



Moving Online Student Discussion a Step Forward Using Social Annotation in Perusall in Introductory Statistics

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Social Annotation Isn't a New Fad...

Available online at www.sciencedirect.com



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Online annotation – Research and practices

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<https://www.sciencedirect.com/science/article/pii/S0360131506000455>

Los Angeles Times

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What the heck is ‘social reading’?

BY CAROLYN KELLOGG

DEC. 22, 2011 12:01 PM PT



The Internet and Higher Education

Volume 15, Issue 1, January 2012, Pages 35–19

Review

The educational use of social annotation tools in higher education: A literature review

Llena Novak ^a, Kim Mazzouk ^{a,1}, Tristan L. Johnson ^{b,2}

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<https://doi.org/10.1016/j.inhe.2011.05.007>

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HOT TYPE

With ‘Social Reading,’ Books Become Places to Meet

By Jennifer Howard | NOVEMBER 26, 2012



Why Should We Use It?

Studies about social annotation showed:

- [Novak et al. \(2012\)](#)
 - Increased participation and engagement (Lebow and Lick, 2004, LeeTiernan and Grudin, 2001, as cited in Wu-Yuin et al., 2007)
 - Improved comprehension and peer-critique skills (Archibald, 2010, Johnson et al., 2010, Mendenhall and Author, 2010)
 - Annotations themselves serve as additional content (Kawase et al., 2009)

- [Law et al. \(2020\)](#) – language learning contexts
 - “Enhanced co-constructed meaning making, pragmalinguistic and sociopragmatic awareness, and competence in instructional contexts (Mroz, 2012; Mroz, 2015; Abrams, 2013; Halenko, 2017)” [language learning contexts]





Why Should We Consider It?

BENEFITS FOR INSTRUCTORS:

- Encourage student reading prior to class
- Inform instruction - Identify areas of confusion or need for additional resources
- Learn more about students as student connect personally with readings and share that connection



Social Annotation Tools



Many annotation online tools have been developed over the last decade, including Gibeo (Bateman, Farzan, Brusilovsky, & McCalla, 2006), Annotea (Wu-Yuin, Chin-Yu, & Mike, 2007), EDUCOSM (Nokelainen, Kurhila, Miettinen, Floreen, & Tirri, 2003), Diigo (Kawase et al., 2009), HyLighter (Lebow & Lick, 2004), The Fluid Annotations projects (Zellweger, Mangen, & Newman, 2002), and MADCOW (Bottoni et al., 2004, Bottoni et al., 2006).



THE UNIVERSITY OF TEXAS AT AUSTIN



More comprehensive list available at <https://ecomma.coerll.utexas.edu/social-reading-tools/>





Using Perusall in Introductory Statistics



Context of Our Presentation

- Mid-size lecture courses (n=20)
- Graduate introductory statistics course taken by social science students (Education and Health Sciences programs)
- Online asynchronous course and In-person course
- Used Perusall for four reading activities across 15 weeks
- Required activity:
 - 4 reading assignments covering specific statistics topics within Perusall (sampling scheme, choosing mean or median to represent a dataset, non-normal data, hypothesis testing)
 - Responding to four prompts embedded throughout reading





Technical Implementation

- Seamless integration of Perusall into the Canvas course site (Canvas LTI 1.1)

The screenshot displays a Canvas course site interface. At the top left is the University of Manitoba logo. Below it is a user profile picture and the text 'Account'. A vertical sidebar on the left contains icons and labels for 'Dashboard', 'Courses', 'Calendar', and 'Inbox'. The main navigation menu on the right includes 'Home', 'Announcements', 'Modules', 'Perusall' (highlighted with a blue border), 'Grades', 'Chat', 'People', and 'Office 365'. The breadcrumb path at the top right reads '90200.202380, 90201.202380 > Modules'. Below the breadcrumb, the text 'Fall Term 2023' is visible. A dropdown menu is open under 'Modules', showing a 'Getting Started' section with three items: 'How to Get Started', 'Course Overview and Le', and 'Course Information'. A speaker icon is located in the bottom right corner of the slide.

Technical Implementation



- Aligning reading materials with the Perusall platform
 - Add as an assignment
 - Arrange by assignment number
 - Set up deadlines

A screenshot of the Perusall web interface. The top navigation bar shows the course name 'Fall Term 2023 Stat Meth App Ed I (EDPR-7541-M50, EDPR-8541-M50)' and the 'Assignments' tab is selected. A green badge indicates 'Created from Canvas (LTI 1.1)'. The left sidebar contains a menu with options like 'Course home', 'Settings', 'Gradebook', 'Export data', 'Student view', 'Notifications (100+)', 'Notes', 'Audit (Beta 10)', and 'Add to my calendar'. The main content area displays a list of assignments with due dates and titles: 'Perusall Reading #1' (2 parts, due Wed Sep 13, 2023 11:59 pm CDT), 'Perusall Reading #2' (due Wed Sep 27, 2023 11:59 pm CDT), 'Perusall #3' (due Wed Oct 18, 2023 11:59 pm CDT), and 'Perusall #4' (due Wed Nov 22, 2023 11:59 pm CST). A speaker icon is visible in the bottom right corner of the interface.



Providing Student Support

☰ 90200.202380, 90201.202380 > Announcements > video on using Perusall

👤 Student View

Fall Term 2023

Home

Announcements

Modules

Perusall

Grades

Chat

People

Office 365

Collaborations

Discussions

Edit

⋮



video on using Perusall

Leigh Michelle Williams (She/Her)

In module 2, you have your first Perusall assignment. I have created a short video to show you how to get into it and what it looks like. Annotating a reading in Perusall is similar to annotating a Word document with a comment. VIDEO LINK:

<https://youtu.be/dYd5S65NPFY>



This announcement is closed for comments



Providing Student Support



Perusall Reading #1

2 parts

Due Wed Sep 13, 2023 11:59 pm CDT

Students should read both papers as part of the assignment:

As students move through the readings, they should:

1) add annotations to either

a. ask questions about a section of the text that might be unclear or that where they want to hear their peers' thoughts

or

b. respond to another student's comment/question

AND

2) add annotations to respond to the structured discussion questions posted by the instructor.

2 library items assigned:

- [Reading 1a SimulationSamplingDevelopingCountry](#)
- [Reading1b MentalHealthSample](#)





Pedagogical Considerations

- Instruction intervention timing
 - Purposefully not intervened except for urgent cases
 - Provided some suggestions based on student-generated content in a weekly assignment feedback email and announcement post

EDPR 7541/8541 Stats 1: exit ticket comments, module 5 release, Perusall assignment comments


First Perusall assignment:

- I read through your comments and answers to my questions on Perusall #1. You all had some great things to say. I appreciate your honesty and candidness in answering. I purposely sat back on the first one so that I wasn't in the way of you talking to each other. I can be more active in the future ones if you want me to be.
- In terms of resources and possibly thinking that we don't have data collection issues in the US, consider that school districts across the country had to send wireless hotspots and tablets/laptops home for kids to use for remote learning at the start of the pandemic. Not every home here has internet or a computer. Not every individual in a family has a cell phone.




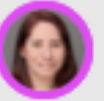
Pedagogical Considerations


- Prompt questions formulation
 - Three prompts placed in strategic places throughout readings
 - One reflective prompt at end of reading

 Why do you think that bias (the difference between the real value and the estimated value for a given sampling scheme) is largest for the smaller sample sizes in this study?




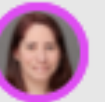
 Did you have this misconception based on the first article in this reading? What does this paragraph make you think about?



 Is it surprising that the amount of bias is not the same across all the variables in the study? What might this mean?



 Describe how (and if) this reading added to your understanding of sampling strategy and sampling bias beyond the text readings and assigned videos.



Example of Student Interaction in Perusall



Perusall® > Fall Term 2023 Stat Meth App Ed I (EDPR-7541-M50, EDPR-8541-M50) > Assignments > Perusall

Page 2

Options

All comments

Get help

Leigh Michelle Williams

Fall Term 2023 ...

- My Courses
- Course home
- Settings
- Gradebook
- Export data
- Student view
- Notifications 100+
- Notes
- Audit 10
- Add to my calendar

Content

- Library >
- Assignments >
- Chats
- Groups
- Announcements
- General discussion
- One-on-One
- Hashtags

- #grades
- #lecture
- #logistics
- #section

Blood pressure: first diastolic reading (mmhg)

healthy. But not too far below 80.

and health data more generally, is when there is less variability in a trait than would be expected under a normal distribution (termed "leptokurtosis"). In evolutionary terms, lack of variability between individuals should evolve for any trait or function that must operate within narrow parameters for proper functioning or for survival.⁵ Infant growth and developmental trajectories are very important from a biological perspective, and deviation from a typical developmental trajectory may be indicative of serious health problems. So it's no surprise that doctors and many parents diligently track early childhood growth using infant growth charts. Box 2 shows distributions for childhood weight and for their psychomotor development at 9 months of age, which includes whether babies are able to do things like hold small objects, and whether they are able to communicate, such as with a nod for "yes". In evolution, leptokurtic traits are often constrained at the genetic level, where the trait turns out to have approximately the same value regardless of the environment that the genes are expressing themselves within.

Returning to my original example, diastolic blood pressure changes with age, being higher in middle age and then lower in the very elderly. By aggregating readings across 40 years of life, patterns at specific ages are obscured, and data aggregation may cause diastolic blood pressure to be normally distributed. However, aggregating the data

icoup.com/fssjg/article/20/3/42/190563 by New York State Dept of Health user on 21 August 2023

FIGURE 2: Natural selection in action: beak depth (in millimetres) in medium ground finches on the Galápagos Islands changed between 1976 (top) and 1978 (bottom) due to drought conditions. The data are downloadable to accompany the statistics text *The Statistical Sleuth* (3rd edition),³ and were originally from Peter Grant.⁴

possess a trait that confers an advantage in the new conditions. Assuming the trait is normally distributed in the population, the distribution could shift to the left or right of its original value but remain normally distributed. But this does not necessarily happen. This is beautifully illustrated in Rosemary and Peter Grant's work carried

for crunching the hard seeds of drought-affected plants, were more likely to survive. This resulted in a distribution of beak depth in the drought survivors in 1978 that was no longer symmetric around the mean, which can be seen in Figure 2.

In human biology, infant growth and development provide rich sources of theory

Current conversation

- I find this illustration very interesting. I think this highlights the fact that a distribution though skewed to the right or left could still be a normal distribution. What do you think? I would love to read your thoughts.
- I agree that this is an important statement. I would be interested to learn about more examples that illustrate this concept.
- I totally agree with that theory.
- I also agree specially because I was used to seeing the normal graphs and automatically assume that this shape was the correct and better way, but in this article it taught me that normal doesn't necessarily mean better.
- Yes I agree. I also see that statement to highlight what appears to be a non-normal sample distribution can still be representative of the population from which it came.
- I agree, it is interesting. Having the graphs from Figure 2 helped me see exactly what the writer was addressing. While skewed, these graphs still have the "look" of what one thinks of as a normal



Reporting/Analytics

The screenshot shows a browser window with a learning management system interface. The main content area displays assignment instructions and a list of library items. Below this is a toolbar with icons for Open, Edit, Duplicate, Extended view, Copy full title for EMS, and Delete. A secondary toolbar contains icons for Analytics, Grade assignment, Confusion report, and All comments. The Analytics section is highlighted with a blue oval and shows an 'Overall progress' pie chart with 94.4% submitted work and 5.6% no work submitted. Below the chart, it reports 143 comments, 11 questions, 1 unanswered question, and 1 hour, 27 minutes average active engagement time.

Showing 1-77 of 77 total

Sort by: Position in content | Lowest to highest | < Previous | > Next

Student	Submission	Words	Page	Quality	Upvoters	Replies	Group	Created	Last edited
	Thank you for	15	1	medium	0	0	1	Sep 11 11:30 pm	Sep 11 11:30 pm

72	1	high	3	5	1	Sep 11 7:46 pm	Sep 11 7:54 pm
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Download as spreadsheet | Download as document



Interested in Using Perusall?



Perusall Resources

- [Website](#)



Perusall Academy

Boost your pedagogy with Perusall in the second iteration of our webinar series. The Perusall Academy is back with a fresh lineup of three distinct educational webinars, each led by a seasoned Perusall professional. Whether you're a beginner, seasoned user, or looking for a refresher, choose a webinar below to fit your needs. Join us for the entire series to receive a Perusall Academy Certificate of Completion!

- [YouTube channel](#)
 - [Student introduction video](#)

Perusall® Exchange 2024



Education in the Age of Generative AI
June 9 - 15, 2024



Feature: AI-Generated Prompts

The screenshot shows a Perusall course page for "Spring Term 2024 Multivariate Methods (EDPR-8549-001, EDPR-7549-001)". The assignment is titled "Data Collection and Analysis". The text of the assignment is as follows:

Starting in spring 2015, the data about the students referred to coaching were collected and maintained in a database by staff in the Center for Academic Retention and Enrichment Services (CARES) at the University. After the first author obtained a determination from the IRB office that this project was exempt because the data was to be de-identified, the CARES office shared the de-identified data for students from spring 2015 through spring 2017 for the purpose of program evaluation. The actual data analysis took place in fall 2017.

All analyses were conducted using SPSS version 24 and run separately for full-time and part-time students. The first question compared the GPAs and retention of coaching program participants to coaching-referred non-participants. Of the 1434 students, 24% were considered non-participants as they attended zero academic coaching sessions. Repeated measures ANOVA compared the mean GPA for participants and non-participants. One logistic regression model assessed the relationship between participation and whether the student intervention semester GPA was at least 2.00, and another assessed participation and retention the following semester. These methods controlled for previous semester GPA as this is a typical covariate for predicting current academic performance and first semester GPA has been shown to predict second semester GPA (Gow, McKenzie, & Schweitzer, 2004; Westrick, Le, Robbins, Radunzel, & Schmidt, 2015).

The second question addressed how well student demographics (i.e., first-generation status, race/ethnicity, SES, gender, age), enrollment status, high school performance (i.e., high school GPA, ACT score), and number of academic coaching sessions explained academic success for

On the right side of the page, there is a chat window titled "Current conversation". It shows a user asking: "What is the significance of controlling for previous semester GPA?". Below the question, there is a prompt: "Suggest a discussion prompt (Beta)". A tooltip explains: "Use AI to suggest a discussion prompt for students to respond to, based on the highlighted text. You'll be able to review, edit, or discard the suggested prompt before posting it for students to see." There is also a "Submit" button and a "Hide this button in this course" link.

At the bottom right of the page, there is a Springer logo.





Feature: Variety of Formats

The screenshot displays the Perusall interface for a course titled "Fall Term 2023 Stat Meth App Ed I (EDPR-7541-M50, EDPR-6041-M50)". The left sidebar shows navigation options such as "Course home", "Settings", "Gradesbook", "Export data", "Student view", "Notifications" (100+), "Notes", "Audit" (10), and "Add to my calendar". The main content area is titled "Add content" and lists several options:

- Perusall Reading #1**, **Perusall Reading #2**, **Perusall Reading #3**, and **Perusall Reading #4**
- Deleted items**
- Making the most of learning with Perusall**: Add an introductory assignment that helps students learn how to write high-quality comments and make social learning effective for them.
- Book from the Perusall catalog**: Select a book from 1,000,000+ titles in our catalog. Students purchase the book through Perusall or redeem an access code purchased at your institutional bookstore.
- Document**: Add a PDF file, EPUB file, image, Word document, PowerPoint presentation, Google document, or Google Slides presentation.
- Web page**: Take a snapshot of a web page.
- Quiz**: Add a quiz or survey for students to complete.
- Video**: Add a video from YouTube, Vimeo, Dropbox, Google Drive, or a direct link to a video file.
- Podcast**: Add an episode of a podcast.
- Link** (New): Add a link to an external web site. (External links will open outside of Perusall and can't be added to an assignment.)
- Materials from another course**: Copy course materials from another course into this one.
- Folder**: Add folders to your course to organize content in the library.
- iClicker**: Allow students to purchase the iClicker student app at a discount. (Purchasing iClicker through Perusall is only available for students in the US and Canada.)





Feature: Accessibility

support.perusall.com/.../Accessibility-statement

teaching research UoM Google Drive SikuXM Zoom personal open Unmail Adobe Acrobat

Perusall > University Administrators > Accessibility

Accessibility statement

1 month ago - Updated

Perusall is committed to making our social learning platform accessible to as many students as possible.

[Perusall's Voluntary Product Accessibility Template \(version 2.4, updated May 5, 2023\)](#) provides detailed information on Perusall's support for accessibility standards.

Perusall has several features that can be leveraged to increase accessibility of reading materials and assignments to students:

- The ability for instructors to upload materials in PDF or EPUB format in addition to the textbooks available from publishers. Instructors can easily make alternate versions of materials available to students with particular needs. Instructor uploaded materials are made available to students at no cost to the student. (Instructors should ensure content uploaded is accessible.)
- Students can have course materials read aloud to them from within Perusall without having to use specialized screen reader software.
- Resizable and responsive user interface components, and zooming or resizing to change text size within the reading materials.
- A "dark mode" with a darker user interface that is more readable in low light conditions.

In addition, users can enable a number of accessibility options in their own profile settings:

- **Use Open Dyslexic Font for reading when possible:** For reflowable books, Perusall can replace the default font with the [Open Dyslexic Font](#) for users with dyslexia.
- **Increase color contrast for increased visibility:** This option increases color contrast between foreground and background colors in a number of places in the user interface.
- **Do not automatically hide alerts after a few seconds:** By default, alerts that pop up in the upper right corner of the page will disappear after a few seconds. Users that want more time to review alerts can enable this option so that alerts

Articles in this section

- [Accessibility statement](#)
- [Accessibility for PDFs](#)
- [Accessibility for videos and podcasts](#)

Related articles

- [Are institutional licenses available?](#)
- [How does Perusall support students with dyslexia?](#)
- [Overview of LMS Integration](#)
- [Why do I see an exclamation point next to some of my scores in My Scores?](#)
- [Getting started](#)



Resources for Using Social Annotation



- [UT Austin: Social Reading Lesson Planning Guide](#)
- [Cornell Univ. Center for Teaching Innovation - Social Annotation Tips](#)
- [DePaul Teaching Commons - Social Annotation](#)
- [Duke Univ. - Integrating Social Annotation into Your Course: What Tool is Right for You?](#)
- [Princeton Univ. - Social Annotations Page](#)



THANK YOU!!!



Contact us with questions...

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