

**Requirements**

Filemaker (written with v19.4, but should work with v16 or greater)








**Questions Data**

	Question Type	Figures	QTI		Import (I) / Export (E) Limits				OS	
			Import <sup>8</sup>	Import or API POST	Questions	Answers	Alternatives	Distractors		
1	essay	✓	✓	✓ <sup>1</sup>	1 (I/E)	1 (I/E)			Apple	Windows
2	file upload		X <sup>2</sup>	considering						
3	fill in multiple blanks	✓	✓	✓	1 (I/E)	9 (I/E)	3 (I/E) each		Apple	Windows
4	fill in multiple blanks (table)	✓	X <sup>3</sup>	✓	3 (E)	9 (E)	3 (E) each		Apple	Windows
5	formula question	X <sup>2</sup>	X <sup>2</sup>	X <sup>2</sup>						
6	matching	✓	✓ <sup>4</sup>	✓	9 (I/E)	9 (I/E)		2 (E) total	Apple	Windows
7	multiple answers	✓	✓	✓	6 (I/E)	6 (I/E)			Apple	Windows
8	multiple choice	✓	✓ <sup>5</sup>	✓	1 (I/E)	6 (I/E)			Apple	Windows
9	multiple drop down	✓	✓	✓	6 (I/E)	6 (I/E)		3 (I/E) each	Apple	Windows
10	multiple drop down (table)	✓	X <sup>3</sup>	✓	3 (E)	9 (E)		3 (E) each	Apple	Windows
11	numerical answer	✓	✓ <sup>6</sup>	✓ <sup>6</sup>	1 (I/E)	1 (I/E)			Apple	Windows
12	short answer	✓	✓	✓	1 (I/E)	1 (I/E)		3 (I/E) total	Apple	Windows
13	text (no question)	✓	✓	✓ <sup>7</sup>					Apple	Windows
14	true/false	✓	✓	✓	1 (I/E)	1 (I/E)			Apple	Windows

**Notes**

- Question feedback is imported/exported for general comments only. Answer-specific comments are ignored.
- possible, but **need real world example**
- the table format is non-existent in QTI; it is generated in the database via HTML during export; if present in QTI quiz, the question is imported as a 'multiple drop down' and the table headers and questions will need to be fixed; current table is limited to 4X4
- question distractors not imported (cannot figure out how to do so from the XML schema)
- imports follow XML data structure, if the correct answer is listed first on Canvas, it will be imported as answer "A" in the database. To avoid all multiple choice answers being "A" after re-exporting, either: 1) select shuffle answers when exporting the quiz or 2) rearrange the answers manually in the question database.
- answer in the range' works, need to add 'exact answer' and 'answer with precision'; **need real world example**
- properly positioning the 'text' question (spacer) during QTI export is not implemented — related to known issue 1
- all questions are imported **without** a question number, question numbers are used in the database to order questions for export

















## Quiz import compatability formats

	File Format	Import	Figures	
1	CSV	✓ <sup>1</sup>	X <sup>2</sup>	
2	FileMaker	✓ <sup>1</sup>	✓	
3	Microsoft Excel	✓ <sup>1</sup>	X <sup>2</sup>	
4	QTI 1.2 XML Quiz			
	single quiz	✓	✓ <sup>3</sup>	
	all quizzes	✓	✓ <sup>3</sup>	
5	TAB delineated	✓ <sup>1</sup>	X <sup>2</sup>	

### Notes

- 1 efficient import will require a template that specifies datafield targets, **considering** generating templates
- 2 figures need to be manually imported (drag/drop) into the database
- 3 exported QTI packages have a subfolder named after the folder in which the files are stored on Canvas. It contains all quiz-associated figures **as long** as the user has the appropriate file permissions. In a multi-instructor setting, figures may be missing if an instructor stores figures in their userspace. This is a Canvas limitation.

## Quiz Export

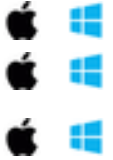
	File Format	Export	Figures	Key	
1	HTML → Word				 
	single quiz	✓	✓ <sup>1,2</sup>	✓ <sup>5</sup>	 
	selected quizzes	✓	✓ <sup>1,2</sup>	✓ <sup>5</sup>	 
	all quizzes	✓	✓ <sup>1,2</sup>	✓ <sup>5</sup>	 
2	QTI 1.2 package <sup>7</sup>				 
	single quiz	✓	✓ <sup>4</sup>	✓ <sup>6</sup>	 
	selected quizzes	✓	✓ <sup>4</sup>	✓ <sup>6</sup>	 
	all quizzes	✓	✓ <sup>4</sup>	✓ <sup>6</sup>	 
3	QTI 1.2 multi-quiz package	X <sup>3</sup>	X <sup>3</sup>	X <sup>3</sup>	

## Notes

- 1 HTML is exported into a folder named after the quiz. It includes a 'quiz.html' file and a folder named 'figures', which includes the appropriate figures. The 'quiz.html' file can be opened by Microsoft Word. Word and other applications do not always honor the image size settings, but should be adjustable within the importing application.
- 2 exported questions: matching question answers are **not mixed** and need to be adjusted after export; text\_only questions are numbered in the database to facilitate ordering, but will not be numbered following import into Canvas
- 3 this isn't really needed given that quiz upload is rapid and can be looped easily
- 4 Canvas does not appear to honor the 'height' tag following import, but does honor the 'width' tag for figures, as such all figures are proportionally scaled automatically in the database when width adjustments are made
- 5 the quiz key is exported into the same folder as the quiz.html and called quiz\_key.html
- 6 key is not included for essay questions, this is a Canvas limitation
- 7 if a quiz export is not allowed to complete or is prematurely canceled, this may cause the Canvas import to lock up. Evidence of this is obvious on the Import status page. In this event, there are two options: 1) allow Canvas to clear the problem automatically (which can take up to 24 hrs) or 2) reset the course page. As a consequence, be sure to test exports using the developmental course.

## Question Format Options











	Format	Import	Export
1	HTML	X <sup>1</sup>	√ <sup>2</sup>
2	plain text	√	√
3	RTF	X <sup>1</sup>	√ <sup>2</sup>



## Notes

- 1 all question formatting is stripped during import (to avoid a display mess)
- 2 any text in the 'question' section can be formatted using Filemaker. Formats ( *italic*, underline, etc) will be sent to Canvas in HTML automatically. Instead of <strong>/bold Filemaker uses "font style" which is not recognized by Canvas. The following characters are substituted automatically in CSS transform to comply with XML constraints <, >, ", ', &. Also, Unicode characters for lowercase Greek alphabet are hard-coded (i.e. &alpha; → &#x3B1) and should be automatically converted into safe XML format. Other Unicode characters will need to be added individually. If formatted HTML is buggy on Canvas after export, check for Unicode characters.



















































## Data Export Format Options

	File Format <sup>2</sup>	Export	Figures	 
1	CSV	✓	✓ <sup>1</sup>	 
2	Microsoft Excel	✓	✓ <sup>1</sup>	 
3	Filemaker	✓	✓	 
4	TAB delineated	✓	✓ <sup>1</sup>	 

### Notes

- 1 figures can be exported but are not linked to the data file
- 2 the database can be coded to export virtually any text-based format, it is just a matter of implementation, however, the options above are stanards-based and should serve nearly any need.

Exported QTI package settings

	Feature	Options	implemented		
1	access code generation	random string	✓		
2	allow multiple attempts	number	✓		
3	anonymous submissions	true or false	✓		
4	dates				
	due date	date/time	✓		
	availability from	date/time	✓		
	available until	date/time	✓		
	show answer start date	date/time	✓ <sup>5</sup>		
	show answer until date	date/time	✓ <sup>5</sup>		
	show correct answers	date/time	✓ <sup>5</sup>		
5	hide results	always; until last attempt	✓		
6	post feedback	automatic	X <sup>2</sup>		
7	Proctorio	true or false	✓ <sup>3</sup>		
8	publish	true or false	✓		
9	question bank incorporation	automatic	✓		
10	question bank suppression		X <sup>4</sup>		
11	question number	number	✓		
12	quiz point value	number	✓		
13	quiz type	gnment; graded_survey; practice	✓		
14	require LockDown browser	true or false	✓ <sup>7</sup>		
15	scoring policy	hightest or latest	✓		
16	suffle answers	true or false	✓		
17	time limit	number (min)	✓		
18	upload quiz associated figures	yes or no	✓ <sup>6</sup>		

Notes

- 1 if not specified, 'available until' date is substituted (available until is a far superior option)
- 2 if general feedback is entered into a question, it is posted to Canvas
- 3 Proctorio "Secure Exam Proctor" must be activated in Canvas Settings for the course before uploading quiz
- 4 cannot figure out if this is possible — I would like to not have an automatic Question Bank populated
- 5 unavailable if "hide results" is populated
- 6 automatically specified in upload script
- 7 Respondus LockDown Browser can be set, but I don't know if it works because I've never used it

## Quiz Management on Canvas

	Feature	implemented	added
1	Delete Quiz		
	single quiz	✓	
	selected quizzes	✓	
	all quizzes	✓	
2	Dynamic Hyperlinks		
	go to quizzes page	✓	
	go to import status page	✓	
	go to quiz preview	✓	
3	Download quiz list with IDs	✓	v. 2.5a

### Notes

- 1 be aware that the database processes data faster than Canvas servers can keep up. If a quiz does not appear to be present or deleted, go to the import status page to see what is going on.

## Question Database Organization

Features	implemented	added
1	Question tagging	
	create date or quiz tag	✓
	delete date or quiz tag	✓
	tag single question	✓
	tag all questions in found set	✓
	delete tag from found set	✓
2	Auxillary question data	
	chapter #	✓
	chapter title	✓
	chapter topic	✓
	chapter topic #	✓
	learning objectives (1,2)	✓
	question source	✓
3	Question flags	
	in process	✓
	checked	✓
	modify	✓
	selected	✓
4	Question data	
	title	✓
	question #	✓
	question format	✓
5	rapid quiz date layout	✓
<b>Notes</b>	1 searches: "exam 1" finds anything with "exam" or "1", if one wants an exact match you need to enter '==exam 1' — this is a Filemaker-specific 'feature', a script could be written to deal with this	



## Known Issues — maybe I can fix, maybe I cannot

- 1 Figure out how to specify question sort order dynamically (q\_format vs q\_#), currently set by q\_# in the database
- 2 If number of quizzes on Canvas > number of quizzes in database, an error is thrown when parsing quiz\_id (#10) after post
- 3 Proctorio settings may not align given the \$string used — specific to my settings (is this possible to change?)
- 4 TXT questions are not counted on Canvas as a question, but must be in the database, this will make questions out of register
- 5 may be a problem with capturing/deleting pre-existing \$quiz\_id if there are duplicate names (use 'Download & parse quiz IDs (cURL)' first) or scripts are terminated prematurely
- 6 can upload quizzes faster than Canvas can keep up, this can cause quizzes to fall out of register for 'Delete quiz on Canvas based on ID'
- 7 quiz settings (instructions; times; etc) not imported — need to scan assessment\_meta.xml file; current import only scans question data file, I'm not sure this is useful
- 8 The following characters cannot be present in a question as they cannot be uploaded in the XML (<, >, “, ‘, &). This is an XML limitation. Currently, a substitution calculation on export fixes this, so it may not be an issue.