THE FUTURE OF EDU
March 15-19, 2021
***on Clubhouse with* AULA FUTURE**

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What's Aula Future? www.aulafuture.org
Aula Future is a research and academic organization with the mission of growing the next generation of innovative creators. With Aula's self-directed, project-based pedagogy, participants develop new technologies, experience, and skills in art thinking and design. During our program, participants lead innovative research projects and construct demos based on their interests while collaborating with facilitators, external institutions, experts, and peers.

What's covered in this document?
These notes are a transcription of a series of discussions held on the Clubhouse app. The chat rooms were not meant as a means of self-promotion, but to collectively discuss and debate methods, experiences, and ideas around the future of education. Our hope is that these conversations serve as an incubator for ideas that enact real change in the world.

Talk Schedule Overview

March 15th	March 16th	March 17th	March 18th	March 19th
Online learning design	The power of project-based learning	AR, VR, and new technology in the classroom	Using art and design as learning methodologies	Innovation-driven education (How can connecting with companies motivate learning?)

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15.03 | Online learning design:

Discussing the framework that supports learning experiences in an online setting; techniques, challenges, and insights.

- We are exploring and discovering the shifts in methodology that we have to learn given **digitization** in the time of COVID-19.

- Consider what and how we bring back (in terms of learnings) *after* the pandemic. How can we keep the benefits of a flow of education that mixes directed and self-directed learning?

- We want to explore how we as facilitators will make **decisions** on content, structure, and learning activities, especially surrounding the nature of the tech used to support online learning.

Key Challenges / Discussion questions / Takeaways:

1. As you are thinking about learning design, set your intention. What kinds of people do you want to see in the world (What behaviors and learning do we want to come out of a lesson)? This will set the tone of your curriculum.
2. Accessibility (digitalization bubble): How not having access to tech and the internet affects learning.
3. How have learning objectives shifted given the change of medium?
4. How are you encouraging interactivity / engagement?
   Is there a place for aimless play?
   - Stay connected with your students and cultivate lifelong learning. Now, school is more of an ongoing process, not a 4-5hr thing.
   - Build context. Since their attention is scattered, we need to create a lot of context for why they should be interested in what we are teaching

General meeting notes:

- We should consider the **psychology of human learning** in general before jumping into online learning.
- How will the brain handle online learning?
    - We need to design specially for the energy-guzzling brain. **Less is more** for adolescence. Some stress is good, but not a lot. How can we lessen stress?
    - Challenges: screen fatigue, self-consciousness, facing growing up in general.
    - **Battling screen fatigue**: get people moving every 20 minutes, 1 minute resets often, manage the cognitive load (i.e. reduce what they're seeing on the screen), and prepare ice breakers.
    - With online learning, aim to **eliminate the non-essentials**.
- Train facilitators to **integrate mindfulness**.
- What can we take back to the physical?
    - **Project-based learning models**, and **feedback loops**
    - Showing students that they don't know as much as they think.
        - Exercise: Get varieties of the Google logo and ask your students which is the right logo without looking at it to show they don't soak in info (Lauren).
- **Social learning**, doing projects that force students to connect with their community.
- Build in **checkpoints** and **redesign assessments**.
    - Make them "scaffold" the critique and set the scale of what achievement should look like. Remember that they are also part of the feedback.
- Benefit of online learning:
    - Students are forced to be more self-directed. This gives you a chance to instill a love of learning. Could we actually get students to love their homework? :)
- **Rigor and relevance framework** (for more information click here)
- What **behaviors and learnings** do we want to come out of our curriculum? What is your **intention**? What sort of people do you want to see in the world?
    - Developing self-directed, lifelong learners
    - People who are aware and who are curious, and who think critically before they design.

16.03 | The power of project-based learning (PBL):

What are the benefits and limits of a project-based learning experience and how does this change in the context of e-learning?

- We want to investigate **how** we can have students work on a project over a period of time (PBL)**,** in the context of online and e-learning environments.

- What might be the **focus** of these projects? For example, should they be solving a real-world problem or answering a complex question?

- How might the product of a project-based curriculum **encourage social learning**? Put another way, could creating a public product or presentation for a real audience put education into social context, and involve the student's community to their benefit?

Key Challenges / Discussion questions / Takeaways:

1. How can we **implement projects into our curriculum online** to create a culture of creativity despite the physical distance?
2. How do we **incorporate hands-on prototyping** and engage in movement as students work on projects at home?
    a. Scheduling "co-working sessions" where there is no official instruction
    b. Incorporating mini design sprints
3. Is PBL **too mentally draining** for students? Do they want something more traditional?
4. Digital spaces are not socially neutral. How are we thinking about **accessibility** when planning our projects?
5. How do we connect these projects to a **broader context** of the community/the world?
6. Project-based approach improves critical thinking, collaboration, creativity, and communication skills.

General meeting notes:

- We have to deliver the curriculum in a completely new way. How can we deliver **hands-on experiences** in the home?
    - Online platforms that allow simultaneous collaboration.
    - https://www.soundtrap.com (Namarah) platform for creating music together online)
    - Using zoom and other platforms, sending **home kits** that contain weeks worth of STEM material
- How can we **support the teachers** and train them to use PBL effectively?
- How do we scale (i.e. the "**problem of scaling project-based learning**" / "sustainability of programs")? How do we create **bonding** and a feeling of moving forward?
    - From a student (Ida): generating 'tea-times', collaborative creating, sending at-home kits, and reaching out to more students. **Putting an emphasis on mental well-being**. "We are not a manufacturing company"
    - Improve and extend funding opportunities.
- Going toward a more **self-directed learning** approach, students can learn at home using their own tools. Do we even need kits? Perhaps a solution could be around creating groups and electing student leaders who can better relate to students.
- **Student-led learning**:
    - Maybe they already have their own systems of learning that they engage with among peers (e.g. apps, websites, platforms that teachers have not heard of).
    - Encourage sharing information among peers/working in groups. Placing the learner in the center of the conversation and making sure they know how to take initiative.
- Are we in danger of losing what's "good" about project-based learning? (e.g. the social components of learning)
- Example of an organization that handled the issue of scaling well (Simi):
    - Junior Achievement Worldwide – project-based entrepreneurship programs in middle/high schools in the U.S., where students develop and launch their own start-ups.
    - **"Pay-it-forward"** model makes it self-sustainable: many current facilitators were former students of the program.
- **Focus on designing the culture**, and the participants will do the rest.
    - Create a sense of bonding through the PBL experience.
    - Trust the student and communicate more with them.
- Reflect on what our real **learning goals** are before we assign a project.
- (Nancy): We need to account for more **student learning styles** as we plan our curriculum, but how do we touch all of them?
    - **Not all students need PBL.**
- What will **the role of the teacher** be in the future?
    - **Facilitator**. How can we train teachers to become better facilitators and encourage self-directed learning?
- We need to **focus on mental health** as well as creating personal connections.

17.03 | AR, VR, and new technology in the classroom:

Exploring how technology might improve or harm education.

- Discussing how we can harness technology as collaboration tools, to **encourage self-directed learning** and **enhance social experiences**.

- We want to explore how new technologies like VR could be good for **scaling STEM experiences**. In traditional learning, it is sometimes difficult for students to understand a concept. Digital simulations and models could help students. Think virtual field trips across the world and handling animals in biology class.

- We know that not everyone can have a VR headset at home right now. We want to explore ways to deal with the **accessibility** problem.

Key Challenges / Discussion questions / Takeaways:

1. Technology creates spaces for **interaction/engagement**- possibility of cooperating with teams from different parts of the world
   Tools mentioned:
   - Adobe Aero- new software for creating interactive visual experiences for AR
   - **Seesaw app** (https://web.seesaw.me). Used in many virtual classrooms for combining online learning tools
   - The existential challenge of having too many platforms (What is the best way to blend all the platforms together?)
2. **Scaling STEM experiences** using tech
   - AR can bring learning into the home through something most kids have; a phone.
   - VR makes you physically move more.
   - Makes it possible to do advanced research
   - Effective assessments in real-time and in collaboration with students
3. Fears and frictions: the issue of **accessibility/having enough** for everyone to use (it's still relatively expensive technology)
   a. Expanding browser-based AR/VR
4. We should consider the dangers of the **gamification** of education.
5. How can we as facilitators become more tech-savvy for our students?

General meeting notes:

- Tech can expand and deepen relationships. But what about the physical elements of learning?
- Could we turn the home into a **maker space**?
- **Immersive museum experience** – using VR/AR to replicate means of going into a museum in pandemic times.
- Kids are digital natives, so they can handle this change perhaps more than we give them credit for. We shouldn't be fearful.
- One of the biggest challenges right now is **accessibility**. But AR could be a solution because almost everyone has mobile phones.
- The World Bank Convention designed a VR program to **improve literacy**. We should look at trialing VR in the education space as well.
- **Training programs**: often it can be safer to use VR to train people to be accustomed to dangerous spaces or situations. They can also:
  - Gain practical skills relating to specific machinery or site that is unavailable.
  - **Safety training:** Getting workers comfortable or familiar with the situation of working on an extremely tall building, for example.
  - Driving a streetcar – do a **simulation** beforehand so drivers are familiar with the feeling of motion sickness beforehand.
  - **Anti-drug-use education for teenagers:** the more "drinks" you have, the woozier your VR vision will feel.
- AR/VR is used for people with mobility issues like people in **physical therapy**. The person can lift their arm higher in VR than in real life.
- Could we augment self-directed learning since there are so many platforms available?
  - Technology can solve the hassle of navigating between platforms for learning. Example: **Seesaw app** (https://web.seesaw.me). Used in many virtual classrooms for combining online learning tools (ability to upload videos/photos of their homework, share PDF, communication tool among parents, etc)
- How can we onboard parents and facilitators and train them in new tech?
- How can we create a **plan to integrate more technology into our schools**?
  - Partnering with designers, neurologists, learning designers, AND STUDENTS.
  - Ask to what degree you will use the technology? Do you actually need it? What problem are you trying to solve? Know when and when not to use it.
- What are the dangers of **gamifying** education?
- What are the risks to kids too young using technology? Often the interface is designed to be addictive so that it draws you to come back to use it.

18.03 | Using art and design as learning methodologies

How could art and design methodologies help improve education / learning?

- Art methodologies, or “art thinking” as we like to call it at Aula Future, involve using empathy, creating a **long-term resource bank, prolonging solutions, and getting comfortable with ambiguity.** We want to explore if and why adding these skills and thinking processes to our lessons matters.

- We want to explore how educators have been incorporating design. Does it help students develop as deep thinkers and ultimately “doers”? Do we need to **create new learning goals** around how to innovate?

- How might instilling more design and art thinking into the curriculum provide us with a process to weave through all of the **project-based learning experiences** that we create with our students? Could we be developing these types of innovative students and blur the line between education and work?

Key Challenges / Discussion questions / Takeaways:

1. Art/design thinking teaches students how to deal with ambiguity and challenges certainties.
2. How do we effectively teach facilitators these methods?
3. Art/design thinking emphasizes the use of imagination, resourcefulness, and co-creation in the creation process.

General meeting notes:

- How can we develop design challenges around people's entrepreneurial ideas in order to grow them? How can we start thinking of art as design projects?
- The combination of art and design processes could **set agendas** and facilitate learning.
- **The "why" of using art-thinking, not just design-thinking:** In design, it is custom to think practically. But thinking too practically could force us to take baby steps toward actual change, while art-thinking allows for grand imagination.
- The future of education involves a combination of art-thinking and design-thinking.
- Art thinking is useful for instilling comfort with ambiguity.
- Everyone has creative potential, we need to debunk the mystery around what art is and start using it as a tool.
- You can use art thinking to put what you're trying to teach into context.
- These methods can reach different audiences and can be much more accessible.
- We need to actively maintain our **resource banks**: A bullet list or notion document where you're actively writing down the things that interest you on a daily basis. This is, in essence, data collection.
- **Using play** to come up with **new words** (We call them "sub-words" at Aula Future); This is important because language sets new agendas.
    - Example was given of the word "ecocide"– how can we acknowledge the harm that is done unless we actually have a word for this?
- **Sub-words:** Combine two different words from seemingly unrelated areas (e.g. biology and fashion), and your brain starts to come up with ideas as to what it could mean → "bio fashion"
- Art-thinking emphasizes **the multi-sensory experience**. How to utilize all of the different senses to enhance the learning environment.
    - Example of teaching an anatomy class and having students physically touch or point to the areas on their own bodies.
- Art thinking relates to resourcefulness. What materials are available and are not being efficiently used? How do we take what already exists and re-purpose/re-imagine it into something new to answer the needs of our time?
- Community/collaborative aspect of art/design-thinking. Often artists and designers rely on each other and their environment for inspiration, resources, or even the execution of a project. How can these methods translate to the education sector?

19.03 | “Innovation-driven” learning

How could connecting/collaborating with external institutions enhance learning?

- Workforce **skills and requirements have changed**; companies are looking for more innovative solutions and more creative employees. By directly connecting with companies and providing real-world applications to student learning, could we work to **close the education-work gap**?

- When is connecting with companies useful and when is it not? For example, when should we **motivate students extrinsically** and introduce the pressures that come with **meeting business goals**?

Key Challenges / Discussion questions / Takeaways:

1. For **educational institutions**, it means adopting a more practical and applied approach to education, and for **businesses**, it means being open to more ambiguity and exploration, less practical “problem solving”, and more self-reflection.
2. How do companies benefit from having an education partner?
3. How do we practically make these connections?
4. Teaching to help students to understand their preferences and skill sets will better prepare learners to know what type of work/business environment they will do well in.
5. Developing **independent learners and educators**.

General meeting notes:

- How is the future of work connected to the future of education?: Humans need work to make sense of life; how might education provide better content and experiences?
- Who should be responsible for closing the gap between education and work? Perhaps it is the businesses--they should be more vulnerable and expand their purpose of existing.
- **Challenge for educators:** The kids must be exposed to the working environments pretty early. How? Through coached mentors?
- Understanding the school-work gap: Educators can help with student preferences and self-development, and companies can hire based on an alignment of culture.
- The difference between **teaching to recognize preference** and **teaching skills** (Carlos)**:**
    - Any skill can be taught, but if a student is able to recognize their preferences and go into a company that matches their philosophies, they will do great and shine in this work environment.
- Companies are often saying that they can't find the talent they need, but they are job searching in a very narrow space. Working with education systems could broaden that horizon.
- **Take a values-first approach**; the common goal of innovation and social impact. Hiring standards shouldn't disclude shared values.
- The education system is supposed to facilitate learning; how can we facilitate better learning **by following the student**?
- The current curriculum is taking away innovation. Educational systems are not designed to follow the learners so that they can self-actualize. Give them freedom within boundaries.
- **Can companies create their own academies**? What are the downsides? Since we know the environment affects learning, perhaps a school in a company would provide the right environment for innovation. An alternate idea: **Could schools have companies** or a more company-like environment?
- Should we actually be modeling education systems based on the real world? Because the real world is riddled with problems.
- Perhaps there are some people who don't need to go to an academic institution in the first place. We are starting to learn more online, making learning more accessible. More accessibility means a more diverse market.
- Education systems should be **developing independent people** who can be self-sufficient creators and innovators, not just for the workplace.
- We need to have a bridge between academic institutions and industries to develop curricula faster. People don't care about degrees, they care about specific skills.
- Technology and innovation are accelerating at a pace that is higher than we ever anticipated, therefore educators should be equipped with meta-cognition skills: learning how to learn.
    - **"Just-in-time" learning**
- How can **local businesses** work together with students to curate a sense of environment and community where we can all grow and share together?