

Collaborative Learning in the Digital Age: Using Hypothesis for Social Annotation

Ashley Thompson, Alexa Salinas, Jamie Gothard, Kendall Moore, Matthew Gold, Kellie Claflin

The Ohio State University

Department of Agricultural Communication, Education, and Leadership

College of Food, Agricultural, and Environmental Sciences

2120 Fyffe Road

Columbus, OH 43210

614-688-0610

thompson.4837@buckeyemail.osu.edu

salinas.102@buckeyemail.osu.edu

gothard.9@osu.edu

moore.4027@buckeyemail.osu.edu

gold.239@buckeyemail.osu.edu

claflin.11@osu.edu

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Introduction/Need for Idea

In a digital era of learning, collaborative, social annotation tools offer new opportunities to enhance student engagement and critical thinking (Kalir, 2022). Annotation involves adding comments, highlighting key points, making sticky notes, etc., to an electronic text through a social annotation technology platform (Novak et al., 2012). Social annotation technology emphasizes participation through collaborative learning and encourages self-reflection, internalization, and elaboration within dynamic, engaged classroom discussions (Brown & Croft, 2020; Gao, 2013).

This innovative idea poster explores how integrating *Hypothesis*, a social annotation software, into the classroom can improve engagement, comprehension, and collaboration, addressing a critical need for more interactive and technology-enhanced learning strategies (Ebner, 2009). The integration of *Hypothesis* into agricultural education provides benefits for educators, such as engaging students into deeper critical thought, while assessing their comprehension of the content (Jarrett, 2024). These skills are especially important within agricultural education as it is essential for students to understand, analyze, and communicate relevant information through hands-on and experiential learning experiences (Corder & Irlbeck, 2018). By implementing *Hypothesis*, educators can create interactive, student-driven discussions that enhance understanding and develop critical analysis skills relevant to the agricultural education, communications, and leadership professions.

How it Works

Hypothesis is a web-based social annotation tool that enables students and educators to engage collaboratively with digital texts in real-time, enhancing comprehension and active learning (Kalir, 2022). Further, this tool allows students to highlight, comment, ask questions, and discuss shared course materials with peers through a shared document, fostering a deeper understanding (Hypothesis, 2023). The ability to embed *Hypothesis* into learning management systems (LMS), such as Canvas and Blackboard, streamlines content engagement (Jarrett, 2024).

In a graduate-level historical foundations of agriculture course, *Hypothesis* was utilized for students to access course readings for most of the semester. The course instructor added the weekly readings as a PDF via the *Hypothesis* tool within the LMS and provided students context about the readings and what students should focus on. Students applied social annotation strategies, such as commenting, highlighting, and responding to articles via *Hypothesis* before the in-class meetings. Completing the reading and annotations before class allowed students to discuss their annotations and incorporate additional information into the lecture. The result was a collaborative learning classroom space that challenged students to process deeper and build upon one another's perspectives while providing a basis to engage with the lecture content.

Results to Date/Implications

Overall, the use of *Hypothesis* and social annotation was very positive for both the instructor and students. The instructor noted increased student understanding and more in-depth in-class discussions. The use of *Hypothesis* also increased student accountability to complete the readings before class. Additionally, the instructor could read over the annotations before class as a formative assessment to identify potential areas to review in class or respond to student questions. Student feedback was gathered by a Qualtrics survey containing two five-point Likert-

type items and one open-ended response question; six out of eight students (75%) responded to the survey. Students noted that *Hypothesis* was very beneficial ($M = 4.0$) and *Hypothesis* was extremely beneficial in helping them understand course content ($M = 4.7$). Students in the graduate class viewed *Hypothesis* positively as a tool to help them succeed in the course and understand course content.

In the open-ended responses, the ideas of *engagement with peers*, *better understanding of course content*, and *needs more consistency and clarity* were observed. Participants noted the increased engagement with peers that using *Hypothesis* provided. Participant 5 shared that “reading the *Hypothesis* annotations from my fellow peers helped me have a different outlook and perspective to view their [other students] thoughts and how they might be different than how I interpreted the reading.” Participant 2 shared “...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*.” Participants also indicated that using *Hypothesis* allowed for a better understanding of course content. Participant 4 explained they “...found this [*Hypothesis*] 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.” A need for more consistency and clarity when using *Hypothesis* was also identified. Participant 2 mentioned that “in the future... having an expectation or two due dates (one for responding and another for a response to peers) or if there can be some guiding questions posed by the instructor, it would be helpful to make this environment more collaborative.” Participant 4 shared that, “a downside for me was that I typically responded to the *Hypothesis* readings earlier than my peers so I never really got to have the social/collaborative experience as often as I would have liked, unless I went back in to read all of the comments before class.”

Future Plans/Advice to Others

Hypothesis will continue to be used in the historical foundations of agriculture graduate course. It is also used in spring 2025 with an undergraduate teacher preparation course. Those wishing to use *Hypothesis* in the future should provide consistency and clarity when giving assignments on the platform. Students suggested the need for guidelines for posting and responding, which could include expectations for when posts and responses should be completed, guidelines for what comments should contain, and guiding questions to answer during the reading. Students also indicated they would like more consistency in using the platform, such as using it for all readings.

Costs/Resources Needed

There is a free option to utilize *Hypothesis* and the opportunity for an institutional subscription based on a per-student model (“Pricing Page,” 2023). In our case, the instructor worked with college-level IT and instructional designers to gain access to the institutional subscription. As a class, we accessed *Hypothesis* through the learning management system (LMS), *Canvas* (it is available through integrations via *Blackboard Learn*, *D2L Brightspace*, and *Moodle*; “LMS Pages | Integrate Hypothesis with Your Learning Management System,” 2023). Students need access to a computer or tablet and internet access to connect to *Hypothesis* through the course LMS. All readings were saved as PDFs to load into the integrated *Hypothesis* tool.

References

- Andrews, C. D. (2023). *Social annotation practices and pedagogical approaches in first-year composition courses*. Indiana University.
- Brown, M., & Croft, B. (2020). Social annotation and an inclusive praxis for open pedagogy in the college classroom. *Journal of Interactive Media in Education*, 2020(1), 1–8. <https://doi.org/10.5334/jime.561>
- Corder, J., & Irlbeck, E. (2018). Agricultural communications skills, abilities and knowledge desired by employers compared to current curriculum: A literary review. *Journal of Agricultural Education*, 59(4), 177–193. <https://doi.org/10.5032/jae.2018.04177>
- Davies, R. S. (2011). Understanding technology literacy: A framework for evaluating educational technology integration. *TechTrends*, 55(5), 45–52. <https://doi.org/10.1007/s11528-011-0527-3>
- Ebner, H., Manouselis, N., Palmer, M., Enoksson, F., Palavitsinis, N., Kastrantas, K., & Naeve, A. (2009). Learning object annotation for agricultural learning repositories. *2009 Ninth IEEE International Conference on Advanced Learning Technologies*, 438–442. <https://doi.org/10.1109/icalt.2009.34>
- Gao, F. (2013). A case study of using a social annotation tool to support collaboratively learning. *The Internet and Higher Education*, 17, 76–83. <https://doi.org/10.1016/j.iheduc.2012.11.002>
- Hypothesis. (2023). Introduction to the hypothesis LMS app for students. <https://web.hypothes.is/help/introduction-to-the-hypothesis-lms-app-for-students/>
- Jarrett, C. (2024). Maximize engagement with hypothesis in your LMS. *Hypothesis*. <https://web.hypothes.is/blog/integrating-hypothesis-with-learning-management-systems-lms/>
- Kalir, J. (2022). The value of social annotation for teaching and learning: Promoting comprehension, collaboration and critical thinking with Hypothesis. *Hypothesis*. <https://web.hypothes.is/research-white-paper/>
- Novak, E., Razzouk, R., & Johnson, T. E. (2012). The educational use of social annotation tools in higher education: A literature review. *The Internet and Higher Education*, 15(1), 39–49. <https://doi.org/10.1016/j.iheduc.2011.09.002>
- Pricing Page. (2023). *Hypothesis*. <https://web.hypothes.is/pricing-page/>
- The University of Melbourne. (2022). *Social annotation*. Learning Environments. <https://le.unimelb.edu.au/news/articles/social-annotation>
- LMS Pages | Integrate hypothesis with your learning management system. (2023). *Hypothesis*. <https://web.hypothes.is/lms-pages/>