

## Exploring Students' Professional Identity Formation through the Use of Technology: Let's Jam!

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*Abstract: We explored student pharmacists' development of professional identity in a large-enrollment classroom setting. Professional identity formation develops over time through an assortment of experiences and can be a challenging topic for educators to teach. In a large-enrollment classroom, a small-group activity utilizing Jamboard, a Google application, was designed to encourage 1st-year student pharmacists to start exploring their professional identity. We describe our rationale and experience using this collaborative technology in a large-enrollment environment to help 1st-year student pharmacists explore their identities in an active learning format. We also report advantages and disadvantages of using Jamboard, for consideration when using similar applications.*

*Keywords: professional identity formation, Jamboard, collaborative whiteboard, student pharmacist, active learning*

We report on the use of Jamboard<sup>1</sup>, a Google application and instructional tool, for exploration of professional identity formation (PIF) among 1st-year student pharmacists in a large-enrollment classroom setting. Professional identity is thinking, feeling, and acting like the professional one is training to become (Cruess et al., 2019). The feeling component of this phenomenon can be difficult for learners to develop and for educators to capture or measure. One cannot “teach” professional identity as one would the cardiac system, for example, because identity development is an internal process and not knowledge to be acquired. Results of a scoping review showcased the diverse ways in which PIF is intentionally incorporated into pharmacy curricula, including extracurricular activities (e.g., career guidance, events), reflective writing, group discussions, and focused content/lectures (de Castro Araújo-Neto et al., 2024). Yet the literature does not indicate an ideal method for professional identity development. Rather, PIF is cultivated in everyday classroom moments and interactions, the foundations being built through reflection on professional experiences, exploration of one's values and beliefs, and interactions with mentors and role models (Moseley et al., 2021).

In a large-enrollment classroom, we designed a small-group activity utilizing Jamboard to encourage 1st-year student pharmacists to start “feeling” like a pharmacy professional, thus kick-starting their PIF journey. An interactive yet anonymous tool, Jamboard provided an ideal mechanism for identity exploration because it allowed for focused reflection and discussion, which are two PIF

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<sup>1</sup> Note, Google is discontinuing Jamboard at the end of 2024 (Jamboard Help, 2024; Moreno, 2023). Other third-party platforms can be used in a similar fashion, including FigJam (Figma, n.d.), Miro (Miro, n.d.), and Padlet (Padlet, n.d.). Google has also agreed to assist Jamboard users in migrating projects and data to other third-party platforms. Given that the opportunity to incorporate cloud-based collaborative whiteboards into classroom settings remains on other platforms, we hope this report of our experiences with Jamboard can assist others considering adopting this technology.

teaching strategies (de Castro Araújo-Neto et al., 2024; Moseley et al., 2021). In the following, we describe our experience using this collaborative technology in a large-class environment to help 1st-year student pharmacists explore their identities in an active learning format. We also discuss advantages and disadvantages of using Jamboard, for consideration when using similar applications.

### **Overview of the Technology**

Launched in 2016, Google's Jamboard ([Google](#), n.d.) was essentially a collaborative digital whiteboard accessible by any user with a link distributed by the creator of the board (Kharbach, 2024). Up to 20 frames (or "pages") could be created within each board, allowing users to create individual spaces for different tasks or discussion topics. The base version was an application that was available in one's Google account, and users could access it using a link or an app on a computer or smartphone. Because it was free, it was an accessible and feasible option for use in both large- and small-group discussions, as well as an assortment of learning environments.

Ideas could be shared on the board synchronously or asynchronously, adding to its flexibility. In-platform tools included writing/drawing tools (e.g., pens, markers, highlighters, and shapes) and idea-sharing tools (e.g., sticky notes and shared images). Users could also allow participants to "vote" to endorse others' comments. Templates were available, but users could also create a board from scratch. The ability to sort sticky notes allowed users to brainstorm and then group ideas into categories or themes. Importantly for PIF, actions by users of the board were not identifiable, supporting anonymous sharing of ideas in a safe space for sensitive conversations.

Jamboard has been used effectively in many different contexts and for different purposes. Examples include remote classes (Draucker, 2021), anatomy education (Sweeney et al., 2021), and formative assessment through student reflections (Wilkinson, 2024). We found the tool to be helpful in our teaching, as well as in faculty development and other situations where collaborative learning and discussion are beneficial to the task. Potential classroom uses of similar applications include interactive discussions; brainstorming, ideation, and concept maps; digital storytelling and gallery walks; provision of peer feedback; and formative assessment of student learning.

### **Overview of the Activity**

All student pharmacists in the entering classes of 2022 and 2023 participated in a small-group activity in a large-enrollment classroom setting where they were instructed to place virtual sticky notes on frames in Jamboard in response to question prompts ( $N = 220$  students). This activity occurred on the 1st day of class as a mechanism to introduce students to the pharmacy profession and help them see how they fit into it as unique individuals. For the activity, students were given directions by a faculty member before dispersing into smaller groups of 5–18 students. Group size depended on the total number of facilitators. Each group had at least one facilitator to lead them through the activity, and groups were spread throughout the lecture room, congregating around their facilitator. Faculty decided to split the students into smaller groups rather than utilize a large-group format for several reasons. First, we wanted to maximize comfort in sharing ideas, given that students were largely unfamiliar with each other and their facilitator. Second, we wanted students to collaborate about their budding pharmacist identities in a smaller setting with a pharmacist (or soon-to-be pharmacist) so each voice had space to share; the pharmacist–learner dynamic was important to us. Last, the frames would have become easily overwhelmed and messy with sticky notes if the groups were larger than around 20 participants.

Each facilitator had their own Jamboard link that was shared with the students in their small group. Table 1 represents the technical details of the facilitated activity. On each frame was a question,

and students posted virtual sticky notes with their anonymous responses. Students and facilitators sorted the sticky notes for the subsequent discussion. This step may have been helpful for students as it allowed them to see responses from proximal others at similar points in their PIF journeys. To allow participants to dive into their identity, question prompts were related to personal identity (e.g., what they were proud of, enjoyed, were learning to do, milestone moments, etc.), individuals who most influenced them, and professional identity (e.g., characteristics of a pharmacist, future impact as a pharmacist, etc.). Questions were organized such that complexity grew with subsequent questions. The first few questions were of a personal nature because they were easier to answer; the remaining questions were on professional identity because they required more exploration and discussion. Students were encouraged to reflect momentarily before posting. After posting, all sticky notes were viewable to the entire small group. At each frame, the facilitator then led their group through a guided discussion by asking for volunteers to share the story behind their sticky note. Facilitators were also encouraged to share their responses. Students were not required to share verbally, only to post anonymously.

**Table 1. Details of activity.**

Activity detail	Fall 2022	Fall 2023
Number of student participants in the activity	132	88
Number of Jamboard questions/frames	8	10
Number of facilitators	10	9
Total time of activity	40 min	40 min

The facilitators were either faculty members or 4th-year student pharmacists on an academia-focused rotation with a faculty preceptor. Each facilitator participated in a roughly 30-min training session before the activity. A facilitator guide was created as a resource to reference during the activity. Debriefing comments from facilitators were collected after the activity and indicated the positive value of this activity in personally connecting with students and students seeing their connection to the pharmacy profession.

## Results

Sticky note responses were collected and organized. Responses were collected from six questions in 2022 and from seven questions in 2023. This represented approximately 1,400 total student responses in the form of sticky notes. Jamboard data were available for download from Google Drive as PDFs. Researchers sorted the responses into categories and combined the data from both years. Reported in this manuscript are the categories from two questions, which were chosen because the categorizations showcase the breadth of responses received from the question prompts. Table 2 depicts the questions and corresponding categories, listed from most to least frequently mentioned.

**Table 2. Sample of categorization.**

Question prompt	Categorization of sticky note responses
List 1 or 2 characteristics that you associate with being a pharmacist	Empathy/caring/compassion/personable/kind Knowledgeable/competent/organized/detail-oriented Integrity/honest/trustworthy/reliable Professional/leader/hardworking/dedicated Communicator
List one person who has greatly influenced your development	Family member Pharmacist Supervisor Friend/significant other Teacher/mentor/professor Religious leader Celebrity/famous person

Sorting the data into categories and ranking answers by frequency, as shown in Table 2, allowed the researchers to better understand the beliefs and perceptions of students in their 1st week of pharmacy school. For 2023, the researchers split the second question into two questions, one that asked specifically for students' development *as a person* and the other for their development *as a student*. While the categories remained the same in 2022 and 2023, this alteration reordered the categories, which shows how different groups of people influence students' development in different ways. In 2022, a family member was overwhelmingly the most influential person on student development. In 2023, after the question was split, a family member was again the most influential person in regard to development as a person; whereas, a teacher/mentor/professor was the most influential in regard to development as a student. Categorizing the Jamboard data into thematic categories allowed for interpretation of the student experience on a large scale. Faculty used this categorization to better understand who influences student PIF and how it is influenced. Because the coordinators found this activity beneficial in getting students to express themselves to peers and facilitators, our goal is to continue to find meaningful ways to incorporate PIF activities into the curriculum that encourage students to "feel" like a pharmacist.

This activity benefitted students because it was an interactive, explorative activity focused on students expressing themselves. It helped the facilitators get to know the students, but it also helped the students get to know each other, as well as themselves. Facilitators noted that students aptly engaged in placing sticky notes on frames and discussing afterward. Jamboard was a helpful tool in facilitating this activity because it allowed for anonymity, real-time engagement, and visibility of responses for all participants. Further, it laid a foundation for exploration of PIF in future activities.

### Challenges

Though Jamboard provided an accessible tool for collaborative learning, there were challenges we faced when using it, particularly for our large classes. Jamboard frames became difficult to read when too many sticky notes were added to a frame. We overcame this challenge by dividing the class into smaller groups and creating a different board for each group. This required the use of multiple facilitators, which may be too resource-intensive in some settings. From a scholarship standpoint, we aimed to pull the data and analyze student responses. There was no easy way to accomplish this, so we had to export the boards and manually cut and paste each sticky note into a spreadsheet for qualitative review. Last, though the content of individual sticky notes was anonymous, sharing

personal information on a virtual whiteboard for others to see may have created discomfort for some students.

## Conclusion

Jamboard provided an easy and accessible method to engage students in active learning and PIF exploration, even in large-classroom settings. Though this tool is being discontinued, there are several others that operate in a similar fashion that may be used for this purpose. Researchers found it to be an effective way for students to reflect on their personal and professional identities on their path to becoming pharmacists.

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