Teaching Tips/Notes NACTA Journal

Social Annotation in Agriculture Classrooms: Using Hypothesis to Promote Student Engagement

Introduction

In today's digital learning environment, collaborative annotation tools present valuable opportunities to boost student engagement and critical thinking (Kalir, 2022). Social annotation involves students interacting with electronic texts (e.g., articles, websites, videos, etc.) by adding comments, highlighting key points, making sticky notes, etc., through a digital platform (Novak et al., 2012). Furthermore, social annotation cultivates dynamic and engaging classrooms where students pursue evidence-based, in-depth conversations that build upon one another's ideas (Brown & Croft, 2020). Several platforms are designed specifically for social annotation to promote collaborative learning and foster behaviors of self-reflection, internalization, and elaboration during classroom discussions (Gao, 2013). One example of a web-based social annotation tool, Hypothesis (https://web.hypothes.is/), enables students and educators to collaboratively engage with digital texts (Kalir, 2022). Additional online learning annotation platforms also exist, such as Perusall (https://www.perusall.com/), but social annotation can be completed within shared documents via the cloud. This teaching tip specifically outlines how to integrate Hypothesis into agriculture classrooms, focusing on how it was used in a graduate-level course. This teaching tip also includes feedback from students, and recommendations on how Hypothesis and social annotation can be used to improve student engagement, comprehension, and collaboration, addressing a critical need for more interactive and technology-enhanced learning strategies in the field (Ebner, 2009).

Procedure

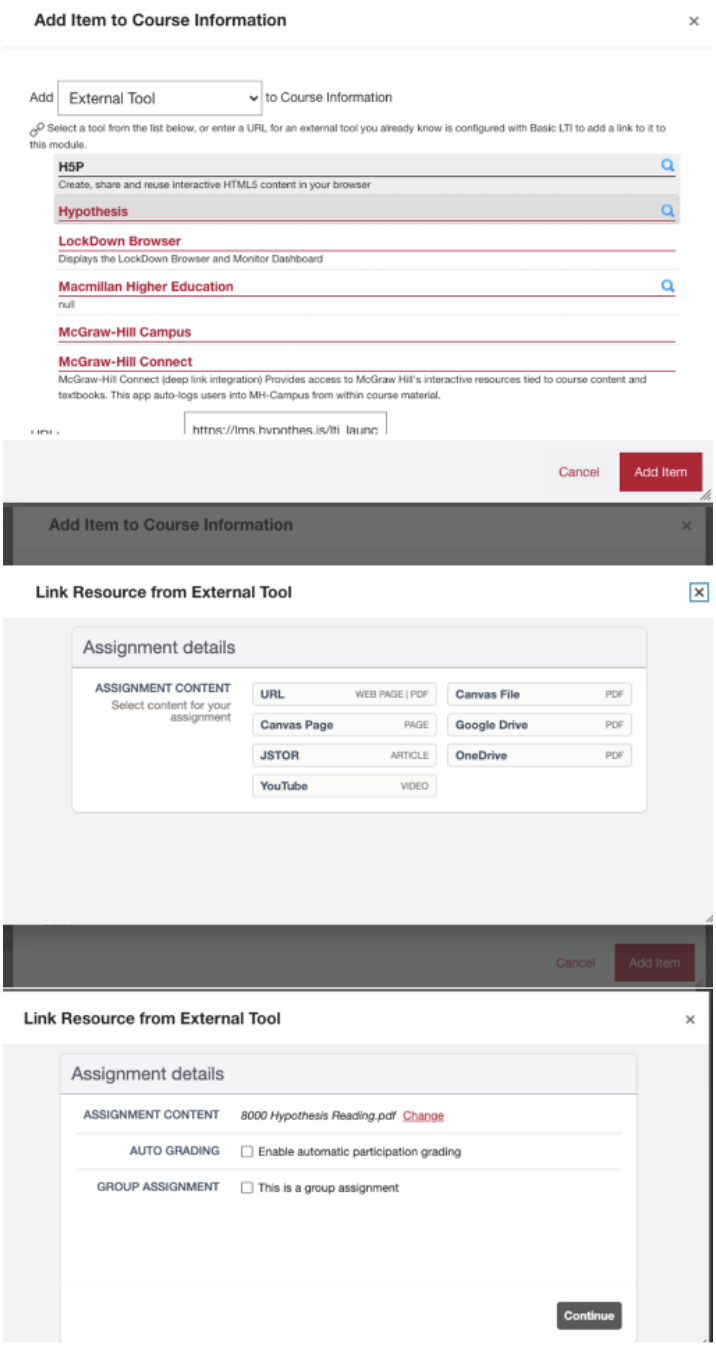
The first step to using Hypothesis is to ensure its availability within the learning management system (LMS). Instructors may need to work with the technology services groups at their institutions to identify if Hypothesis is available. Hypothesis was used within the Canvas LMS by the author team, but is also available via Moodle or Blackboard.

At the beginning of the term, the instructor provided an overview of the Hypothesis platform, explaining its purpose and offering related resources to help students navigate the platform. The instructor uploaded class readings into Hypothesis via the LMS (Figure 1), either as a link or an assignment, which provided accountability for students. Along with providing the readings and a link to access Hypothesis, the instructor provided additional context for the readings, including questions to assist in guiding the learning process and focusing on the course

topics. When adding a document for students to annotate, you must link it through the Hypothesis website. When adding an assignment to a module, you'll click "external tool" from the dropdown menu, then select Hypothesis from the list of tools. Additionally, after reviewing the document, select continue, and you will be able to publish the assignment on the next screen, and edit the details of the assignment (prompts, etc.) after it has been added to the module.

Figure 1

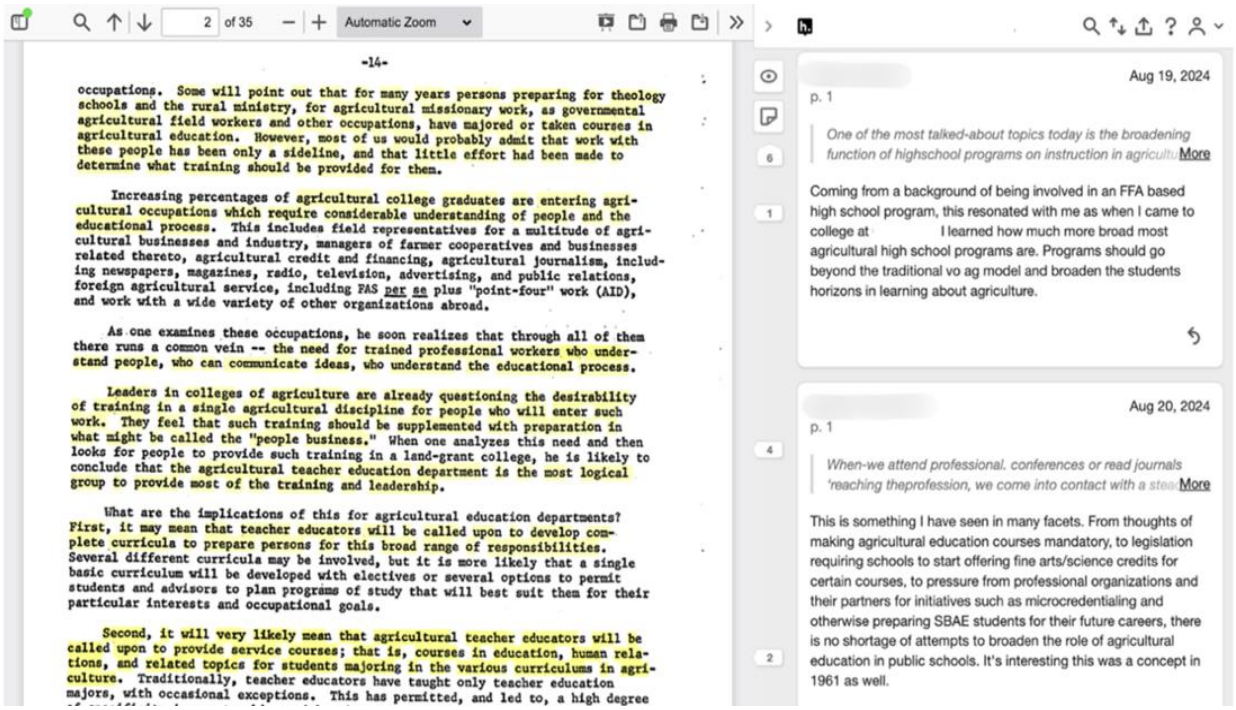
Three-Step Process for Uploading a Document to Hypothesis on Canvas



Students practiced social annotation by focusing on specific points of the reading, as shared by the instructor, through commenting, highlighting, and/or responding to one another (Figure 2). The readings and annotations were expected to be completed before class to prepare for the course discussion. The result was a collaborative learning classroom space that challenged students to process content on a deeper level through course discussions. Of note, the instructor provided less structure when utilizing Hypothesis in a graduate course, allowing students to complete their annotations at any time before class and not requiring responses from other students, nor counting the annotations as a grade. When using Hypothesis in an undergraduate course, students were provided more specific prompts, and their annotations were counted for a complete/incomplete grade to reinforce accountability for preparation.

Figure 2

Example of an Annotated Reading in Hypothesis



Assessment

Overall, students expressed that integrating Hypothesis in the classroom was a positive experience. Feedback from graduate students was collected using a Qualtrics survey containing two five-point Likert-type items (Table 1) and one open-ended response question. Six of the eight students (75%) in the graduate-level course in fall 2024 responded to the survey.

Table 1.
Student Feedback on Hypothesis Usage in the Classroom

	Frequency of Response					
Item	**NBAA**	**SNB**	**N**	**B**	**VB**	**Mean**
How beneficial was *Hypothesis* to your success in the course?			1	4	1	4.00
How beneficial was *Hypothesis* in helping you understand course content?				2	4	4.67

These ratings indicated that the students saw Hypothesis as a beneficial tool to help them succeed in the course and understand course content. Anecdotally, the instructor also found the use of Hypothesis annotations in the classroom to be beneficial since they served as a formative assessment, which helped to identify questions and misconceptions prior to class. Additionally, using social annotation allowed students to share personal insights, which helped build connections with fellow students and the instructor, while also encouraging accountability to complete the readings. Students were also asked to explain their feedback with written commentary. The following themes were observed.

Increased Engagement with Peers

A common theme in student comments was the increased engagement with peers that using Hypothesis provided. Student 5 shared that "reading the Hypothesis annotations from my fellow peers helped me have a different outlook and perspective to view their thoughts and how they might be different than how I interpreted the reading."

Students also discussed how using Hypothesis to collaborate before class allowed for more impactful in-class discussions. Student 2 explained that "…the quality of our discussions were greatly improved because we already had ideas of what we wanted to talk about coming into class from our notations on Hypothesis" and added that "…a lot of conversations in class…" took place "…that I don't think we would have had if we had done the traditional 'print the article off and read it' method" for annotating."

Better Understanding of Course Content

Students also indicated that using Hypothesis allowed for a better understanding of the course content. This was done by providing the students with a preview of what would be discussed in class for that week. Students 3 explained that using Hypothesis "…makes you read and think about what is going to be talked about in class…". Additionally, students felt that using Hypothesis gave them the opportunity to think about the course material prior to class. Student 4 explained that they "…found this really beneficial to give me time to process the information before coming to class and not being 'put on the spot' to respond to in-class questions with little time to process."

Finally, students saw this tool as a way to be better engaged with the course content. Students 6 explained that "…Hypothesis made our readings more engaging as we were able to annotate as we read AND see what our peers thought of different passages in real time." Similarly, Student 5 added that, while they "…typically do not enjoy reading", using Hypothesis "added an element that helped me understand the readings in the course to a deeper level" and "allowed me to expand on my thoughts and work together with my peers that made the reading a lot more bearable for me."

Recommendations

Based on student feedback, it is strongly recommended that students be given instructions on what is expected of them if Hypothesis is going to be used consistently. For example, several students expressed that using Hypothesis could have been improved if the instructor had included expectations for when posts and responses to other students should be completed (i.e., specific and separate due dates), guidelines for what comments should contain, and guiding questions to answer during the reading. Moreover, if it is expected that students need to respond to their peers, Student 2, for example, suggested that having prompts to respond to would help to set boundaries on the comments to ensure that they are relevant to the class and not "on extraneous things that didn't have to do with course content".

From an instructor's perspective, Hypothesis is easy to implement. The most challenging part was gaining access to Hypothesis through the university's LMS. Overall, uploading documents into Hypothesis was quite simple, and the Hypothesis website provides a feature to transform PDFs through Optical Character Recognition (OCR) to ensure the text was able to be highlighted. Reading through the annotations took less than 30 minutes and was extremely worthwhile based on the positive ways it added to student knowledge and course discussion. While Hypothesis was used during in-person graduate and undergraduate courses for course readings, Hypothesis also has clear connections to any discipline area, as well as asynchronous courses. Other uses of Hypothesis could include journal articles, websites, and videos to allow students to engage with course material in an interactive and personalized manner. We encourage the use of social annotation to deepen student understanding and engagement within agriculture courses.

References

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