



## Planning online exams using the quiz tool to minimise plagiarism (and promote learning)

The quiz tool in learn**online** can be used as an [online exam tool](#) and when well-designed is also a powerful learning tool that minimises plagiarism. To be able to make good decisions about your quiz design, you need to understand a few fundamentals. In this *Guide*, we will introduce you to key quiz concepts, show how randomisation is used to present a unique but equivalent quiz to each student and demonstrate how embedded feedback can be used to provide automated learning conversations with your students while studying online.

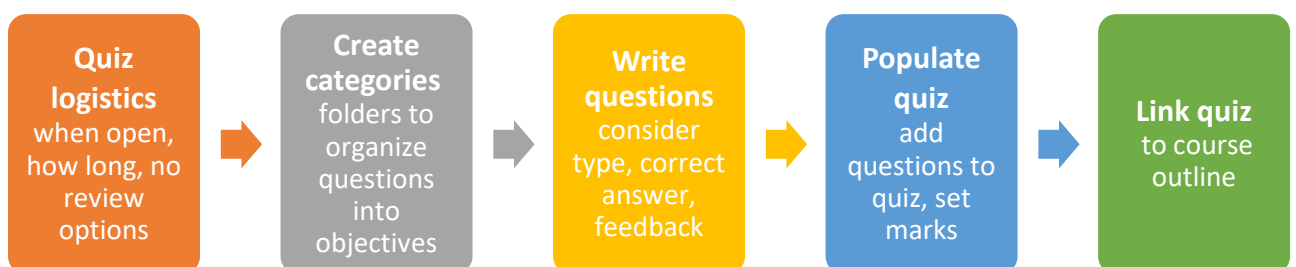
### Learning Objectives

The first step in planning quizzes is to be clear on the learning objectives that are to be assessed using the online examination.

Start by visiting your course outline and locating your assessment summary table that identifies the course objectives that are associated with your summative assessment. Are there any sub-objectives that need to be assessed? Make a list of these objectives and sub-objectives as these will form the organisational structure for your question bank.

### Understanding the quiz creation process

There are several steps to creating a summative quiz as shown in this diagram.



## Quiz logistics

You will need to make decisions about how long the quiz will be open for, remembering that for COVID-19 examination adjustments, an extra hour needs to be added onto the previous examination time. The details for your online exam must be coordinated through SAS to minimise clashes. Generally, for exams, the quiz needs to be set for only one attempt and students are not able to review results, only receive grades ([APPM 8.1.8](#)). This information is entered into the Quiz settings on your learnonline site **Add activity > Quiz > Adjust settings as per table below with modifications to suit your circumstances > Save** (Quiz help in learnonline: [Adding a quiz](#)).

| Field                           | Entry   |
|---------------------------------|---|
| Name                            | Online Examination (4 hours; Exam Week; 40%)  |
| Description                     | <p>An extra hour has been allowed for this online version of your examination.</p> <p>If you have technical difficulties when sitting the examination please contact IT help on</p> <ul style="list-style-type: none"> <li>• Local: 83025000</li> <li>• Interstate or country: 1300 558 654 for the cost of a local call</li> <li>• International: (+61 8) 8302 5000 (we can call you back to minimise your call costs)</li> <li>• Hong Kong Baptist University : 800961028 (cost of a local call)</li> <li>• Singapore: 8006162338 (cost of a local call)</li> </ul> <p>If you have questions relating to the examination itself, please contact the course coordinator on (office phone number)</p> |
| Open the quiz                   | 21 June 2020 13 00  |
| Close the quiz                  | 21 June 2020 17 00  |
| Time limit enabled              | 4 hours   |
| When time expires               | Open attempts are submitted automatically   |
| Grade<br>> Attempts allowed     | 1   |
| Layout<br>> New Page            | Every 2 questions (this layout decreases load on learnonline, minimising the risk of server overload. You can still group more questions later on if this makes sense for your exam).   |
| Layout<br>> Navigational method | Free  |

|  |                          |
|--|--------------------------|
| Question behaviour<br>> Shuffle within questions | No                       |
| Question behaviour<br>> How questions behave     | Deferred feedback        |
| Review options                                   | All unchecked            |
| Common module settings<br>> Availability         | Show on course home page |

Although it is possible to add Browser security to a quiz to reduce students' ability to copy and paste while doing an online exam (**Extra restrictions on attempts > Browser security > Full screen pop-up with some Javascript security**) remember that students can also use another device to access information.

### Create categories

The next step in planning for a summative quiz is to create the categories used to organise your quiz questions. Students don't see categories – they are for your eyes only. The category can be as simple as 'Final Exam', or detailed as a category for each concept being assessed. If you are planning to use randomisation of quiz questions so each student gets a unique set of equivalent questions for their online exam, then you will need fine grained categorisation of your question bank.

As an example, the course MATH 1063 uses randomisation (see below). A category was created for each of 6 tests, and within that, sub-categories were created for each question in the test. The sub-categories are linked to sections of the textbook, with at least 3 questions in each category. Random questions are drawn from each of these sub-categories to make unique quizzes for students.



#### Quiz 1, Week 3 (0)

Topics include revision concepts exponents, solving modulus with inequality statement and solving linear inequality statement. Also include domain and range of a function and extrema of a quadratic function.

⊗ ⚙ ← ↓

- **Revision Concepts [Exponents] (6)** ⊗ ⚙ ← ↓
- **Revision Concepts [Linear Inequalities] (6)** ⊗ ⚙ ← ↑ ↓ →
- **Revision Concepts [Modulus Inequalities] (6)** ⊗ ⚙ ← ↑ ↓ →
- **E&P 1.1 [Domain and Range] (4)** ⊗ ⚙ ← ↑ ↓ →
- **E&P 1.2 [Extrema of Quadratic Functions] (3)** ⊗ ⚙ ← ↑ ↓ →
- **E&P Appendix C [Addition formula] (3)** ⊗ ⚙ ← ↑ ↓ →
- **E&P Appendix C [Convert degree to radian] (4)** ⊗ ⚙ ← ↑ →

(Quiz help in learnonline: [Create and edit quiz categories](#)).

## Write questions

Writing good, clear questions is not easy. As your questions are for an open book examination, please refrain from using many questions that require recall, but instead draft questions that assess comprehension, applied knowledge, analysis and evaluation. Do not use textbook MCQ question sets as these are in the public domain (try Googling them and you will see why this is not a good idea). Ask your peers for feedback on your questions to ensure they are optimal.

Most people are familiar with multiple choice questions (MCQs), so if you had them in your original examination, they will translate well to online.

Extra benefits of using online MCQs include:

- They are automatically marked
- You can include media to your questions and response options (e.g. videos and images)
- MCQs written in a special format ([Aiken format](#)) can be drafted in a word document and uploaded in bulk into the question bank.
- They can provide feedback to students when they get they get a question right, wrong or both.

If you are writing MCQs for randomisation, try to make all of the questions in the category that the questions are selected from, address the same



topic. You can select to have one or more random questions being selected from a category.

(Resource: [Hints and tips for writing multiple choice questions](#)).

The [essay question type](#) in learnonline will be great for many of your short and long answer questions. Features of essay questions include

- You can add a template to the response field (e.g. a table)
- You can set the submission to be a text field, a file upload or both
- When you mark essay questions, you will mark one question at a time, i.e. all question 1 responses, then all question 2 responses.
- You can include information for graders (markers) as to how you would like the question graded.

The **description question type** is not really a question but a label that allows you to add contextual information to support your questions, such as 'Section A'.

Be careful when copying and pasting text into learnonline to ensure you are not importing code as well as your text.

When creating equivalent questions for randomisation in your quiz, write your first question and then duplicate it to make 2 or more replicate questions of the same value and edit the new question to ensure that it is assessing the same content area.

This example from the question bank in MATH 1063 shows how three replicates of questions assessing summation of vectors were created using duplication tool.



|  | Created by                         | Last modified by                   |
|--|------------------------------------|------------------------------------|
|  | First name / Surname / Date        | First name / Surname / Date        |
| <input type="checkbox"/> T <b>Question</b>   |                                    |                                    |
| <input type="checkbox"/> ☰ Vectorsum-1   | Admin User<br>3 May 2015, 11:30 PM | Admin User<br>3 May 2015, 11:30 PM |
| <b>Suppose that <math>\vec{u} = (4, -3)</math> and <math>\vec{v} = (-2, 3)</math>. Then <math> 2\vec{u} - 3\vec{v}  =</math></b> |                                    |                                    |
| <input type="checkbox"/> ☰ Vectorsum-2   | Admin User<br>3 May 2015, 11:39 PM | Admin User<br>3 May 2015, 11:39 PM |
| <b>Suppose that <math>\vec{u} = (4, 3)</math> and <math>\vec{v} = (-2, 3)</math>. Then <math> 2\vec{u} - 3\vec{v}  =</math></b>  |                                    |                                    |
| <input type="checkbox"/> ☰ Vectorsum-3   | Admin User<br>3 May 2015, 11:44 PM | Admin User<br>3 May 2015, 11:44 PM |
| <b>Suppose that <math>\vec{u} = (4, -3)</math> and <math>\vec{v} = (-2, 3)</math>. Then <math> 2\vec{u} + 3\vec{v}  =</math></b> |                                    |                                    |

Consider taking your current exam paper to a [TIU consult with an Online Educational Designer \(OED\)](#) to get advice on how it can work as an online quiz.

(Quiz help in learnonline [Adding questions to a bank](#))

### How many questions?

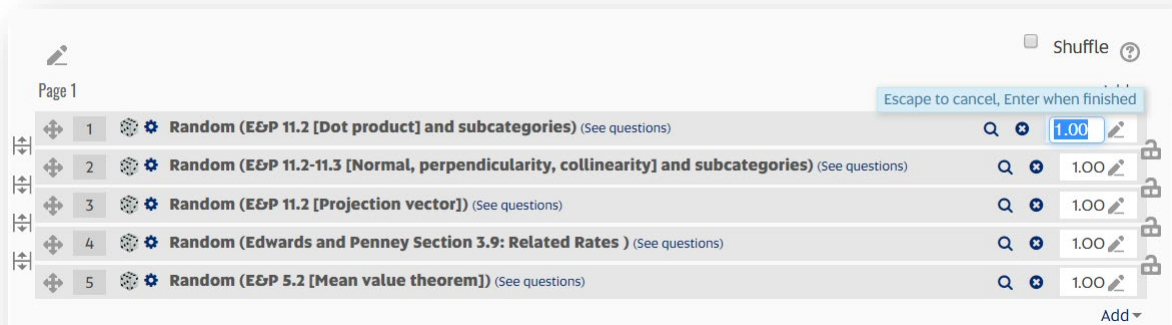
The general rule used is one MCQ question per minute. Complete your online exam yourself (or ask a peer) and double (or some say triple) the time it takes you to do the exam and that is the time students will need. There still needs to be an additional hour available for students taking online examinations. So, for a normal 3 hour exam, you should be able to do it in about an hour to an hour and a half, but your students will be allowed 4 hours.

### Populate quiz

The next step in the process of creating an online quiz is putting the questions into the quiz and finalising the layout and values of the questions in the quiz. Go to the quiz you have created and select **Edit quiz > Add > from question bank**. Browse your categories, select the questions and then select **Add selected questions to quiz**.

If using randomisation, go to the quiz and select **Edit quiz > Add > a random question** and identify the category that you wish the random question to be selected from.

This is also a great time to check the value of your questions is correct. Using the pencil tool you can quickly adjust the value of the questions to be appropriate.

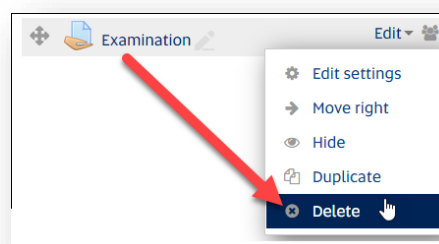


Finally reorganise the question order to make sense for your students using the cross hairs on the left. To minimise plagiarism, separate the questions onto separate pages using the double headed arrows on the left, but check to make sure the question layout makes sense.

(Quiz help in learnonline [Add a question from a bank](#)).

## Link quiz

To get your online exam to input directly into gradebook you need to link the quiz into the course outline. If you have already linked an assignment upload to your course outline, you will need to first delete the existing assessment placeholder.



You then need to link in the new quiz as the examination in your course outline.

(Quiz help in learnonline [Creating a summative assessment](#)).

## Importance of feedback

One of the strengths of quizzes is that they can provide feedback – however in online exams, this feedback will not be released to students. Feedback greatly supports learning, and this is enhanced when the time between the performance and feedback is minimised – such as in an online quiz. As you are unlikely to use this quiz as an online exam in future, take time to add in supportive feedback for learners so the questions can be re-used for formative purposes later.

When you are ready to make your quiz formative, the quiz setting that maximises feedback is **Quiz settings > How questions behave > Immediate feedback**. You can also change the number of attempts to Unlimited.

The main types of feedback in quiz questions are:

- **General feedback** – this is always presented to the student after they have attempted the question. It is a good place to write the main point that you are trying to make by asking the question.
- **Specific feedback** – this feedback is associated with each answer option in a question. If the student selects that particular answer option, the specific feedback for that option will be displayed. Specific feedback is very useful for correcting common misconceptions.
- **Combined feedback** – this option gives one response for every correct response, partially correct response and incorrect response.

An example can be seen in MATH 1063 quizzes where combined feedback is used to deliver immediate feedback in a 2-attempt quiz.





For any correct response

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Your answer is correct.  
Path: p » strong

For any partially correct response

Font family Font size Paragraph

Your answer is partially correct.  
Path: p

Options

Show the number of correct responses once the question has finished

For any incorrect response

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**Remember:**

Chain rule:  $\frac{d}{dx}[\sin(u)] = \cos(u) \frac{d}{dx}(u)$ .

**Solution:**

$$\frac{d}{dx}(2 - \sin(x^2)) = \frac{d}{dx}(2) - \frac{d}{dx}(\sin(x^2)).$$

Thus,  $0 - \cos(x^2) \frac{d}{dx}(x^2)$ , by chain rule. And therefore,  $-\cos(x^2)2x$ .

Hence,  $\frac{d}{dx}(2 - \sin(x^2)) = -2x \cos(x^2)$ .

Path: p » img

By incorporating rich developmental feedback into your quizzes, you can automate many of the learning conversations that you would have indirectly had with students while you were teaching face-to-face and promote better learning outcomes.

If you would like to ask questions about online teaching and learning related to your course, you can look through the [Preparing for online exams website](#) write to [TIU@unisa.edu.au](mailto:TIU@unisa.edu.au), have an [online consultation with a member of the TIU](#), or complete the online modules as part of [Introduction to Engaging Learners Online](#).