Teaching Innovation Learning Lab

ISSUE 5 · SPRING 2022

TILL TALK

the newsletter

TILL Teaching Innovation Award Deadline Extended to March 30.
The application deadline for the TILL Teaching Innovation Award has been extended to Wednesday, March 30. This award honors outstanding UofL instructors who demonstrate a commitment to student engagement and learning through their work on one or more innovative teaching practices. Award applicants may be self-nominated or nominated by their peers.
Learn more and apply.

Dear Friends of the TILL,

In this edition of **TILL Talk**, we explore ways that our faculty are integrating virtual reality in their teaching.

> *We learn…*
> *10% of what we read.*

> *30% of what we see.*
> *80% of what we experience.*
> ***- Edgar Dale, 1969***

Immersive virtual reality (IVR) places the user directly into a virtual environment by using a headset that blocks out the outside world. This gives the user an intense and personalized scenario for learning. Computer-based, non-immersive virtual reality is an option for users without headsets. Students use a computer (or even a phone app) to control an avatar in a virtual world simulated on the screen.

TEACHING INNOVATION

Immersive Virtual Reality (IVR) in Education

On February 17, the TILL hosted a faculty workshop to showcase IVR. The workshop, hosted in partnership with the **Nystrand Center**, featured VR expert Dr. Shannon Putman and showcased examples of how IVR aids in teaching concepts across content areas. Attendees tried out IVR themselves using Vive Focus headsets. View more IVR workshop photos **here**.

Here’s what some of the attending faculty had to say about IVR:

> *“User experience is much better and easier than I expected on these devices. I’m excited to learn how to potentially build lessons using them.”*

> *“The main takeaway was the amount of education content now available for VR headsets. Having experimented back in 2014, there was not much out there. There is so much VR ed*

> *content now.”*

> *“Very informative and easy to comprehend! I didn’t know all the different disciplines that could benefit from VR.”*

82% of faculty attendees said they were likely or very likely to implement VR in one of their courses.

VR Resources by Content Area

- **Classic and modern languages**
- **Law enforcement**
- **Medicine**
- **Military**
- **Music**

COMMUNITY

Virtual Reality Q&A with Dr. Danielle Franco

Dr. Danielle Franco, associate professor of chemistry, has been teaching with virtual reality over the past year. We caught up with her to learn more.

Can you briefly describe how you use virtual reality in your course?

I created an online space using virtual reality where I upload 3D objects (atoms, molecules, orbital models, chemical units). In this space I record classes and invite students to interact. For large classes, I usually record the “mini lecture” in virtual reality and present to the class. I sometimes use online simulations as well.

Why did you decide to use virtual reality and simulations instead of more traditional instruction?

Chemistry can be very abstract sometimes. In the past, I showed illustrations to the students, but after acquiring a VR headset and experimenting with the VR world, I thought that it would be amazing to show the students molecules and bonds with my own hands, and it would keep the students more engaged with the material. In chemistry, it is easier to connect concepts from different chapters in the textbook using virtual reality.

How difficult was it to create these for your students?

Initially, I needed to search for 3D models online and convert these models to a format compatible with the app that I was using (Spatial). This process was a little time consuming when I started experimenting back in January of 2021, first recording in mute and then making “voice over” montages before I made my videos available. What I do right now is upload the objects and record “mini lectures” on the topics that I cover in class. It is easier to edit, and I can create all content in one take without the need to voice over my recordings.

How have your students reacted to the virtual reality simulations?

The students love the simulations! I received several comments in my teaching evaluation from students saying that one of the things that they loved the most about the class was the VR videos. Some students emailed me to say that they thought that the simulations were very engaging and helpful.

Do you have any advice for other faculty thinking about using something similar?

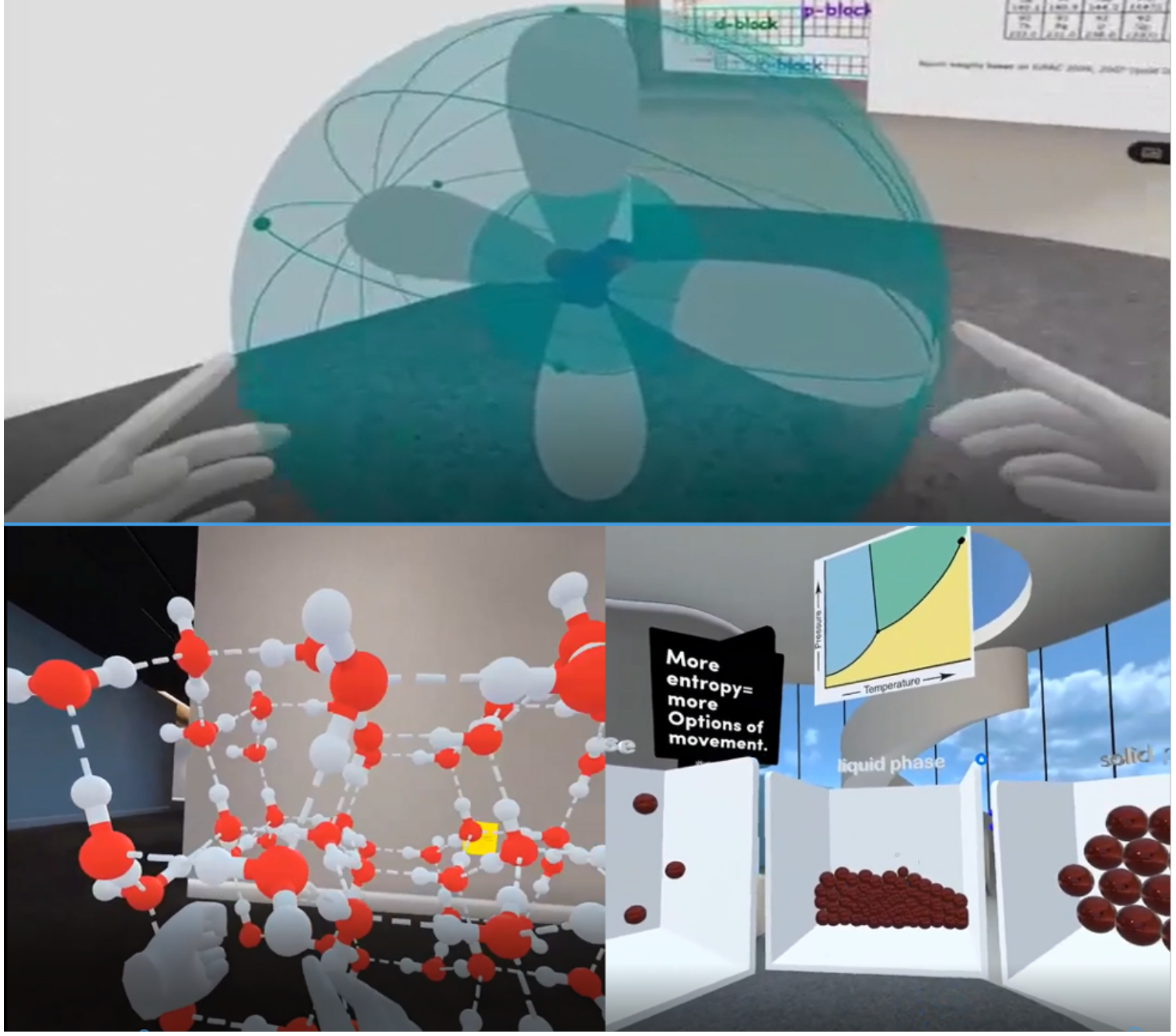
My advice for faculty from any field is if you have a VR headset, go ahead and start producing content for your class. There are apps that allow you to upload 3D models and make recordings, or you can record the screen as you are teaching a class. Some apps also offer the access via computer or cell phones, so students could follow your virtual reality presentation even without a virtual reality headset.

For faculty who don't have a VR headset, there are plenty of simulations available for STEM classes that promote engagement in class. Although they are not available in virtual reality, they are a great tool to engage the students in the class. Here are some resources:

- **JavaLab**
- **CU-Boulder's PHET Simulations**
- **Concord Center's Molecular Workbench**
- **Gizmos**

Is there anything else you'd like to share?

I want to encourage all faculty, particularly those who teach 100 and 200 level courses, to give virtual reality a try. Students love these resources and get more motivated to learn the material. For the content creators, it is also fun!



Images illustrating models from Dr. Franco's virtual reality simulations.

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