

HyFlex Instruction

*The Leatherman Tool of
Makerspace Learning*

Active, Engaging,
& Adaptable

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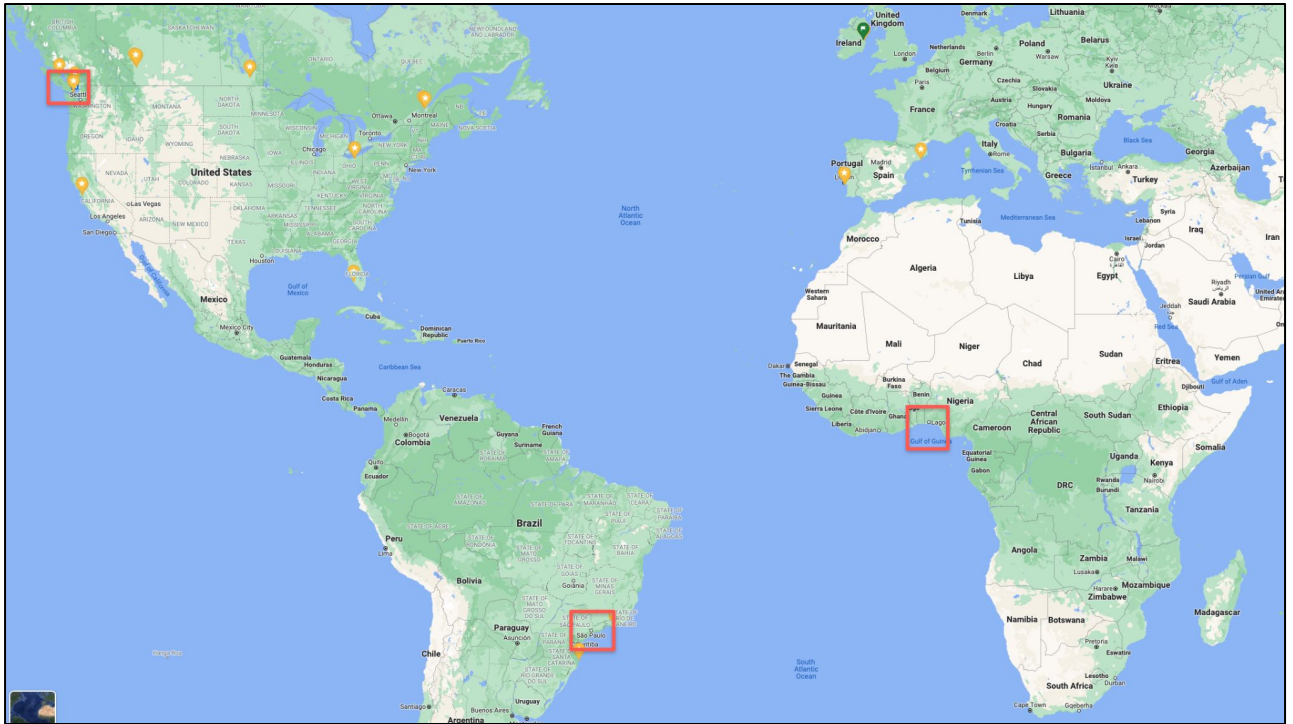
Introduction:

- Background:
- Library based makerspace
- Lot's of introductory workshops
- 80% of workshops are taught at the invitation of professors in their for credit classes, almost always in support of an upcoming class assignment.

Outline

1. Introduction
2. What is a Hyflex Active Learning workshop?
3. Why Hyflex?
4. Creating Hyflex Workshops
5. Leading Hyflex Workshops - Best Practices
6. Equipment to Facilitate Hyflex Workshops
7. Conclusions

Here's an outline of what I'm going to discuss over the next few minutes



- In a recent HyFlex workshop, learners participated from around the world, including F2F in Victoria, BC
 - [NEXT] Canada,
 - [NEXT] Chicago, IL,
 - [NEXT] Lagos, Nigeria, and from
 - [NEXT] Sao Paulo, Brazil.
- Global participation like this is a beneficial side effect of the work done to make workshops accessible to learners from their dorm rooms during COVID-19 lockdowns.

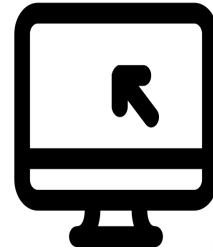
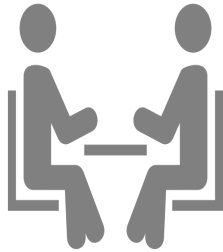
Introduction

(aka: The Problem)



- The COVID-19 pandemic was the catalyst for revamping our makerspace workshops so that they could be delivered not only face-to-face...
- [NEXT] but also online via video conference.

Hybrid Flexible -or- HyFlex



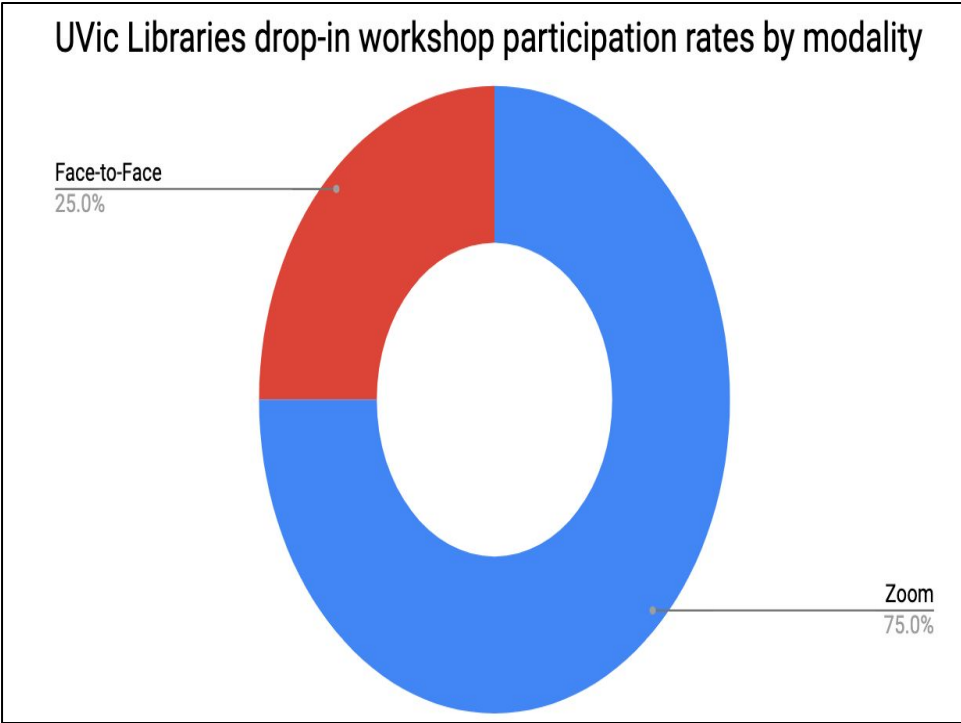
- Now that we are mainly back on campus we are offering newly upgraded Hybrid-Flexible (HyFlex) workshops so that both on campus and remote learners can participate in our active learning workshops
- **[NEXT]** face-to-face in our library-based makerspace...
- **[NEXT]** remotely via video conference, **-OR-**
- **[NEXT]** remotely on their own schedule using fully online self-directed learning resources.



- We initially anticipated that our HyFlex workshops would be relatively short-lived, and that we would return offering only our
- [NEXT] on-campus flipped learning workshops early in the Fall 2021 semester...
- [NEXT] However many students continue to take advantage of our video conference, and self-directed workshop options.



- Feedback from learners indicate that this is not only because of Covid-19 concerns but because HyFlex helps them:
 - **[NEXT]** Better manage family responsibilities,
 - **[NEXT]** help manage mental health issues, and
 - **[NEXT]** supports out of town learners

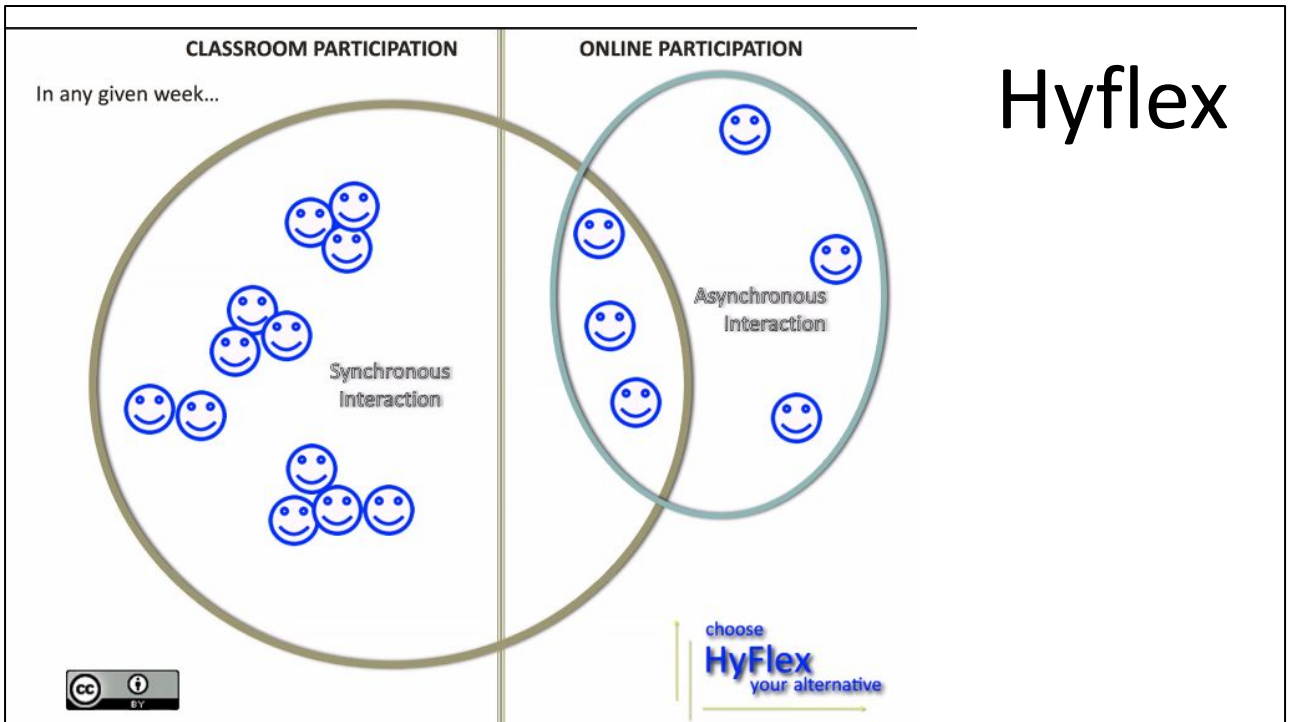


- During the fall of 2021, 75% of HyFlex workshop learners participated via video conference and 25% participated F2F.

What is a HyFlex workshop?



- The hybrid-flexible, or HyFlex format is an instructional method that combines F2F, video conferencing and self-paced online learning.



Hyflex

- Learners can choose how they would like to participate in a workshop given their specific needs at the time it is being offered as illustrated in.

Universal Design for Learning



Provide Multiple Means of
Engagement
Purposeful, motivated learners



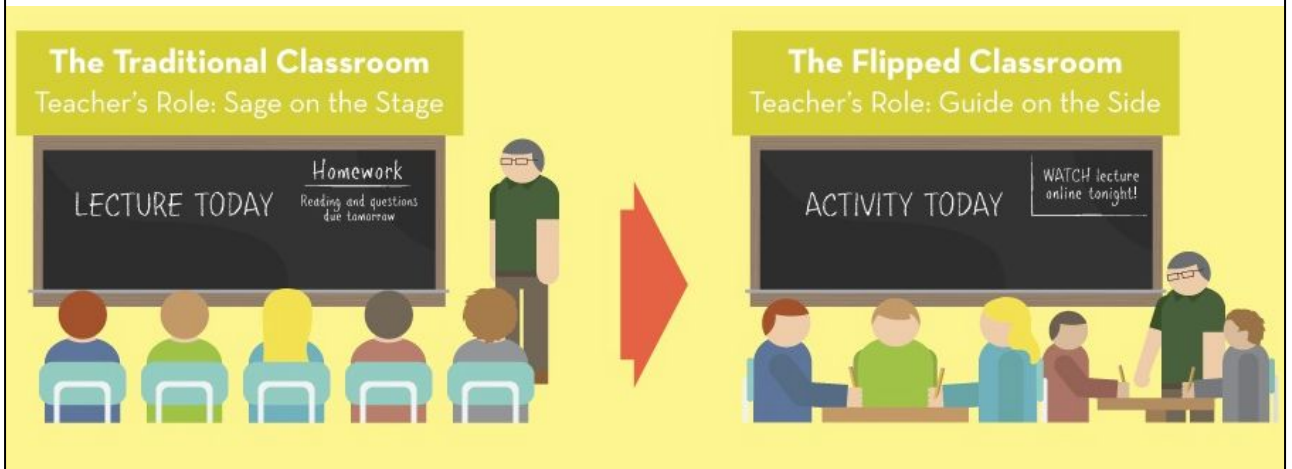
Provide Multiple Means of
Representation
Resourceful, knowledgeable learners



Provide Multiple Means of
Action & Expression
Strategic, goal-directed learners

- David Rhoads, a HyFlex researcher, recommends that when creating or converting a workshop to a Hyflex format to also consider implementing universal design for learning principles to make the instruction as accessible as possible for learners of all abilities.

Flipped Learning - A Key Component of HyFlex



- Dr. Rhoads also recommends using the flipped learning technique where students typically complete instructional work at home, using videos and exercises.
- And then F2F workshop time is then devoted primarily to hands on activities to build on the knowledge and skills they've acquired
- The teacher is then available to assist and guide students who need help during the F2F workshop time.

Why HyFlex?

-



- HyFlex workshops “provide students autonomy, flexibility, and seamless engagement, no matter where, how, or when they engage in the course:
 - Sickness
 - For rural and remote student
 - Family responsibilities



- Not only can HyFlex benefit learners, but it can also benefit instructors.
- For example, if an instructor cannot be present in the makerspace for a HyFlex workshop, they can lead the workshop remotely, while students join from the makerspace and Zoom.
- Professors can also incorporate self-directed online learning resources into their for-credit classes.

HyFlex does not require video conferencing!



- Let me be clear!
- **Hyflex workshops do not have to include a video conference option.**
- If desired, a HyFlex workshop can offer only F2F and self-paced online instruction and activities.
- This version of HyFlex is recommended for use by instructors who don't have access to hardware for live video, or who don't have a teaching assistant to support online participants

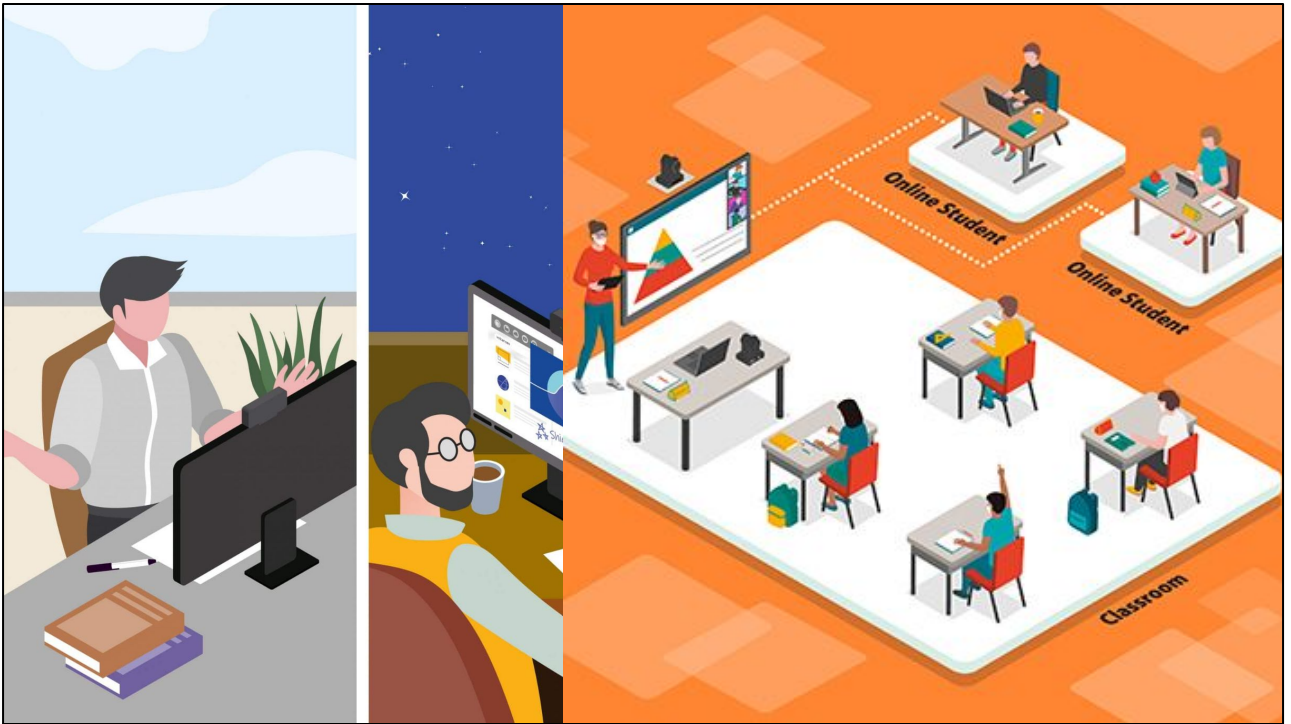
Creating HyFlex Workshops



- Central to the HyFlex model is the principle that no matter which instructional path a learner pursues, whether it be F2F, video conference, or self-directed, HyFlex workshops should lead to the same learning outcomes, regardless of the path



- The first step in creating a Hyflex workshop is to create SMART learning objectives for the workshop.
- (Specific, Measurable, Attainable, Relevant, and Time-bound)



- [NEXT] Work to create a completely online **self-paced, or asynchronous, workshop** and then...
- [NEXT] If necessary add F2F activities, and video conference activities if the self-paced activities aren't ideal for the other instructional modes.



- Create F2F instruction based on the self-paced activities if possible.

[Introduction](#)

[Pre-Workshop Activities](#)

[Workshop Activities](#)

[Earn a Workshop Badge](#)

[Additional Resources](#)

[Land acknowledgement](#)

Pre-Workshop Videos & Activities

This workshop is primarily hands-on practice with TinkerCad in order to learn to use key features of the software and be able to create your own 3D designs. To participate fully please do the following **before the workshop**:

25 minutes.

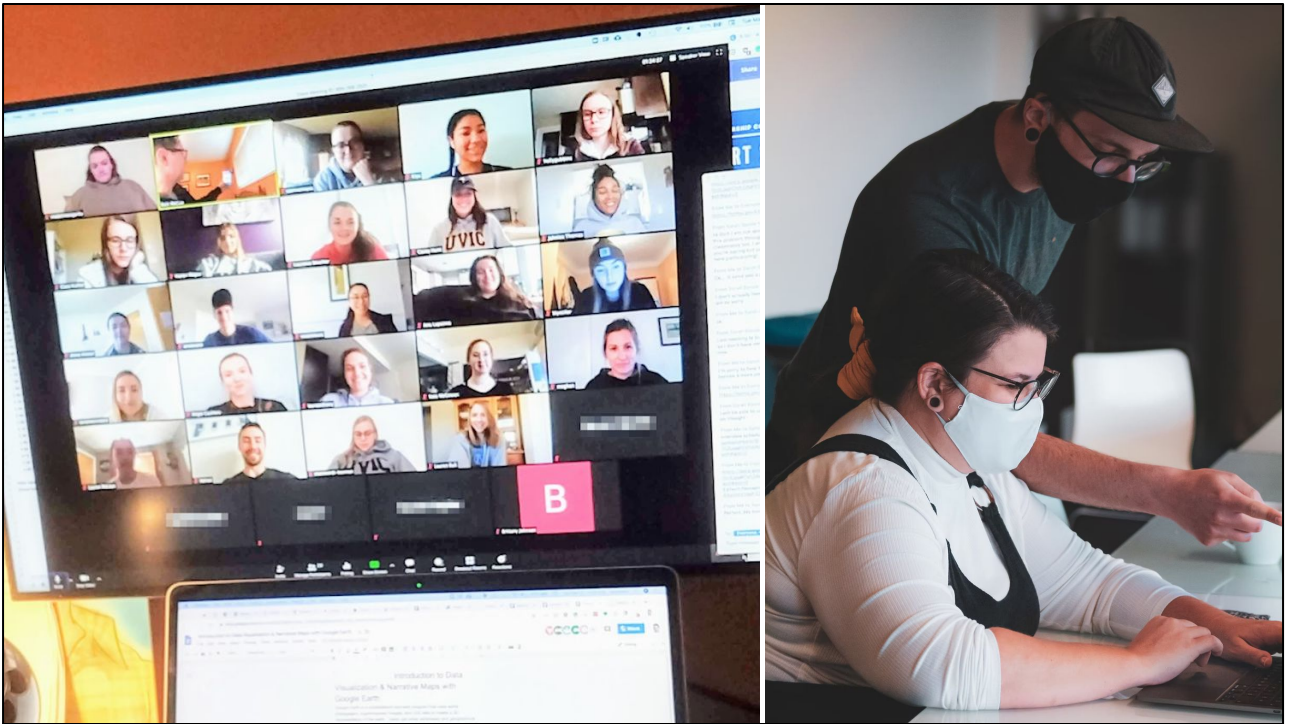
- Setup a [TinkerCad Account](#) & follow along with at least the 2nd through 4th videos.
- [Introduction to TinkerCad](#) (just watch, don't try to follow along) (3 min)



- [How to move around in TinkerCad](#) (1 min)

- Put as much instruction as possible into pre-workshop assignments so that the vast majority of F2F time is spent doing hands-on activities

Leading HyFlex Workshops - Best Practices



- A key ingredient for effective HyFlex workshops that are taught via both F2F and video conference is for the instructor to be supported by a teaching assistant (TA).
- The TA can monitor and support the online participants during the instructional portions of the workshop so that the instructor can focus only on the F2F participants.



- The cognitive load on instructors who split their attention to teach both F2F and video conference participants is tiring, or overwhelming. TA's can let the instructor know if there are online questions.



- During the hands-on portion of the workshop, learners work through the activities they've chosen at their own pace, with the instructor circulating through the makerspace to check in with learners.



- Time should be taken by the instructor to check in with each video conference participant to see how they are doing and offer assistance.

Equipment to Facilitate HyFlex Instruction

- There is a wide range of equipment that can be used to facilitate HyFlex workshops offering F2F and video conference instruction.



- If equipment has not already been purchased for your makerspace, Here is a list of low cost, but effective HyFlex video conference enabling tools:
 - **[NEXT]** Computer for instructional presentations and video conferencing
 - **[NEXT]** External camera that is more easily directable than a built in laptop cameras - A cheap one will do.
 - **[NEXT]** Wireless microphone so that online participants can hear the instructor and F2F classroom learners - Rode Wireless Go works well for us
 - And a sound system, or large computer speakers, connected to the computer so that F2F classroom participants can hear online learners

Potential Downsides of Hyflex?

- Every teaching method has strengths and weaknesses, and HyFlex is no different. Some HyFlex challenges include:

Potential HyFlex Downsides

- Remote participants - internet access?
- Access to Makerspace required for some Hands-on activities
- It takes extra time to create HyFlex workshops
- Leading HyFlex workshops requires practice
- Teaching without a TA can be very difficult

- Remote participants must have internet access and a computer fully to participate
- Hands-on activities for some tools or technologies can be difficult or impossible to do without access to the physical makerspace
- It takes extra time to create HyFlex workshops including time and effort to create equally effective online activities [4]
- Leading HyFlex workshops can be difficult to do well without practice
- Teaching without a TA can be very difficult

Conclusions



- The HyFlex workshop format has been an excellent framework that has allowed our makerspace to transition from fully online workshop delivery during COVID-19 lockdowns to a Hybrid F2F/online model.
- HyFlex also allows us to effectively and efficiently serve many learners who in the past could not attend workshops in our physical makerspace due to sickness, family responsibilities, mental health issues, or physical distance.
- Pandemic or no pandemic, we will continue to offer our workshops in a HyFlex format to better serve our university community.

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We will be offering a 3D design Workshop some time in the next month or so....