PASSchem

Transcript

00:00:00:26 - 00:00:09:00
Ananya: PASSChem Project Authors Interview.
Introduction.

00:00:09:00 - 00:00:14:00
Sharon: So my name is Sharon Brewer and I'm an associate professor in chemistry here at TRU.

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Lindsay: And my name is Lindsey Blackstock, and I'm an assistant teaching professor at TRU, and I'm also a proud alumni of environmental chemistry, with my bachelor degree here as well.

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Sharon: Lindsay, was actually one of my research students when she was here. So we've been together a long time. Very long. It's awesome to have her as a colleague right now.

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Lindsay: So Sharon and I were lucky enough to take advantage of some of the funding that was available for the new Open Press. In the end of last fall, so, yeah, about October, we learned of the opportunity and we were actively working on another similar related project, putting this work into LibreText. And we were so excited to have the support of the Open Press because we were able to take some of our ideas from our initial work and transform it into a polished and interactive experience that we hope that students will be able to use and value in their studies for general chemistry.

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Sharon: Our project is called PASSChem. And so what we did, we spent a lot of work, before we started working with TRU Open Press, diving into the literature and looking at how we could create scaffolded and supported solutions for students who are doing practice work at home. We found with our teaching and first year chemistry is that students always want more and they want to practice, but they don't always have the guidance and support. When they're not with their instructors. And we were seeing a gap there, particularly in the OER framework, like there wasn't open supported solutions to guide students through practice problems. So that's what we came up with this framework. And then what we've been working on with Open Press Project is now, taking these solutions that we've created using this framework and putting them together in a press book.

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Ananya: What advantages will students gain from this project?

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Lindsay: I think one of the advantages students will see is they will have support outside of the classroom. So these, scaffolded solutions were created to mimic the process that Sharon and I had in the office when we interacted with students. So in our original team, we were collaborating with another professor, doctor Rena Roberts, who is an institutional designer, and she came at it from the theoretical perspective and what was used in the literature to support student success, build confidence and, have them retain the material, whereas we came from the practitioner lens. And our goal was for students to have an immersive guided explanation through different practice problems. And we think that students will benefit because there is avenues for different learners to come and approach the materials. So this particular platform, what we're hoping will both help students that have no idea where to start, they may not have the confidence even to make the first move, but it will also help reinforce ideas for students that are very confident with the material.

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Sharon: And as more and more faculty are looking at adopting open textbooks and, you know, moving away from the traditional textbook. The lack of solutions that support students with is a real barrier, I think, to adoption. So one of the things we felt by going down this road is that it's going to hopefully benefit students, that, there will be increased adoption of maybe OER resources when they're supported homework. It's an openly accessible resource and it's going to help benefit skills. And like Lindsey said, we've designed it. So it's a choose your own adventure so students can decide their entry point into the solution that makes sense for them, and then they can go forward or backwards depending on what they need. Some students might just want to check their answer, where some students really need that sort of instructor guidance to carry through. And in the OER world, at least in chemistry, there's not a lot of solutions to practice problems and sometimes there's not even answers. So that's what we were trying to fill that gap to again, support students.

00:04:33:28 - 00:04:38:21
Ananya: How thoroughly does the project address fairness, inclusion and accessibility?

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Sharon: Well, the sort of idea for the whole project was about improving access and improving fairness by providing this support outside of the classroom. So when we were coming up with the literature based template for the solutions, we were looking at how to support diverse student needs and all ranges of abilities. So I think, you know that that increasing support and thinking about accessibility was sort of fundamental to the project at the start.

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Lindsay: I think one of the other massive attributes of working with TRU open press is that you have experts that understand accessibility needs, and moving from working on our own to working with this really excellent team that has started to come together at TRU, we can't be more grateful because having that expert lens has helped us pivot from some of our initial formatting or design or implementation ideas to ones that are more accessible for a variety of needs and users.

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Ananya: In what ways do students acquire skills, insights, and understanding through the project?

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Sharon: The whole idea about the solutions is there's so much literature, that demonstrates that doing homework improves skills. And so the whole idea of the support for this project is to increase student abilities and student success and confidence. I mean, one of the things we see in chemistry is that even when students, you know, know what to do, they're not always confident in doing it on their own. So the whole idea is to increase those students skills, confidence and success, to for their achievement in their courses.

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Lindsay: And I think another thing with this project is with teaching philosophy. We know that there's, a benefit for students that participate in formative assessment. And there's this idea that homework problems are formative assessment for students. However, if they are not provided with a solution to cross check their answer with all they can say or learn is I know it or I don't know it, I got the answer or I didn't. So we're challenging the idea that a typical homework problem is a formative assessment. With our comprehensive pass solution, we are giving students a true formative assessment. They can really go step by step to assess do I really know what I'm doing? And they have an opportunity to learn from their mistakes because it can pinpoint, oh, it's right here where I made that mistake. And here's the explanation as to why that was an important move to make in getting the answer right.

00:07:33:35 - 00:08:05:19
Sharon: When a student comes to ask us how to do something in our office, we never just say, you do this. We always ask them questions and get them to try and discover the knowledge. So that's the approach that we implemented into these solutions. It doesn't just say you do this, it says, oh, think about this or here's a hint. And they can again choose to show hide with our expert help. that implemented this, what level of guidance they want throughout. So, you know, it's having them develop the skill set to be able to answer the problems.

00:08:05:19 - 00:08:08:15
Ananya: What might a future project scope entail?

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Sharon: Oh, we have so many ideas. We just want to keep going and going and going. So with our fantastic support from TRU Open Press, we've developed a number of these solutions that are implemented in this - we're going to call it edition one - of our PASSChem pressbook. But we already have many more that we want to implement. So our vision for the project is kind of twofold. For our own task and project, we see that we can just expand the content that's available and, you know, increase the number of examples in the number of practice problems that are out there. But we also really feel that the pass structure or pass framework that we've used to develop these solutions could be implemented to other courses as well. And so we're working on making sure that we can disseminate that framework. So hopefully there could be pass biology pass you know other things using that framework. And it'll expand from there. That's our vision I think.

00:09:04:23 - 00:10:03:45
Lindsay: Yeah, I think another really fantastic aspect of working in the OER space is that we can include both diverse voices and relevant examples into our work as well. So, having different contributors to help build this content is really important. Additionally, being able to have the iterative process of revising or adapting the current work that we have to make sure that it is always up to date where needed or is tweaked. If there was a small mistake, per chance. Also, we really have a vision of trying to work towards building more representative examples that will inspire students to care about chemistry - Why is chemistry relevant to you or your particular career path? And trying to maybe include more examples that might interest students as well.

00:10:03:45 - 00:10:18:17
Sharon: Yeah, for different disciplines or different, you know, we have our students working with us that are interested in teaching or nursing or engineering. And, you know, whereas when we were focusing initially, we've learned so much through developing this, we think we can really expand the content. So it's there and we hope we'll be able to do that.

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Ananya: How sustainable is the project regarding funding, upkeep and continuous improvement?

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Lindsay: The nice thing is because Sharon and I are passionate, regardless of funding, we always have the ability to be slowly adding to our collection. However, we continue to apply for additional small funding resources so that we can continue to hire student research partners to help collaborating on that project. With sustainability, certainly having an online resource is going to be, like environmentally sustainable. Having it free is more financially sustainable for students and users. and then of course, being able to be on a server, there's that cyber infrastructure that helps with sustainability as well.

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Sharon: And I think again, one of the things about chemistry is the content that we've created is not going - it can be tweaked and added to, but it's not going to be out of date in terms of the need for for that scaffolded solution and practice of these skills. So and that way it's also going to continue to live on. But as as we've both I think articulated, we want to see it grow as well. That's certainly one of our things that we're really passionate about.

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Lindsay: We also really look forward to potential collaboration. So perhaps if there were other interested individuals from other disciplines who wanted to learn more about our work or our template, we're always willing to listen to feedback from others, and we look forward to hearing what others have to say and how they might be able to use this work in their practice as well. Yeah!

00:11:57:29 - 00:12:00:19
Ananya: Thank you for the interview, Sharon and Lindsay.