

Addressing tricky concepts through low stakes peer review exercises

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What is a tricky concept?

“Because learning involves transfer from previous experiences, one’s existing knowledge can also make it difficult to learn new information. . . .A . . . problematic situation occurs when people construct a coherent (for them) representation of information while deeply misunderstanding the new information. Under these conditions, the learner doesn’t realize that he or she is failing to understand.” *How People Learn*, 70.

"The concept that students often mix up on the exam."

Why does writing about a concept help?

“When a subject is taught in multiple contexts, . . . and includes examples that demonstrate wide application of what is being taught, people are more likely to abstract the relevant features of concepts and to develop a flexible representation of knowledge” (Gick and Holyoak, 1983). *How People Learn*, 62

Writing helps students clarify the differences between two concepts students often mix up.

Why low stakes? And how to do?

- Could be done in class for no-credit
- Can be done for review completion credit (outside of class)
 - Points awarded for completing the review, **not writing the answer**
 - Points awarded for writing assignment and for reviewing peer writing, **not for the correct answer**
 - Points go towards participation, or homework, or....
- There is no grading of the student's answers

What are the benefits of peer review?

Increased Comprehension

- Can show errors in thinking/answer before exams
- Allows students to work with a “rubric” and see your expectations for a quality answer (before an exam)

Builds problem solving skills

- Allows students to see how others answered the same questions (and their thought process)

Exposure to subject-specific writing

- Students to see other writing styles

Examples of Peer Review Exercises: Evolution

This example is a tricky concept that is fundamental to biology. This should be review from the first year courses but most students still struggle with it.

As we have been discussing in class, two major mechanisms of evolution are **natural selection** and **genetic drift**. In your own words (as if you were explaining this to a friend who is struggling in the class) explain the similarities and differences between these two mechanisms.

Make sure that your answer includes the following:

- (1) clear definitions of both natural selection and genetic drift
- (2) how each of these mechanisms act to cause evolution in populations
- (3) whether the outcome of each mechanism is predictable
- (4) under what circumstances each would have a large or small effect

Examples of Peer Review Exercise: Genetics

This example focuses on a tricky concept that students often miss on exams. It is meant to get students to think through the **why** (relationship between certain types of inheritance processes and resulting offspring) as opposed memorizing how to solve the problem.

Your classmate has told you that just looking at the numbers of progeny from a cross can tell you if there is epistasis involved. They then give the following example:

In sheep, there are several different coat colors, a brown coat, an off-white coat, and a tan coat which is in between brown and off-white. Brown sheep crossed to brown sheep always yield only brown sheep. Off-white sheep crossed to off-white sheep yield only off-white sheep. Tan sheep crossed with tan sheep always yield a mix of brown, tan, and off-white sheep.

Two sheep with tan coats are crossed and their offspring are as follows:

23 tan coat

10 brown coat

9 off-white coat

But you know their example is wrong. Write a response to your classmate explaining how to determine what type of genetic inheritance is occurring and why. Be sure to reference all calculations and ratios associated with the progeny necessary to answer the question.

Examples of Peer Review Exercise: Video example in Evolution

This is an example in which students are asked to watch a brief video, make observations, and interpret their observations in light of theory covered in class lectures, readings, and discussion.

You are watching the video of the bird of paradise mating dance (in the homework folder) when one of your family members walks into the room. After watching the video in amazement (because really, who wouldn't) they ask you several questions:

- Why does the bird do that?
- Why don't the females dance as well?
- Why do the females like it---how could it possibly help them choose a mate?
- After you explain (in your own words) they ask you "Doesn't that attract attention from predators, too? What about survival of the fittest?"

Examples of Peer Review Exercise: Review Article example for Disease Ecology

This example is **based on a review article** that students are assigned based on the ecology and evolution of zoonotic diseases.

There are many barriers that a pathogen has to overcome in order to spillover from the reservoir host population to humans.

In your own words, explain **what each barrier is, why it matters** (define it clearly in everyday language), how it relates to the reservoir, the spillover host (humans, for example) or the environment.

- Infection intensity
- Pathogen prevalence in reservoir host
- Pathogen survival
- Pathogen spread
- Reservoir host distribution
- Reservoir host density
- Spillover host exposure
- Spillover host susceptibility

Mock Peer Review Exercise

- Answer the prompt on your own (1-2 minutes)
- Randomly put in breakout room and answer as a group on one drive document according to your group number, link in chat (4-5 minutes)
- Look for message in chat window about starting the “review” process
- Navigate to the top of the one drive doc to see which group to review and the rubric
- Copy and paste rubric to review another group (3-4 minutes)
- Look for message in chat to return to your answer and see the review (2-3 minutes)
- Return to main session (leave breakout room button)

For you to try on your own (1-2 minutes)

Please answer the following prompt:

At freshman orientation new students are told of the many ways to get from East campus to classes on North and South. A disagreement breaks out about the fastest and safest way to get around. Taking into consideration traffic patterns, ecologically friendly modes of transportation and safety at all hours, propose the optimal method a freshman should consider to ensure a timely arrival to class.

For you to try in a group (4-5 minutes)- don't identify yourself by name

Please answer the following prompt:

At freshman orientation new students are told of the many ways to get from East campus to classes on North and South. A disagreement breaks out about the fastest and safest way to get around. Taking into consideration traffic patterns, ecologically friendly modes of transportation and safety at all hours, propose the optimal method a freshman should consider to ensure a timely arrival to class.

Reviewing another group (5 word minimum)

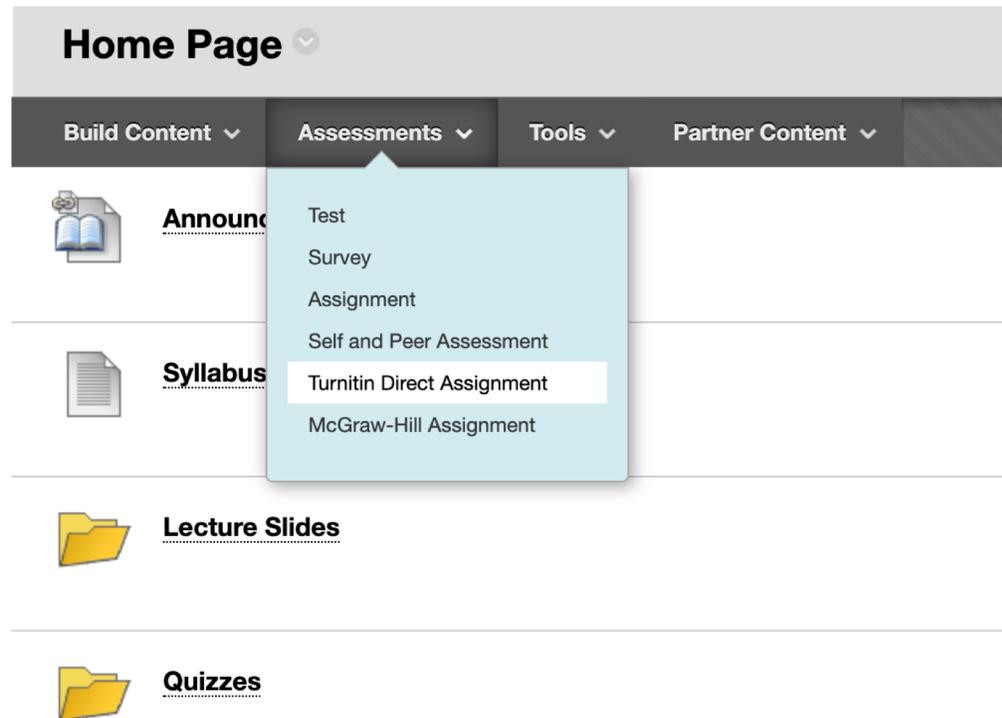
- How did the author address how **traffic** affects getting around campus?
- What **safety** considerations did the author find important?
- Did the author do a good job considering **ecologically friendly** modes of transportation? (Y/N)
- How much do you agree with their choice for transportation? (1= do not agree, 5 = agree)
- What did the author do that you liked?
- What do you think the author should consider to make their answer more complete?

Recap

- You thought of an answer to a question
 - this could be similar to an exam question or a concept that a student should master before an exam
- You put it in writing
- You “graded” a peer's work
- You and your peer review your “grade” and can now learn from your mistakes without being penalized

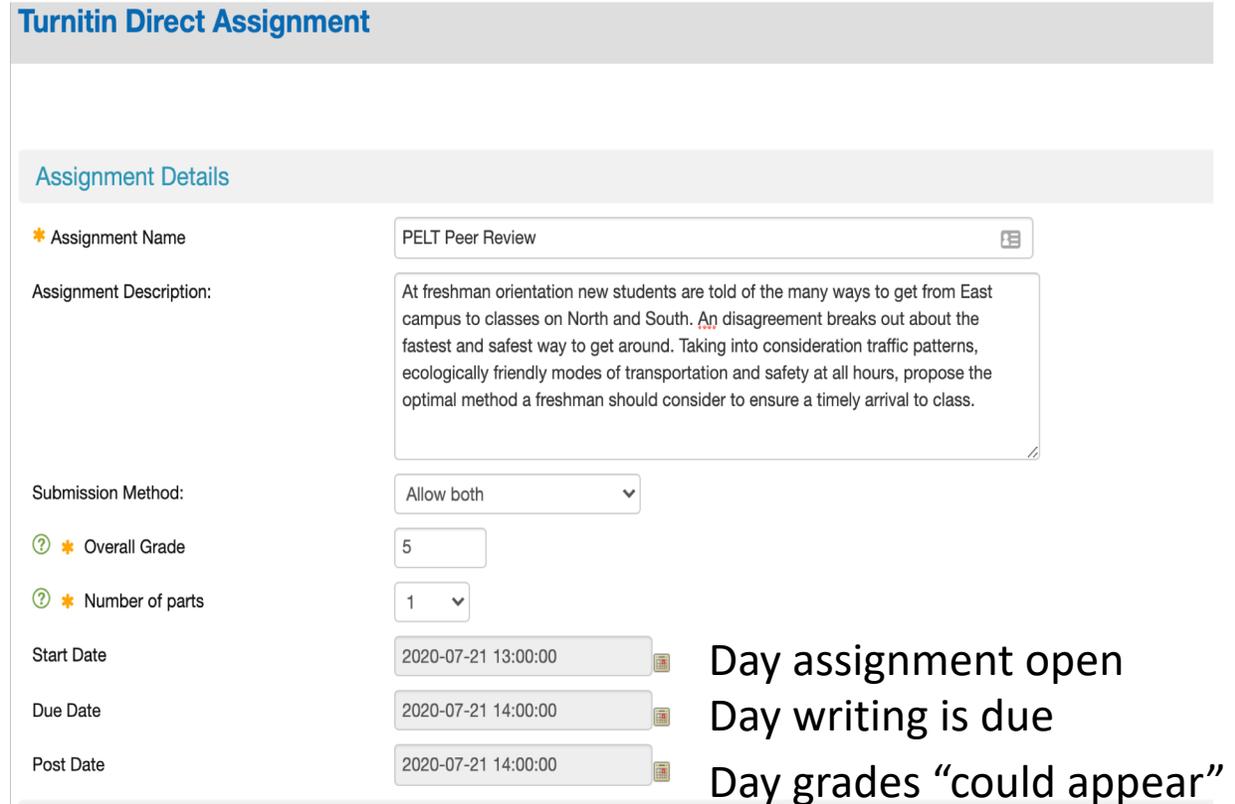
To do in Blackboard

Step 1:



The screenshot shows the Blackboard Home Page navigation menu. The 'Assessments' dropdown menu is open, showing the following options: Test, Survey, Assignment, Self and Peer Assessment, Turnitin Direct Assignment (highlighted), and McGraw-Hill Assignment. The main navigation bar includes 'Home Page', 'Build Content', 'Assessments', 'Tools', and 'Partner Content'. Below the navigation bar, there are four main content areas: 'Announcements', 'Syllabus', 'Lecture Slides', and 'Quizzes'.

Step 2:



The screenshot shows the 'Turnitin Direct Assignment' configuration page. The 'Assignment Name' is 'PELT Peer Review'. The 'Assignment Description' is: 'At freshman orientation new students are told of the many ways to get from East campus to classes on North and South. An disagreement breaks out about the fastest and safest way to get around. Taking into consideration traffic patterns, ecologically friendly modes of transportation and safety at all hours, propose the optimal method a freshman should consider to ensure a timely arrival to class.' The 'Submission Method' is 'Allow both'. The 'Overall Grade' is '5'. The 'Number of parts' is '1'. The 'Start Date' is '2020-07-21 13:00:00', the 'Due Date' is '2020-07-21 14:00:00', and the 'Post Date' is '2020-07-21 14:00:00'. To the right of the dates, there are three lines of text: 'Day assignment open', 'Day writing is due', and 'Day grades "could appear"'. The 'Day grades "could appear"' line is underlined.

**Due date and post date the same is helpful

To do in Blackboard

Step 2 continued: “the details”

Exclusions

Exclude small matches by: Do not exclude small matches

Minimum value to exclude: 0

Exclude bibliographic material: No

Excluded quoted material: No

Account Specific

Enable e-rater® grammar check: No

Use GradeMark: Yes

Repository

Paper Repository: Standard Repository

Check stored student papers: Yes

Check Internet: Yes

Check Journals and Publications: Yes

Grades

Reveal grades immediately: Yes

Ignore Turnitin Grades: No

Assignment

Report generation speed: Generate reports immediately (students can resubmit until due date): After 3 re:

Grading Schema: Letter

Turnitin Rubric: No Rubric

Students view originality reports: Yes

Allow late submissions: No

Step 3: find gear icon, Launch Peermark manager

PELT Peer Review

Submit Submissions Inbox Modify Refresh

Part 1 + Edit Parts

Status	Start Date	Due Date	Post Date	Grade Total	Tools	Export
Inactive	2020 Jul 21 13:00	2020 Jul 21 14:00	2020 Jul 21 14:00	5	   	   

At freshman orientation new students are told of the many ways to get from East campus to classes on North and South. A disagreement breaks out about the fastest and

Search 10 1

Refresh

Edit Parts

Tools **Export**

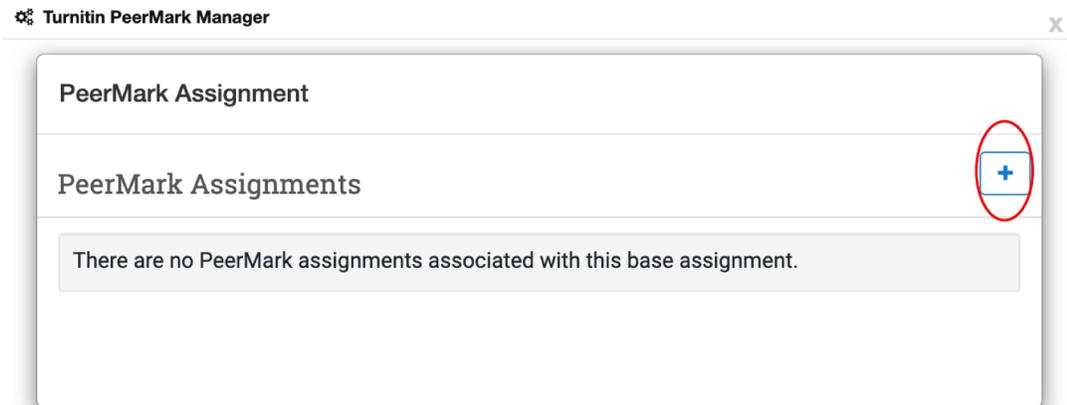
       

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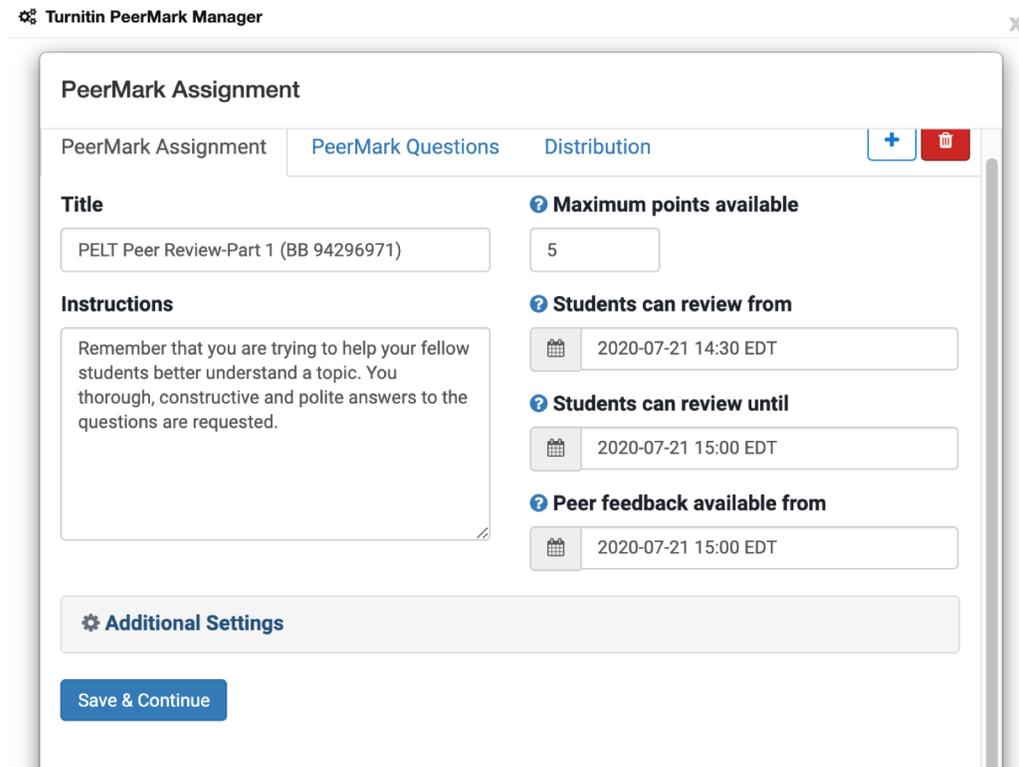
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To do in Blackboard

Step 4: New pop-up window, add assignment



Step 5: points are for review, date should be after the due date time, review is usually 4-7 days



***Save & continue is crucial step here!**

To do in Blackboard

Step 6: Additional Settings

Turnitin PeerMark Manager

PeerMark Assignment

Additional Settings

- Award maximum points on review**
 Yes No
- Students can view the names of their peers during review**
 Yes No
- Students without a submission can review**
 Yes No
- Automatically distribute papers for review:**
- Students can self-select papers for review:**
- Students must review their own paper**
 Yes No

Step 7: Time to input rubric

Turnitin PeerMark Manager

PeerMark Assignment

PeerMark Assignment **PeerMark Questions** Distribution + 🗑️

Title

Maximum points available

Instructions

Students can review from

Students can review until

Peer feedback available from

Additional Settings

Save & Continue

*Save & continue is crucial step here!

To do in Blackboard

Step 7: Rubric questions

PeerMark Assignment

PeerMark Assignment PeerMark Questions Distribution  

[Add from Library](#) [Save to Library](#) [Delete Library](#) [+ Add Question](#) [+ Reorder questions](#)

Click on the Add Question button to begin adding questions to the PeerMark assignment.

Step 7: input rubric in order

PeerMark Assignment

PeerMark Assignment PeerMark Questions Distribution  

[Save to Library](#) [Delete Library](#) [+ Reorder questions](#)

Questions can not be added once the PeerMark assignment is active.

How did the author calculate the progeny ratios?
Question type: Free Response
Minimum answer length: 5

Did the author calculate the progeny ratios correctly? Y/N
Question type: Scale
Highest: no
Lowest: yes

Based on the author's ratios what type of genetic inheritance do they believe is occurring?
Question type: Free Response

To do in Blackboard

Step 8: Checking the reviews

PELT Peer Review

Submit Submissions Inbox Modify Refresh

Part 1 + Edit Parts

Status	Start Date	Due Date	Post Date	Grade Total	Tools	Export
Inactive	2020 Jul 21 13:00	2020 Jul 21 14:00	2020 Jul 21 14:00	5	   	   

At freshman orientation new students are told of the many ways to get from East campus to classes on North and South. A disagreement breaks out about the fastest and

Search 10 1

Refresh

Edit Parts

Tools **Export**

outh. A disagreement breaks out about the fastest and

10 1

PeerMark Reviews

Reviews

Search Download Scaled Responses (xls)

Student	Grade	Submitted	Received	Review
	5	2 / 2	1	
	5	2 / 2	2	
	5	2 / 2	2	

To do in Blackboard

Step 8: Checking the SUBMITTED reviews

Reviews	Submitted Reviews		
Review	Points	Progress	Review
Author: [Redacted]	10 / 10	100%	<input checked="" type="checkbox"/>
Date Submitted: 16 Feb 2020 16:47 EST			
Author: [Redacted]	10 / 10	100%	<input checked="" type="checkbox"/>
Date Submitted: 16 Feb 2020 16:58 EST			

Step 8: Checking the RECEIVED reviews

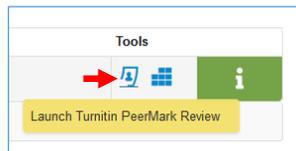
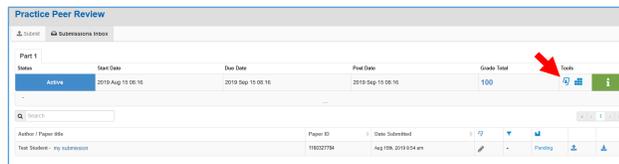
Reviews	Received Reviews	
Review	Percent Complete	Review
[Redacted]	100%	<input checked="" type="checkbox"/>
Date Submitted: 15 Feb 2020 09:47 EST		
[Redacted]	100%	<input checked="" type="checkbox"/>
Date Submitted: 17 Feb 2020 19:24 EST		

*not meeting the word limit (but still having a good answer) may give a low progress and therefore less points

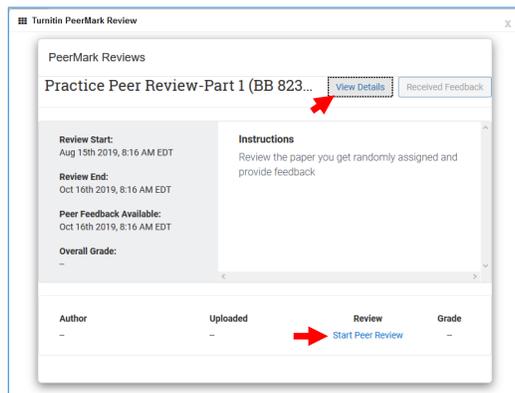
Student Instructions: Big thanks to Mac Wishart!!

Quick Student Guide to Turnitin Peer Review.

Once the instructor makes the peer review portion of the assignment available students can begin writing a peer review by selecting the Launch Turnitin PeerMark Review icon beneath the Tools heading of the submission inbox.



Select the Start Peer Review button on the right to begin reviewing a paper you have been assigned. Select view details to view any instructions your teacher provides.



PeerMark will open. All the free response and scale questions that need to be completed for the peer review are located on the right side of the PeerMark screen.

Questions?