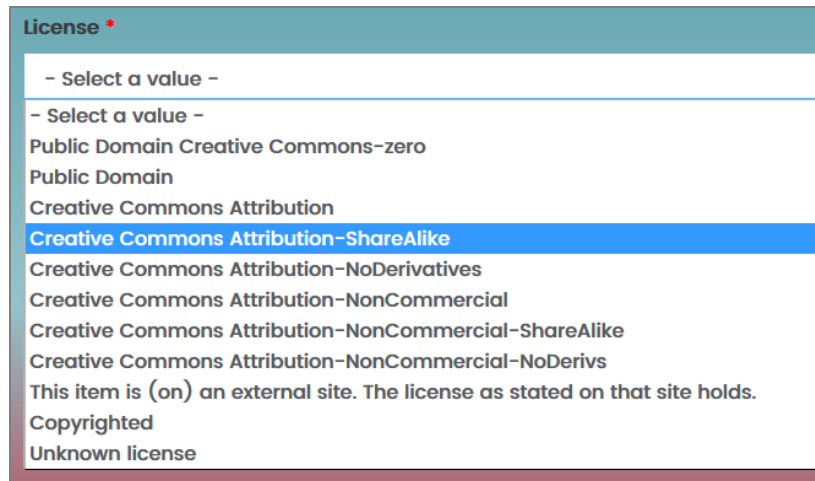
**Compulsory**

## Step 7. Provide metadata

You will need to provide some information about the Learning Path you created:

- **About the Learning Path: License, institution, language**

Select a **license** for the Learning Path.

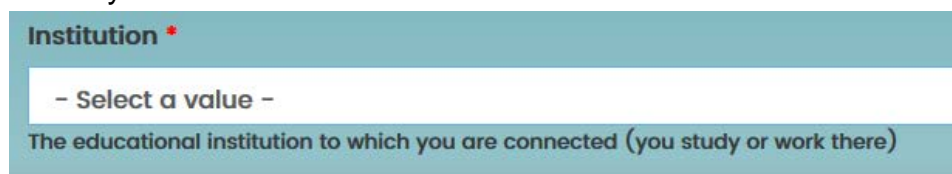


The image shows a dropdown menu for selecting a license. The menu is titled "License \*" and contains the following options: "- Select a value -", "- Select a value -", "Public Domain Creative Commons-zero", "Public Domain", "Creative Commons Attribution", "Creative Commons Attribution-ShareAlike" (highlighted in blue), "Creative Commons Attribution-NoDerivatives", "Creative Commons Attribution-NonCommercial", "Creative Commons Attribution-NonCommercial-ShareAlike", "Creative Commons Attribution-NonCommercial-NoDerivs", "This item is (on) an external site. The license as stated on that site holds.", "Copyrighted", and "Unknown license".

Which should I choose?

- All [Creative Commons licenses](#) ensure that you will be credited.
- **Creative Commons Attribution ShareAlike** is the license used by Wikipedia. It is generally a good choice.
- If you don't want someone else to benefit financially from your work, choose a license with a **NonCommercial** tag. In this case you retain the possibility to exploit the resource commercially yourself.
- If you refer to a web site or image outside AnatomyTOOL, choose 'The item is (on) an external site. The license as stated on that site holds.'
- If you simply want anyone to be able to use and adapt your work freely and also don't mind to be credited, you can choose '**Public Domain**'
- Do **not** use 'Copyrighted'. Copyrighted materials are normally not allowed on AnatomyTOOL. It is included in the option list for specific cases.
- Get help to choose: <https://creativecommons.org/choose/>

Select your **institution**



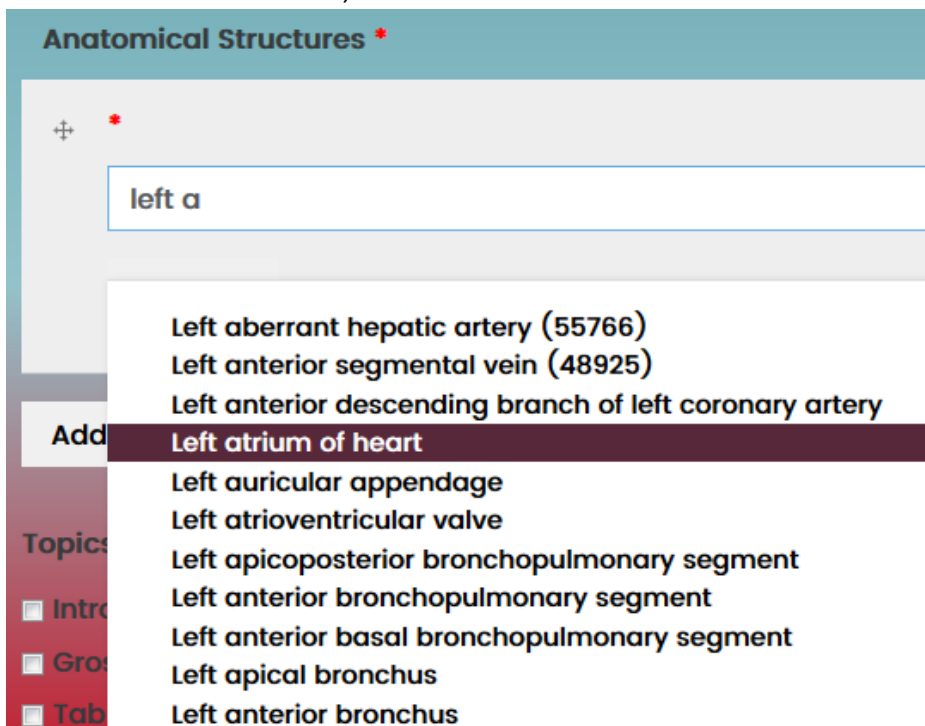
The image shows a dropdown menu for selecting an institution. The menu is titled "Institution \*" and contains the following options: "- Select a value -" and "The educational institution to which you are connected (you study or work there)".

Select the **language** of the Learning Path.



- **What is the Learning Path about? Anatomical structures, topics, level**

Tag the Learning Path with one or more **anatomical structures** that the item is about. Preferably choose specific structures instead of generic structures (e.g. 'left atrium' instead of 'heart').





Tag the Learning Path with one or more **topic** categories.



**Topics \***

- Introductions
- Gross
- Tables & diagrams
- Dissection
- Embryology
- Microscopy
- Radiology
- Anatomy in Practice
- Pathology
- Variation
- Fun / mnemonics

- 'Introductions' is meant for introductory tutorials (e.g. 'types of blood vessels', classification of the nervous system, etc.).
- 'Gross' anatomy = macroscopic anatomy (i.e. not microscopic)
- 'Tables and diagrams' is meant for listings, schemes etc.
- 'Anatomy in Practice' is meant for applications of anatomy, e.g. clinic, sports

Indicate for which **educational level(s)** your Learning Path is suitable



**Educational Level**

- General public
- Academic health sciences students
- Postacademic health sciences / professional

### Why should I fill this all out?

Your Learning Path will be findable by the anatomical structures and the topics (and the other selections) that you tagged it with. Learning Pathstagged with specific structures will also be found when users use generic search terms (*e.g. a question tagged with 'left atrium' will be found if a user searches for questions about the 'heart', the 'cardiovascular system', the 'mediastinum', the 'chest', etc.*)

**Finally**, confirm (if true) that your submission does **not infringe** on copyrights or inflict rights of any individuals → Save.

I declare that I have read and understand the [Terms of Service](#) and [Privacy Policy](#) of AnatomyTOOL and am legal. If the material I submit here, it does not infringe on copyrights and does not inflict rights of any individuals. \*

Note. You are logged in under a student account. Your submission will be *automatically deleted* after 16 months. If the material you submit may be copied and posted *permanently* under the chosen license. [Read more](#)

Save

Preview

## ***The finished Learning Path***

And there is your Learning Path:

View Settings Invite for review Manage items Workflow Results

### Quiz 'Digestive System'

Answer the following questions.  
Be sure to click the 'Check' button below each question, or your answer will not be evaluated and counted.  
Note that if you go backward, you need to enter your answers to the revisited questions again.

Language English

Items:	12
Attempts allowed:	Unlimited
Available:	Always
Pass rate:	75 %
Backwards navigation:	Allowed

Start lesson

➔ Check if your Learning Path works well as intended.

If something isn't as you like it, go to the tabs 'Settings' or 'Manage items' to change it.

***Ready!***

# Gradebook of the Learning Path

You can find the results of the students for this learning path under the tab 'Results'.

**Results**

View Settings Invite for review Manage items Workflow Results

Options

Update

Special filters

Username	Started	Finished	Score	Evaluated	Institution
<input type="checkbox"/> teacher1	3 Jul 2017 - 01:32	3 Jul 2017 - 01:34 (Duration: 0:02:30')	100 % <i>Passed</i>	Yes	Netherlands, Leiden - Leiden University Medical Center, Leiden University