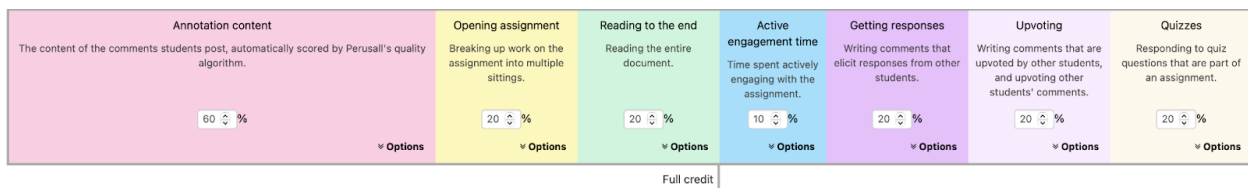


How Perusall[®] Scoring Works

Perusall scoring uses seven different metrics of student engagement to generate a single score. Each metric promotes behaviors that research shows predict positive learning outcomes. The metrics are:

- 1) **Annotation content**
- 2) **Opening assignment**
- 3) **Reading to the end**
- 4) **Active engagement time**
- 5) **Getting responses**
- 6) **Upvoting**
- 7) **Quizzes**



Each metric has a weight associated with it. A metric's weight is the percentage of the total score of an assignment that a student can earn from that metric. For example: if the **Annotation content** weight is 60%, then students are able to earn up to 60% of their score from just the **Annotation content** metric.

Students' final scores for assignments are the total credit they've earned across all metrics, from 0% to 100%. If the seven metrics' weights add up to more than 100%, students have multiple ways to earn full credit. For example, the default **Holistic** scoring setting metric weights are: **Annotation content** 60%, **Opening assignment** 20%, **Reading to the end** 20%, **Active engagement time** 10%, **Getting responses** 20%, **Upvoting** 20%, **Quizzes** 20%. In this case, a student could earn full credit for an assignment from just the **Annotation content**, **Opening assignment** and **Reading to the end** metrics. They could also receive full credit by earning some credit from all seven metrics.

Students' final scores are scaled to reflect your course's **Assignment score range**. The **Assignment score range** is the lowest and highest possible score a student can earn on an assignment. For example, if a student has a final score of 60% for an assignment and the **Assignment Score Range** is 0 to 1, then the assignment score would be 0.6.

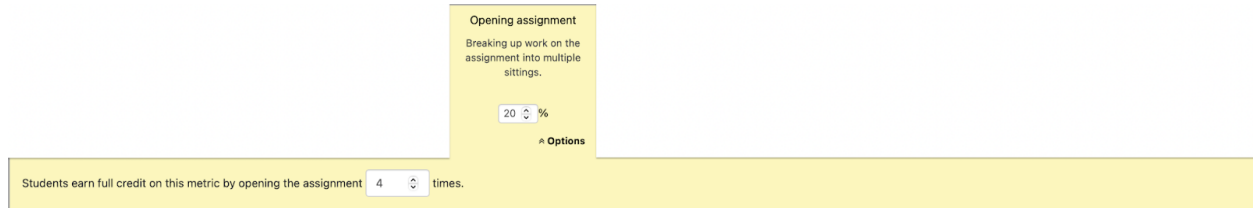
Assignment score range *

Assignment score precision is how many decimal places assignment scores are rounded to. For example: if a student has a final score of 64%, your course's **Assignment score range** is 0 to 10 and the **Assignment score precision** is 0, then the student's assignment score would be 6. If the **Assignment score precision** is 1, then the student's assignment score would be 6.4.

Assignment score precision

How Perusall[®] Scoring Works


For many metrics, you can set how much credit students earn from performing a task (e.g., opening an assignment, actively engaging, upvoting, eliciting a response or an upvote). For example: if the **Opening assignment** weight is 20%, you can set how many times the student must open the assignment to earn the full 20%.




Suggestion:

Since the goal of Perusall scoring is not to differentiate between students but to motivate student engagement, our default scoring options (**Holistic, Annotation content only, Focus on reading/watching, Focus on social engagement, Focus on quizzes**) primarily aim to motivate student engagement. Our defaults strike this balance, so it is not necessary to customize your scoring settings. However, if you choose to customize scoring settings, we encourage providing students several avenues to reach full credit and erring on the side of leniency. Then, students will fret less about grades and focus more on content and engaging meaningfully with their peers.

Reset scoring settings to a preset:

 Holistic

 Annotation content only

 Focus on reading/watching

 Focus on social engagement

 Focus on quizzes

Communicating with students about scoring

We suggest providing students with general guidelines about scoring, without going into the specifics of the metrics that you have selected. (You can customize a welcome message to students in **Settings > General**.) We firmly believe that defining too precisely how students' levels of engagement are assessed sends the wrong message to students and encourages them to try to “game” the grading algorithm. This leads to the student perception that the reading assignments are just “busy work”; instead, we want students to be intrinsically motivated to engage in Perusall because they see the connection between the readings and their own mastery of the reading material. We view scoring as a way to invite students to join the conversation, rather than as an end in itself.

Releasing Scores

Assignments are scored automatically as students are working and scores automatically appear in the gradebook. However, scores will not appear to students until you have released them. By default, scores are not released until you manually release them (by clicking the **Release to students** buttons at the bottom of assignments' columns in the Gradebook).

How Perusall Scoring Works

In **Settings > Scoring**, you can choose to release grades: **only after instructor manually releases them in the Gradebook**, **after the assignment deadline has passed, including any late annotation period or post-deadline reply window**, **after the assignment deadline has passed, but before any late annotation period or post-deadline reply window**, **immediately, as the student submits work**. We tend to advise against **immediately, as the student submits work**, since it can result in students trying to "game" the system or else do only what is required. We have the grade release mechanism so you can review grades before students see them (in case you want to tweak scoring parameters, or manually review or edit scores).

only after instructor manually releases them in the [Gradebook](#)

only after instructor manually releases them in the Gradebook

after the assignment deadline has passed, including any late annotation period or post-deadline reply window

after the assignment deadline has passed, but before any late annotation period or post-deadline reply window

immediately, as the student submits work

Grade Sync

Grades are synced to the Learning Management System [LMS] either manually or automatically (or not at all). By default, Perusall automatically syncs individual assignment scores back to the LMS once you release them. In **Settings > General**, you can choose to from the following grade sync options: **Automatically sync individual assignment scores back to the LMS**, **Automatically sync students' average scores back to the LMS**, **Manually sync individual assignment scores back to the LMS**, **Do not sync grades back to the LMS**. When Manual grade sync is enabled, sync the grades for an assignment by clicking the **Sync to LMS** button in the gradebook and then selecting the assignment you want to sync. Please note: grades only sync after they are released to students.

Grade sync to LMS •

- Automatically sync individual assignment scores back to the LMS
- Do not sync grades back to the LMS
- Manually sync individual assignment scores back to the LMS
- Automatically sync individual assignment scores back to the LMS
- Automatically sync students' average scores back to the LMS

Threshold Scoring

Threshold scoring allows you to give students either credit or no credit for assignments. Threshold scoring is pass/fail scoring. If a threshold is present in the **Threshold score for credit** field, then all scores in the gradebook will either appear as 1 (meets threshold) or 0 (does not meet threshold). Credit is given for scores at or higher than the threshold. For example, if you keep the default **Assignment score range** of 0-3 and set a threshold of 2, then students' scores will show as a 1 if their score would have been a 2 or 3, and will show as a 0 if their score would have been a 0 or 1.

Threshold score for credit

2

How Perusall Scoring Works

Scoring metrics

1) The **Annotation content metric** gives credit based on the average quality of a student's top annotations submitted on time. You set the number of annotations to be scored. Quality is calculated by a machine learning algorithm that uses linguistic features to predict the score that you would assign manually as an instructor.

Perusall automatically scores students' annotations as low, medium, or high quality. The point values for each quality level are (by default) relative to each other and respectively 0, 1, and 2. You can adjust these values to give more credit or less credit for each quality level and choose whether they are on a relative or absolute scale. For example, given a scale of 3/4/5, a quality score of 3 is 60% of the maximum on an absolute scale and 0% of the maximum on a relative scale. On the same scale, a quality score of 4 is 80% of the maximum on an absolute scale and 50% of the maximum on a relative scale. If you want to ignore annotation quality and give full credit to any annotations, then set all relative quality scores to the same number (for example, 1/1/1 instead of 0/1/2).

You can also set a **Post-deadline reply window** or a **Late annotation period**. A **Post-deadline reply window** extends the deadline for responding to existing threads for full credit. A **Late annotation period** extends the deadline for both starting and continuing discussion threads, but credit declines linearly relative to how much time is left in the **Late annotation period**. At the beginning of the **Late annotation period**, comments posted receive full credit. By the end, comments posted receive no credit. If a **Post-deadline reply window** and a **Late annotation period** are both enabled, the **Post-deadline reply window** is applied to responses first, and the **Late annotation period** is applied afterwards.

By default, the setting that **Students cannot earn more credit (for annotations) after the deadline than they earned before it** is enabled in **Settings > Scoring**. This means that students cannot earn more credit from their annotations created during the **Post-deadline reply window** or the **Late annotation period** than they earned before the deadline. For example, if this setting is enabled and a student earns 20% of the assignment credit from annotations before the deadline, then that student could earn at most 20% in additional credit from annotating after the deadline. This encourages students to complete most of the assignment before the deadline.

Instructors can set a distribution penalty for responses that are not evenly distributed throughout the content. For example, if there are 5 annotations required and there are over 5 pages in an assignment, then a student would receive no penalty if the 5 annotations are on different pages, but the maximum penalty if all 5 annotations are on one page.

2) The **Opening assignment** metric gives credit for each time a student opens an assignment, which encourages students to chunk their work into multiple sessions instead of completing their work in fewer but longer sessions. Research indicates that students who chunk their readings do better on exams than students who read in fewer sessions.

How Perusall Scoring Works

3) The **Reading to the end** metric gives credit based on how much of the assignment a student views. For example: if a student views 50% of an assignment, she would receive 50% credit for the **Reading to the end** metric. If the assignment is a web page, video, or podcast, students will receive full credit for the **Reading component** upon opening the assignment (since there are no pages/sections for Perusall to keep track of).

4) The **Active engagement time component** gives credit for each minute the student spends actively engaging with the assignment. This is determined by some sort of mouse movement or keypress at least once every 2 minutes.

Please note that students must access their assignments from the **Assignments** tab (or an assignment-specific link in your LMS) rather than the **Library** tab of Perusall to receive credit for the **Active engagement time** metric and the **Opening assignment** metric. If students do not complete their reading and annotations within the assignment itself but rather in the library, then Perusall cannot track the **Active engagement time** metric nor the **Opening assignment** metric. For this reason, we recommend making it explicit to students that they will not receive full credit for their work unless they access and complete their assignments from the **Assignments** tab (or an assignment-specific link in your LMS). Consider disabling any generic Perusall links to ensure that students always access Perusall through assignment-specific links.

5) The **Gettings responses** metric gives credit for annotations that elicit responses from other students. This rewards students for starting threads that generate discussion among the class.

6) The **Upvoting component** gives credit for either writing comments and questions that are upvoted by other students, or for upvoting other students' comments, or both. This encourages students to provide informal feedback by upvoting each others' comments.








*You can choose scoring settings that apply course-wide by clicking **Settings > Scoring**. You can override most scoring settings for individual assignments when creating or editing assignments.*

Example

The next page is an example from the Perusall Gradebook of how students' scores are calculated:

How Perusall[®] Scoring Works

Engagement metrics

Metric	Details		Score for this component		
Annotation content	13 comments submitted	Average quality score of best 3 comments: 2.00 (on a 0-2 scale)	$\frac{2.00 - 0}{2 - 0} \times 60\%$	= 60.0% out of 60%	
Opening assignment	Opened assignment 3 times	1/4 of max possible score each time assignment is opened	$3 \times \frac{1}{4} \times 20\%$	= 15.0% out of 20%	
Reading to the end	Read 100% of content		$100\% \times 20\%$	= 20.0% out of 20%	
Active engagement time	22.03 minutes of active time	1/45 of max possible score for each minute of active time	$22.03 \times \frac{1}{45} \times 10\%$	= 4.9% out of 10%	
Getting responses	2 comments that elicited a response	1/10 of max possible score for each comment that elicits a response	$2 \times \frac{1}{10} \times 20\%$	= 4.0% out of 20%	
Upvoting	5 comments that were upvoted 5 upvotes made on others' comments	1/10 of max possible score for each upvote received; 1/10 of max possible score for each upvote given	$(5 \times \frac{1}{10} + 5 \times \frac{1}{10}) \times 20\%$	= 20.0% out of 20%	
Quizzes	0 questions answered correctly	Out of 0 total questions	$0 \times 20\%$	= 0% out of 20%	
Total				123.9%	