The Innovation Collaboratory

Enabling + Catalyzing a Universal Learning Framework @ ASU with 15 Big Innovations

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Context

From January through June 2018, ASU’s University Technology Office (UTO) embarked upon an inclusive and integrated technology planning activity. The goal was to align innovative technology adoption and practices with extraordinary teaching, learning, and research outcomes. Leveraging an intentional appreciative inquiry methodology, the plan that emerged detailed 50 opportunities to innovate teaching, learning, and research efforts in the form of new or enhanced activities and programs over the next one, three, and five years, speaking to both the prospect and challenge of scaling nascent efforts.

The plan reflected dozens of interviews with faculty, learning designers, technology leaders, students, and others, along with workshops and analysis, to determine how to leverage the current strengths within UTO and across the university to advance the ASU Charter and the conception of the Universal Learner. Of the 50 opportunities, 15 were identified as vital for UTO to lead in 2018-19, in partnership with other units and individuals across ASU. There must be a shared space dedicated to bringing these 15 Big Innovations -- and future opportunities -- to fruition; the establishment of an Innovation Collaboratory was recommended to be the incubator.

Program Description

The Innovation Collaboratory is the physical incubator for enabling and catalyzing a Universal Learning Framework at ASU. Beyond the physical spaces it will occupy across ASU campuses, it is also about cultivating a shared innovation mindset that leads to action. As such, this project will drive into action 15 Big Innovations at ASU to explicitly advance 5 focus areas: digital fluency, student success, smart campuses, cross-institution collaboration, and next-generation learning environments. These focus areas were conceived to move ASU towards the vision of Universal Learning -- an evolving model of higher education that is “capable of being of service to all learners, at all stages of work and learning, from all socioeconomic backgrounds, through educational, training, and skill-building opportunities.”

UTO will initiate partnerships, led by the Provost Office, with various units and individuals across the university to foster collective ownership of 15 Big Innovations. The Innovation Collaboratory, led by 5 cross-institution workstreams tied to each of the 5 focus areas, will ensure the 15 Big Innovations are approached creatively, embed evaluation criteria and measurable goals, and
keep the focus areas firmly at the forefront of all design. Workstreams guide, evaluate, and support the development and success of the 15 Big Innovations. The 5 focus areas (the focuses of the Innovation Workstreams themselves) along with the 15 Big Innovations are briefly defined below. Big Innovations are aligned to one of the focus areas, though they may become linked to other focus areas based on process and outcomes.

NOTE: The workstreams are intended to be a permanent fixture at ASU, with some participants rotating on or off based on the Big Innovation being developed at the time. Learning-focused members of the workstream will act as an advisory board guiding technology development.

Innovation Workstream Focus Areas
The ‘Focus’ of each of the five Innovation Workstreams. Each workstream will have its own charter.

Digital Fluency
Digital fluency is understanding how to navigate digital environments, intuitively adapt to new digital contexts, and use technology to create or collaborate on original content. Programs must emphasize digital creation, not just consumption. Institutions cannot expect to graduate digitally-fluent students if the people directing their education are not digitally fluent. Cultivating high digital fluency requires ongoing faculty, staff, and student engagement and support.

Student Success
Student success is the culmination of several purposeful, intertwined strategies and approaches. Improved retention and persistence towards a degree requires a focus on creating authentic learning experiences, recognizing the acquisition of new competencies and skills in a variety of formats, fostering deep interactions, humanizing digital immersion learning, personalizing learning, and providing timely, proactive interventions.

Smart Campuses
In the realm of smart campuses, institutions are incorporating Internet of Things (IoT) technologies to meet sustainability goals and make improvements to infrastructure. Sensors constantly collect data so institutions can better manage resources, and community members benefit from interacting with an environment that alerts them to relevant events, resources, and more.

Cross-Institution Collaboration
As higher education moves towards generating more multi- and interdisciplinary experiences, deeper collaboration and resource-sharing between colleges will be vital. Rising to the challenge requires culture shifts and the breaking down of silos characteristic of large universities, which pose a threat to scaling effective practices.
Next-Generation Learning Environments
The adoption of new approaches to teaching and learning calls for updated physical and digital spaces. Configurable and adaptive spaces for interactivity, group work, and hands-on activities where people can customize the space based on the activity is key.

15 Big Innovations
If the 5 Innovation Workstreams are like product teams, think of the 15 Big Innovations as the products that the product teams are creating. Each Big Innovation is assigned to an Innovation Workstream and will get its own project (product) charter.

Near-Term: August 2018 - January 2019

1- Digital Fluency Benchmarking (Digital Fluency)
Defined as achievable within one year
If UTO supports the assessment of digital fluency (understanding how to use technology to navigate digital environments, intuitively adapt to new digital contexts, and create and collaborate on content with others), it will generate important benchmarking data about the digital fluency of ASU community members to improve digital fluency training strategies.

2- Improved/Timelier Assessment for Creative Activities (Student Success)
Defined as achievable within one year
Students do not always receive grades for one assignment before needing to turn in the next, which results in them making and being penalized for the same mistakes. UTO can lead and/or partner to support automated assessment technologies wherein students receive timely and robust feedback to apply to their studies. The academic community is already exploring/leveraging tools including GradeScope, Peerceptive, Critviz, and more. This is not about replacing instructor feedback but providing another timely window into progress toward learning outcomes, which will help both faculty and students.

3- Experimental Smart Spaces and IoT Solutions (Smart Campuses)
Defined as achievable within three years
The expanded investments in smart campuses will give ASU a competitive advantage that attracts new students while involving them in innovation development. In this vein, UTO can support the application of experimental “smart” spaces to teaching and learning with the goal of identifying new use cases for IoT for bolstering student success.

4- Cross-disciplinary Micro-credentials (Cross-Institution Collaboration)
Defined as achievable within one year
If UTO supports the infrastructure (including blockchain) and deployment of micro-credentials and digital badges for inter- and multidisciplinary learning pathways, it will nurture more balanced skill sets in the participating students. (Such micro-credentials and badging could tie in to the notion of assessing/recognizing knowledge acquisition as described in “Improved/Timelier Assessment for Creative Activities.”)

5- Scaling Adaptive Learning to Digital Immersion Courses *(Next-Generation Learning Environments)*
*Defined as achievable within one year*
UTO supports the embedment of adaptive learning technologies -- defined as an education technology that can respond to a student's interactions in real-time by automatically providing the student with individual support -- in all (or most) learning contexts with the belief that this activity will foster more frequent and engaging uses of next-generation learning environments. Due consideration must also be given to the growing body of adaptive learning vendor solutions with a lens toward assessment and in the online space proctoring of students. UTO stands ready to contribute technology and other leadership at EdPlus to bolster retention, persistence, and the attainment of learning outcomes for digital immersion learners.

**Mid-Term: January 1 - July 1, 2019**

6- OER Pilots *(Digital Fluency)*
*Defined as achievable within five years*
Open educational resources (OER) have been a game-changer for the education and educational publishing industries. To contribute to this burgeoning category of learning materials, UTO must support the smart adoption OER -- including understanding and supporting current OER initiatives at ASU. In doing so, UTO should pursue a Provost Office partnership to foster fluency around the creative use of existing materials and the production of new materials.

7- Towards Actionable Data: A Machine Learning Program *(Student Success)*
*Defined as achievable within three years*
The underlying technology stack for AI is the design and tuning of machine learning algorithms. Adding simulation and the overlay of legacy data and real-time data streams to machine learning functionality will enable ASU to more efficiently process actionable data toward institutional student success goals.

8- Personalized Campus Experiences for Learners *(Smart Campuses)*
*Defined as achievable within three years*
The ASU Achievement App being released in the Fall of 2018 has built geo-fencing technology to allow students who consent to the services to be informed in real time of academic, co-curricular, and extracurricular products and services that are generated through AI and machine learning. As ASU expands its infrastructure from smart stadium and fan experience to
smart campus and learner experience, the instrumentation of the campus and attendant applications of AI into smart campuses will create an instant feedback loop that informs the disbursement of university resources and provides community members with vital information.

9- Collaborative XR Design Repository (Cross-Institution Collaboration)
*Defined as achievable within three years*
If UTO supports faculty-, staff-, and student-designed XR environments, it will infinitely scale the technical components, art, and experiences available for ASU community members — and the whole of higher education.

10- 1:1 VR Program for Learners (Next-Generation Learning Environments)
*Defined as achievable within three years*
The XR family of technologies has potential for cultivating engaging learning environments, but not everyone can afford the latest gadgets. UTO must work towards a 1:1 adoption of VR headsets for students to promote equity and access to next-generation learning environments. Virtual reality is particularly poignant for digital immersion students who depend on flexibility.

**Far-Term: October 1, 2018 - July 2019+**

11- Faculty/Designer Playground for Emerging LMS Tools (Digital Fluency)
*Defined as achievable within five years*
Ultimately, a university partnership to deploy faculty training around the technologies and tools that can be integrated into the current ASU LMS will lead to greater digital fluency for students.

12- Blockchain Infrastructure for Lifelong Learning (Student Success)
*Defined as achievable within five years*
To enhance ASU’s learning offerings while attracting new students, UTO can form collaborations with other institutions, organizations, and corporations around the use of blockchain to deliver micro-credentials or certificates, including for professional development.

13- AI-Powered Tutors and Chatbots (Student Success and Next-Generation Learning Environments)
*Defined as achievable within three years*
In partnership with the Provost Office, EdPlus, and others, UTO will design, develop, and deploy enterprise-wide AI chatbots/tutors. Third party products like the Admissions Hub are already demonstrating value of these types of tools that will save students time in building their course schedules while providing instant interventions if they are struggling in particular areas. **NOTE:** This is especially useful for digital immersion students who can feel isolated/alienated.

14- Embedded Virtual Assistants in Learning Spaces (Smart Campuses)
*Defined as achievable within five years*
If UTO embeds virtual assistants in classrooms, labs, libraries, and other learning environments, it will enable community members to seamlessly configure spaces to meet their needs.

**15- Innovation Collaboration Database and Forum (Cross-Institution Collaboration)**

*Defined as achievable within three years*

With the ASU community being large and distributed, it is challenging for someone to know the full scope of the institution’s initiatives. When a faculty or staff member decides to launch a new research study or implement virtual reality in a course, they often do so independently or with a small team from their own college/school. The advent of an AI-enabled repository or database could alert stakeholders to the breadth of existing related ASU initiatives and contact information regardless of what phase they are in. This technology development would jumpstart organic cross-institution collaborations.

**Objectives**

- Design the Innovation Collaboratory, initially building the main space on one campus while planning for offshoots on the other campuses.
- Recruit and convene 5 cross-institution Innovation Workstreams (one for each focus area) to devise strategies for actionizing, guiding, and supporting the 15 Big Innovations defined above.
- Forge cross-institution partnerships with various units and individuals, creating collective ownership of the 15 Big Innovations (e.g. Provost’s Office, EdPlus, Academic Technologies, etc.).
- Workstreams guide the development of the 15 Big Innovations, establishing metrics and criteria framework for measuring progress towards advancing five focus areas.
- Actionize the 15 Big Innovations, within one year.
- Regularly communicate project progress in clear, universally resonant ways.

**Schedule of Milestones**

*First six months*

- **Value-Building, Workstream Engagement Blueprint, and Recruitment (July 2018).** Create an engagement blueprint for participating in the five workstreams and recruit ASU community members. This is also a period where the value of implementing 15 Big Innovations must be well-articulated and understood to catalyze a shared innovation mindset. Two soft launches (1- learning designer/directors and 2- UTO community via Engage event) will garner feedback that will incorporated into this initiative.

- **Workstream Charters and Kick-Off (August 2018).** Devise workstream charters for each Innovation Workstream, along with completing recruitment, and convening each workstream for the first time. Workstreams respond to their respective workstream charters and then collaboratively create a project charter for the first Big Innovation they’re tackling. Participants will be privy to an operational framework that guides
engagement, roles, and workflow. Workstream metrics and criteria will be established for evaluating the advancement of each of the workstream focus areas.

- **Progress Report (September 2018)** Develop and disseminate a high-level report of the progress on this program, including any obstacles surfaced and a plan to surmount them.

- **Operationalization of First 5 Big Innovations, Planning of 5 (September through December 2018)** Begin catalyzing the 5 Big Innovations defined as on the near-term; also begin strategizing for the 5 mid-term Big Innovations).

- **Six-Month Report (December 2018)** Develop and disseminate a high-level report summarizing the progress on this project, reflecting the work accomplished within the workstreams.

**Stakeholders**
- ASU UTO
- Provost Office Leads
- EdPlus Leads
- ASU Library
- Key Learning Design Leads across the Schools
- Deans
- Academic Senate
- Selective Faculty and Instructors
- Selective Students

**Project Management**
- Chuck Kazilek, Chief Technology Innovation Office, UTO; kazilek@asu.edu
- Samantha Becker, Strategic Communications Consultant, UTO; sbecke11@asu.edu
- Gemma Garcia, Director of Online Curriculum and Digital Innovation, College of Liberal Arts and Sciences; gemma.garcia@asu.edu

**Risks/Dependences**
- The partnerships must be strategic, and the partners must be equally invested in advancing the 15 Big Innovations towards the measurably positive outcomes.
- Workstream participants must be willing to put in the work, and receive due recognition.
- The Innovation Collaboratory must be equipped with technologies and tools that enable experimentation and solutions, as well as configured in a way that promotes collaboration, flexibility, active learning, and action.
● The spirit of the Innovation Collaboratory must extend into the digital realm, with workstream participants and project partners digital immersed with each other, both synchronously and asynchronously.
● The 15 Big Innovations must concretely and measurably advance the focus areas they are tied to.
● The costs associated with the 15 Big Innovations may require fundraising/budget reallocation/creative budgeting.
● The 15 Big Innovations must enhance teaching, learning, and/or research at ASU.
● The 15 Big Innovations must be designed in service of Universal Learning.
● The six-month arcs imply that the 15 Big Innovations will take a virtually equal amount of time to actionize, but stakeholders may find that this is not the case, particularly as many “kitchen table” opportunities were conceived as potentially achievable within three or five years.
● Stakeholders must see these 15 Big Innovations as disruptive in the best way possible, without overburdening their current workloads; they must fully comprehend the value they will create within their environments. “There is a need for progress and change, but also continuity.” (From the the latest Big Audacious Ideas podcast, featuring Lev Gonick.)