

GAZEL-ATIC-AzTEA Labster Consortium Project
April 22, 2019 Teleconference Report

Attendees: Sam Butcher (Labster), Kasha Kiros (Labster), Steve Peters (GAZEL & ATIC), Oris Friesen (GAZEL & ATIC), Henry Goldberg (ATIC), Tom Schumann (Gateway Community College), Byron Davies (Black Swan Learning Corp.), Michael Amick (Pima Community College), Bill Lombardi (GAZEL)

Introduction

Steve Peters explained that because of personal/family issues he had to postpone Labster Consortium meetings for a while. He is now ready to restart the GAZEL-ATIC-AzTEA efforts to establish a consortium to provide Labster virtual online lab simulations for Arizona educational institutions (schools, community colleges, universities) at reduced or no cost. There is particular need to reduce the cost for K-12 schools because of their very limited financial resources.

Recently Steve has had preliminary discussions with Tom Schumann, Executive Director of the Center for Entrepreneurial Innovation (CEI) at Gateway Community College, and Byron Davies, CEO of Black Swan Learning Corp., about the potential use and development of Labster virtual lab simulations for workforce training in the biosciences industry. Steve arranged this teleconference to introduce Tom and Byron to Labster staff, get an update on Labster activities in Arizona, overview Gateway Community College CEI's workforce development online program for the Arizona biosciences industry, learn about Black Swan Learning Corp. capabilities in enhancing digital instruction, and continue discussion of the development of the Arizona Labster consortium.

Labster Update

Sam Butcher, Customer Development Manager at Labster, explained Labster is a 6-year old educational technology software company that builds virtual online laboratory simulations (modules) for science courses. He manages a team of six people in Labster's US headquarters located in Boston. Kasha Kiros, Labster Regional Director for Scientific Partnerships, reports to Sam. Kasha has been working at Labster for 9 months, and is responsible for Labster projects in Arizona and other southwestern states.

In Arizona, Labster has been working with ASU, University of Arizona, Pima Community College (Robert Wakefield), Cochise College (John Walsh), and Coconino Community College. Its most recent engagement is with Grand Canyon University to help them create online biology and chemistry courses for their nutritional sciences program.

Labster has a major relationship with ASU working with Philippos Savvides, Learning Technology Manager for ASU EdPlus and ASU Online. Labster simulations have been used in ASU biology courses for about two years. In November 2017, Labster/Google/ASU established a partnership to offer Virtual Reality (VR) enabled lab simulations at ASU. VR simulations were introduced last August in three ASU courses and 1000 students used these simulations, so the interest is high. Any new simulations developed for ASU will be fully VR-compatible, and will be expanded beyond biology to areas such as chemistry, physics, and nursing.

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Sam stated that Labster has mainly focused on providing virtual lab simulations for universities and community colleges, but are now focusing on creating more content for K-12 schools. They want to work with school districts rather than individual schools so they can capture economies-of-scale, and would like assistance in working with Arizona school districts. Kasha added he has had early-stage discussions with ASU Preparatory Academy about using Labster for high-school education.

Steve noted that the University of Arizona should be interested in Labster for its biology and telemedicine programs. ATIC and GAZEL have ties with the University of Arizona telemedicine program, and the president of the university has a medical background.

Gateway Community College CEI “LabForce”

Tom Schumann explained CEI is a business start-up incubator partnering specifically with the biotech industry in Arizona. They have been working primarily with faculty/researchers at ASU and U of A wanting to commercialize bio technologies they have developed. CEI has been in operation for 6 years.

About 6 months ago, CEI launched a new initiative called “LabForce” for lab-technician workforce training for the biosciences industry, which is a large and rapidly growing industry in Arizona (about 1500 companies and 150,000 employees). CEI has received a \$5 million workforce development grant for the LabForce initiative.

LabForce is intended to perform various functions: upskill existing staff on biotechnologies (e.g. genetic technologies); provide quality management training (instruction on standard operating procedures, value of documentation, and implementing quality management systems); and provide courses for entry-level lab technicians required for certification by the bioindustry association (basic lab techniques, quality management, and safety).

LabForce will provide a building for training at the U of A biomedical campus in Phoenix and an online workforce development portal for housing and distributing courses. They expect to have at least 500 online courses available when they launch in 2020 (two large companies are providing 400 courses and about 40 other content providers will be involved). A learning management system will be selected shortly to manage the content, execute e-commerce transactions, and store training records. LabForce will be piloted this year with five companies, and CEI has spoken with 30 industry CEOs and various other relevant stakeholders about this initiative. LabForce is intended to become a self-sustaining business after the initial launch, with customers in Arizona as well as nationally.

Labster Experience in Workforce Training

Steve asked Sam what Labster has done in the area of workforce development and to comment on the intersection between the academic and workforce development

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spaces.

Sam responded that Labster has primarily worked in the higher education space but has also done work with industry. Labster's core function is providing students access to laboratory education, which includes lab processes, techniques on how to use equipment in a digital simulation, and how to follow lab protocols. It is currently used by 200 universities/colleges and is a solution for distance laboratory education.

Labster has been used in industry for refreshing existing employees as well as training new employees. It is used by the US Centers for Disease Control and Prevention (CDC) for training on lab processes, equipment, and safety protocols. Labster has also developed simulations used by Thermo Fisher Scientific and Novo Nordisk in Asia. Tom commented he would be interested in learning more about Labster's activities with these organizations.

Tom explained that lab technician training follows a blended-learning model: standard operating procedures learned from online courses, fine motor skills learned in front of an instructor in a physical lab, and then followed by company certification by a supervisor after 6 months of work. Sam stated that Labster provides pre-learning for necessary skills effectively before on-site learning.

Discussion on Workforce Development Training with Labster

Steve commented community colleges have a key role to play in workforce training and Labforce is an important initiative for the biosciences industry. Community colleges link with companies in workforce development and with schools in preparation to enter college and the workforce. The new Arizona Superintendent of Public Instruction would likely be interested in such initiatives.

Kasha stated he sees good potential to use Labster for LabForcelab technician training as well as nursing training programs.

Michael Amick, Vice President of Distance Education at Pima Community College, explained there are many dynamic and disruptive trends such as various types of automation that require companies to train and refresh their employees. Pima Community College is receiving requests from companies like Caterpillar to prepare their engineers with virtual training before doing physical work in the field.

Byron Davies stated Black Swan Learning Corp. develops methods of instruction that are more powerful than traditional methods: faster, more reliable, more persistent, better enable fluency, and accomplish this on a large scale cost-effectively. He is interested in integrating Labster virtual lab simulations with their systems, so that workforce training would be turbocharged to deliver fluency on a large scale. Sam responded that Labster welcomes effective pedagogical approaches and would like to discuss this further. Sam added that Unity Technologies (CEO is on the Labster Board) has developed new tools for simulating new equipment that could be used for industry training.

Tom stated Gateway Community College LabForce is interested in supporting the GAZEL-ATIC Labster Consortium.

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Next Steps

Byron will send Sam information on Black Swan Learning Corp., and Sam will share this information with the Labster development team.

Steve will provide Labster contact information with the University of Arizona and the workforce development director at Pima Community College.

Kasha will send Steve his Labster contacts in Arizona: ASU, U of A, Grand Canyon University, Pima Community College, Cochise College, Coconino Community College, ASU Preparatory Academy.

Kasha will be visiting Arizona sometime in the May – August time frame, and will keep us informed about his visit(s). He hopes to initiate contact with school districts.

Steve noted the ATIC-GAZEL Arizona Broadband Stakeholder Network initial roundtable will be held on May 28, 2019 at Rio Salado College (conference room sponsored by Gateway Community College). A variety of education and industry participants are expected to attend the roundtable. Virtual online labs require broadband connectivity, and this is a particularly important issue for rural education institutions to resolve.

Steve will ensure there is effective follow up on this meeting to continue work to establish the Arizona Labster Consortium. He will distribute contact information for all those participating in today's teleconference.

Henry Goldberg and Oris Friesen will write up the summary of this meeting for distribution and placement on the GAZEL Arizona Labster Consortium Website.