GAZeL
Greater Arizona eLearning Association

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Arizona !nnovative Learning Collaborative
INNOVATION -- TECHNOLOGY -- COLLABORATION
GAZeL Greater Arizona eLearning Association

Innovative Learning will transform teaching and learning and enable a new generation of education and workforce development solutions in Arizona

Invest In The Innovative Learning Collaborative

Thanks for your interest in collaborating with our initiatives to **lead the development of Arizona's Innovative Learning Collaborative. I want to emphasize that this is not just another project. We want to add a new dimension to the dialog about education in ArizonaI want to emphasize that this is not just another project.**

Why the Collaborative is important. We are connecting Arizona Innovative Learning Advocates and Innovators committed to ***Creating A Culture of Education Innovation*** that will transform teaching and learning in Arizona. Through new ideas, new technologies and new collaborations Innovative Learning will enable a new generation of education and workforce development solutions in Arizona. We need a new vision of what schools of tomorrow need to look like, an issue often ignored in discussions about education.

The reality is that the world has changed, the world of work is going through dramatic transition, and how students learn and relate to the world has changed dramatically. In education, innovative learning ideas, new technologies and collaborations will transform teaching, learning, and schools as we knew them!

Innovative Learning, Technology, Collaboration

While important issues such as funding, politics, assessment, and legislation, and of course teacher pay, tend to dominate the education agenda in Arizona, the Collaborative will be promoting and supporting adoption of innovative ideas and new technologies from blended learning, digital curriculum, innovative learning spaces, to mobile learning, individualized self paced learning, competency and outcome based education, flipped classrooms, adaptive learning models, Innovation Labs and Makerspaces, 3D printing, coding, project based learning, robotics, game based learning and virtual lab experiences, and more.

Who will be involved in the Collaborative?

Advocates and Innovators who want to connect with fellow Arizonans committed to transforming education in Arizona through Innovative ideas, new technologies and collaboration. Unlike many organizations that focus on a particular sector, the Collaborative will engage innovators and administrators from libraries, K-12 education, charter schools, public and private colleges and universities, and community colleges, the business community, elected officials and government agencies, nonprofit community schools and organizations, innovative learning and related enterprises, education advocates and organizations, parents and homeschoolers, students, technology and innovative learning nonprofit organizations, and Innovative Learning enterprise executives and practitioners.

Here are some of the organizations already participating: University of Arizona, ASU, Pima Community College, Northern Arizona University, West-MEC, Arizona Department of Education, Arizona Telemedicine Program, Arizona Business and Education Coalition, the Game CoLab, Center for the Future of Arizona, Arizona State Library, for profit companies and more. I particularly want to mention our partnership with Pima Community College and the Chancellor's commitment to the Collaborative.

Collaborative Teams/Communities of Interest

The Collaborative is creating Teams/Communities of Interest to network, share ideas and resources, exchange best practices, pursue joint funding opportunities, develop mutual professional development strategies, pursue and share research opportunities and cooperate in other initiatives that will support adoption of innovative strategies and technologies. Here are just a couple of our most important initiatives. You will find more details later in this proposal;

- We are developing a partnership with Labster, the Danish Virtual Laboratory Simulation Education Group in Denmark to provide Virtual Laboratory Simulations to all Arizona schools, colleges, universities. Imagine if students could have unlimited access to multi-million dollar Harvard-quality laboratory facilities anywhere in the world, anytime. Now imagine how Arizona could transform Science and STEM Education through these Virtual Laboratories, especially in rural communities that do not have access to labs at colleges and universities
- In 2019 **we will be partnering with Pima Community College**, along with other business, education, and community organizations, to present a conference on ***Disruptive Innovative Learning in Arizona: Challenges, Opportunities, Technologies and Strategies***. The conference will focus on strategies for the State of Arizona, and our K-12 Schools, Universities, Community Colleges, Libraries and Community Organizations to develop a vision, strategic plans, and clearly defined learning outcomes for the adoption of technology and innovative learning within their organization

Some of our other initiatives include Games In Education and The Workplace, Collaborative Professional Development, Open Education Resources Network, Innovation Labs/Makerspaces Network, State and Local Innovative Learning Plans, and Partnership with Pima Community College STEM Innovation Challenge.

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Arizona Innovative Learning Collaborative

Join us in developing the **Arizona Innovative Learning Collaborative** that will provide opportunities for collaboration among learning advocates and innovators in K-12 and higher education, libraries, business, government, and nonprofit organizations.

Innovative Ideas and New Technologies

Participate in creating a ***Culture of Education Innovation*** that will promote and support adoption of innovative ideas and new technologies that will transform teaching and learning and enable a new generation of education and workforce development solutions in Arizona.

Imagine What We Can Do If We Collaborate!

Our Arizona Collaborative

Imagine what we can accomplish if innovators in **education, business, government, libraries and nonprofit organizations** collaborate to:

- Share ideas and resources
- Exchange best practices
- Pursue joint projects and funding opportunities
- Facilitate research opportunities
- So much more

How We Will Make A Difference

- State & district Innovative Learning plans
- Gamified Online Laboratories for Science And STEM Education
- Innovation Labs/Makerspaces Network
- Games For Education and the Workplace
- Innovative Learning Conference: *Disruptive Innovative Learning In Arizona*
- Open Education Resources Network
- Cooperative professional development
- Pima Community College STEM Innovation Challenge
- More

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Invest In The Innovative Learning Collaborative

Innovative Learning will transform teaching and learning and enable a new generation of education and workforce development solutions in Arizona

I am Dr. Tim Harrington, Chair

I am Steve Peters Coordinator

Thanks for your interest in collaborating with our initiatives to **lead the development of Arizona's Innovative Learning Collaborative. I want to emphasize that this is not just another project. We want to add a new dimension to the dialog about education in Arizona.**.

Yes, we know that the name is Greater Arizona eLearning Association, but on September 28, 2015 GAZeL, in cooperation with other business, education and community organizations, convened the *Forum on Innovative Learning 2015 and Beyond.*

The Forum launched the Innovative Learning Collaborative.

While GAZeL will remain committed to eLearning, eLearning is only the beginning! Innovative Learning is so much more.

Innovative ideas and new technologies such as digital curriculum, innovative learning spaces, Makerspaces and Open Education Resources can transform teaching and learning and enable a new generation of education and workforce development solutions in Arizona.

While there is amazing innovation in Arizona, we need to see greater collaboration among our education innovators in business, government, and education.

We know that issues such as funding, politics, testing, and legislation tend to dominate the education agenda in Arizona. While these are all important issues**, we will focus on education innovation, new technologies and collaboration**. **We are committed to outcomes, impact, benefits, and opportunities for Arizona.**

We look forward to your engagement and support for this important initiative

Innovative Learning – eLearning and So Much More

eLearning

eLearning includes technologies and services such as online learning, virtual classrooms, digital curriculum, simulations, game based learning, how-to' videos, augmented reality, virtual laboratory experiences, collaborative technologies and so much more

eLearning is just the beginning. Innovative Learning is so much more.

Innovative Learning

Innovative Learning also embraces new ideas and technologies such as Blended learning, Open Education Resources, Digital curriculum, Innovative learning spaces, Mobile learning, Individualized self paced learning, Competency/outcome based education, Flipped classrooms, Adaptive learning models, Data analytics and assessments, Innovation Labs/Makerspaces, 3D printing, Coding, Project based learning, Robotics, Game based learning, Virtual lab experiences, STEM Education, Manufacturing, Career & Technical Education, so much more

These new ideas and technologies will transform education, workplace training and the way we do business

About The Collaborative

Unlike many organizations that focus on a particular sector, the Collaborative will engage providers and consumers of innovative learning including innovators and administrators from libraries, K-12 education, charter schools, public and private colleges and universities, community colleges, and nonprofit community schools. You will also find interested people from the business community, elected officials, government agencies, nonprofit organizations, Innovative Learning and related enterprises, economic development organizations, education advocates, parents, homeschoolers, students, and technology and innovative learning nonprofit organizations; pretty much anyone who cares about the future of education in Arizona and wants to collaborate with education innovators and help Create a Culture of Education Innovation that will promote and support adoption of innovative ideas and new technologies in Arizona.

Here are just some of the organizations already participating in the Collaborative: University of Arizona, ASU, Pima Community College, DeVry University, University of Advancing Technology, Arizona Department of Education, Arizona Technology In Education Association, Arizona Telemedicine Program, Arizona Business and Education Coalition, the Game CoLab, Center for the Future of Arizona, Arizona State Library, for profit companies and more.

Together we will:

- **Create A Culture of Education Innovation** that promotes and supports adoption of innovative ideas and new technologies such as digital curriculum, innovative learning spaces, Makerspaces and Open Education Resources for all Arizona's K-12 schools, community colleges and universities that will transform teaching and learning and enable a new generation of education and workforce development solutions in Arizona
- **Collaboration:** Develop opportunities for collaboration among learning innovators in education, libraries, business, government, and community organizations to network, share ideas and resources, exchange best practices, pursue joint funding opportunities, develop mutual professional

development strategies, pursue and share research opportunities and cooperate in other initiatives that will support adoption of innovative strategies and technologies

- Support Innovative Learning practitioners in finding resources and implementing Innovative Learning projects to effectively address the needs of their organization and constituents
- Educate and advocate with public policy makers on Innovative Learning issues

What are some of the activities we will be doing?

- Developing and supporting Innovative Learning Communities of Interest/Teams
- Developing an online Community to communicate, collaborate, share information, post files, and coordinate the Teams/Communities Of Interest
- Facilitating AfterHours Networking experiences engaging consumers and providers of Innovative Learning technologies and services. These events will be hosted simultaneously in Tucson, Phoenix, and maybe other communities, and linked by video conference
- Presenting Innovative Learning webinars, conferences, meet-ups/forums featuring networking, technology demonstrations or presentations on topics of importance to the Arizona Innovative Learning community
- Engaging in legislative and policy advocacy to support adoption of Innovative Learning
- Collaborating with other organizations to develop policies and strategies to facilitate deployment of Broadband to rural Arizona communities
- Developing the GAZeL website as Arizona's Innovative Learning portal and event calendar
- Providing Newsletters/email updates announcing RFPs and other business opportunities, and highlighting events, industry updates, latest and greatest Innovative Learning technologies, and other topics of importance to the Innovative Learning community
- Promoting engagement, advocacy and strategic relationships with other business, technology and education organizations
- Encouraging and providing access to Innovative Learning research in Arizona
- Participating in trade shows/expos, educational events, and product demonstrations for business and professional development, and networking.

Local and Statewide Collaborative

While we are a statewide organization, we want to promote local as well as statewide collaboration. Therefore:

- We will develop Regional Collaboratives, with Local Champions and Leadership Teams, in Tucson, Phoenix and other regions around the state in sync with the statewide Collaborative. This will enable education innovators in business, government, education & nonprofit organizations in local communities to network and collaborate but be a part of the statewide Collaborative.
- Arizona's Learning Innovators will be mixin-it-up in a community near you! Networking will take place simultaneously, same day and time in Tucson, Phoenix, and later other sites in the state, all connected with live video conference links. The Agenda is simple, site host introductions, brief innovative learning presentations (Ignite Presentations) originating from one or more locations, and time on the agenda for announcements or requests for help. And, of course, refreshments, and networking, networking and more networking.

Here is How We Will Make A Difference

We want to focus on education innovation, new technologies and collaboration.

The Collaborative will develop the following Community of Interest Teams to collaborate, network, share ideas and resources, exchange best practices, pursue joint funding opportunities, develop mutual professional development strategies, pursue and share research opportunities and cooperate on other initiatives that will support adoption of innovative strategies and technologies:

Current Plans

- Labster Virtual Laboratory Simulations
- Games In Education and The Workplace
- Collaborative Professional Development
- Innovative Learning Conference: *Disruptive Innovative Learning In Arizona: Strategic Planning for Innovation, Technology and Collaboration for our Arizona K-12 Schools, Universities, Community Colleges, Libraries and Community Organizations*
- Open Education Resources Network
- Innovation Labs/Makerspaces Network
- State and Local Innovative Learning Plans
- Pima Community College STEM Innovation Challenge

2019 Proposed Plans

- Labster Virtual Laboratory Simulations Consortium
- Generation Yes Computer Science and IT Training programs
- Collaborative Professional Development
- Innovative Learning Conference: *Disruptive Innovative Learning: Strategic Planning for Innovation, Technology and Collaboration for our Arizona K-12 Schools, Universities, Community Colleges, Libraries and Community Organizations*
- Open Education Resources Network
- Innovation Labs/Makerspaces Network
- State and Local Innovative Learning Plans
- Arizona Broadband Stakeholder Network
- Federal Reserve Community Reinvestment Act Digital Equity/Digital Divide funding opportunities

Current Plans

Current Community of Interest Teams

Gamified Virtual Laboratory Simulations

Research has demonstrated that Gamified Virtual Laboratory Simulations can dramatically enhance student learning in science and STEM education when used to compliment, or even replace, traditional teaching methods. This team will take the lead in developing a partnership with Labster, the Danish Virtual Laboratory Simulation Education Group in Denmark to support adoption of Virtual Laboratory Simulations in Arizona schools, colleges, universities, government and business, **Labster provides opportunities for partnerships, grants and co-financing.** They already have partnerships with Universities such as Harvard and MIT. We know that ASU, U of A, Pima Community College, Peoria School District and others are interested in adopting this technology in Arizona..

Imagine how Arizona could transform Science and STEM Education through Gamified Virtual Laboratory Simulations, especially in rural communities that do not have access to labs at colleges and universities.

Games In Education and The Workplace

Games and games based learning have gone mainstream in business and education for everything from elearing to workplace training, marketing and even innovation. This Team will support development of the games industry in Arizona, and promote and support adoption of games and games based earning for education and the workplace that will enable schools, businesses and organizations to more effectively educate, engage, and interact with students, and with employees and customers

Collaborative Professional Development

Lack of professional development opportunities is one of the major barriers to the effective use adoption of technology and innovative learning strategies for teaching and learning. K-12 schools, community colleges and Universities are all struggling to train faculty, yet they as well as a number of organizations providing professional development, are working independently. This Team will take the lead in coordinating existing resources and developing a unified collaborative effort across universities, community colleges and K-12 and community organizations.

Innovative Learning Forum

While there are great innovations in education in Arizona that are providing awesome learning experiences for students, many K-12 schools, universities, libraries, community colleges and community organizations are implementing these innovations on a piecemeal basis, without clear objectives, or a strategic plan, policies and strategies. The Collaborative will present a Forum on *Creating A Culture Of Education Innovation: Strategic Planning for Innovation, Technology and Collaboration for our Arizona K-12 Schools, Universities, Community Colleges, Libraries and Community Organizations.* Forum attendees will learn about creating a Culture of Education and Strategic Planning for Innovative Learning, what it is, why it is important, and how to implement it for their organization or education institution. They will explore how to be prepared to deal with the current and future impact on issues such curriculum and instruction, assessment and state standards, budgeting, planning, faculty and professional development, facilities and technology infrastructure, policies and community engagement

Makerspaces Network

Makerspaces are collaborative and creative DIY work spaces found in libraries, science centers, K-12 schools, public and private universities, community colleges, and nonprofit organizations. They provide opportunities for hands-on designing, building, prototyping, hacking, crafting, and repair of almost anything, digital or physical, high or low-tech. Young people and adults are developing new skills particularly in science, technology, engineering and math (STEM) such as critical thinking, team work, engineering, computer-aided design, and prototyping, You will even see entrepreneurs using Makerspaces as incubators and accelerators for their business startups. This Team will develop a Makerspaces Network to promote the adoption of Makerspaces in Arizona, and to connect Makerspace students and innovators engaged in Makerspaces initiatives that will enable them to implement Makerspaces to effectively address the needs of their organizations, communities and constituents.

Open Education Resources (OER) Network

Across the country school districts, community colleges and universities are adopting Open Education Resources (OER) that are free open licensed resources, available at little or no cost, that can be used for teaching, learning, assessment, or research such as textbooks, course content, simulations, games, and applications. **OER permits their free use and re-purposing by others.** Open Education Resources can **improve student learning**, save money, provide more personalized learning opportunities, drive equity by providing all students access to high-quality learning materials, make course materials more affordable for university and community college students who otherwise cannot afford to buy expensive textbooks or other course materials, allow districts to update learning materials when new developments occur, empower teachers to adapt and customize learning materials without breaking copyright laws. OER enables education institutions to reallocate significant funds currently spent on inflexible, static learning materials to resources and activities that accelerate the transition to digital learning such as professional development, technology infrastructure upgrades to support digital learning, and funding for educators who curate and create OER educational materials This Team will develop an OER Network that will promote the adoption of OER in Arizona and connect OER innovators engaged in OER initiatives that will enable them to implement OER to effectively address the needs of their organizations and communities.

State and local Strategic Innovative Learning Plans

While issues such as funding, politics, testing, and legislation tend to dominate the education agenda, Arizona needs to develop a visionary plan to Create a Culture of Education Innovation and support for the development of Strategic Plans, policies and strategies to enable effective implementation of Innovative Learning solutions for all Arizona's' K-12 schools, Community Colleges and Universities. The plan may address issues such as funding, curriculum and instruction, assessment and state standards, budgets, district planning, faculty and professional development, facilities and technology infrastructure, policies, and community engagement and support. This Team will take the lead in advocating for Creating A Culture of Education innovation and the development of a State Innovative Learning Plan that promotes and supports adoption of innovative ideas and new that will transform teaching and learning and enable a new generation of education and workforce development solutions in Arizona

Pima Community College STEM Innovation Challenge

STEAM, Science, Technology, Engineering, Arts, and Math education, is an important strategy to prepare students for high tech and high paying jobs. The Collaborative will support implementation of the Pima Community College STEM Innovation Challenge, an innovative training series to create and support teams of students, instructors, and professional industry mentors to develop relevant and sustainable strategies to help students connect with STEAM education and employment opportunities. Responding to the question *What does a STEM Town that supports your future look like,* develop plans and prototype relevant, real-world solutions that build education and career pathways in STEM that support innovation, entrepreneurship and collaboration. The training series will culminate in the PCC STEM Innovation Showcase event in the fall of 2016, including judging Challenge Competition pitches, networking, hands-on STEM learning, and micro-mentorship opportunities.

Plans 2019

Community of Interest Teams 2019

- Virtual Laboratory Simulations
- Generation Yes Computer Science and IT Training programs
- Collaborative Professional Development
- Innovative Learning Conference: *Creating A Culture Of Education Innovation: Strategic Planning for Innovation, Technology and Collaboration for our Arizona K-12 Schools, Universities, Community Colleges, Libraries and Community Organizations*
- Open Education Resources Network
- Innovation Labs/Makerspaces Network
- State and Local Innovative Learning Plans
- Arizona Broadband Stakeholder Network
- Federal Reserve Community Reinvestment Act Digital Equity/Digital Divide funding opportunities

Collaborative Professional Development

Lack of professional development opportunities is one of the major barriers to the effective use adoption of technology and innovative learning strategies for teaching and learning. K-12 schools, community colleges and Universities are all struggling to train faculty, yet they as well as a number of organizations providing professional development, are working independently. This Team will take the lead in coordinating existing resources and developing a unified collaborative effort across universities, community colleges and K-12 and community organizations.

Virtual Laboratory Simulations

GAZeL's Innovative Learning Collaborative, in cooperation with the Arizona Telecommunications and Information Council will explore a partnership with Labster, the Virtual Laboratory Simulation Education Group based in Denmark. GAZeL will take the lead in forming a Team/Community Of Interest to explore the feasibility of developing a statewide consortium and funding mechanism with Labster and K-12 schools, universities and community colleges to support adoption of Virtual Laboratory Simulations in Arizona schools, colleges, universities, and STEM non profit organizations in Arizona for free or low cost. Labster has partnered with leading universities such as Harvard and MIT, **and they currently have a project with the Global Institute of Sustainability at ASU**.

Research has demonstrated that Gamified Virtual Laboratory Simulations can dramatically enhance student learning in science and STEM education when used to compliment, or even replace, traditional teaching methods. **Labster provides opportunities for partnerships, grants and co-financing.** They already have partnerships with Universities such as Harvard and MIT. We know that ASU, U of A, Pima Community College, Peoria School District and others are interested in adopting this technology in Arizona**..**

Imagine how Arizona could transform Science and STEM Education through Gamified Virtual Laboratory Simulations, especially in rural communities that do not have access to labs at colleges and universities.

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Innovation Labs/Makerspaces Network

This Team will develop a Makerspaces Network to promote the adoption of Makerspaces in Arizona, and to connect Makerspace students and innovators engaged in Makerspaces initiatives that will enable them to implement Makerspaces to effectively address the needs of their organizations, communities and constituents.

Makerspaces are collaborative and creative DIY work spaces found in libraries, science centers, K-12 schools, public and private universities, community colleges, and nonprofit organizations. They provide opportunities for hands-on designing, building, prototyping, hacking, crafting, and repair of almost anything, digital or physical, high or low-tech. Young people and adults are developing new skills particularly in science, technology, engineering and math (STEM) such as critical thinking, team work, engineering, computer-aided design, and prototyping, You will even see entrepreneurs using Makerspaces as incubators and accelerators for their business startups.

Open Education Resources (OER) Network

This Team will develop an OER Network that will promote the adoption of OER in Arizona and connect OER innovators engaged in OER initiatives that will enable them to implement OER to effectively address the needs of their organizations and communities.

Across the country school districts, community colleges and universities are adopting Open Education Resources (OER) that are free open licensed resources, available at little or no cost, that can be used for teaching, learning, assessment, or research such as textbooks, course content, simulations, games, and applications. **OER permits their free use and re-purposing by others.** Open Education Resources can **improve student learning**, save money, provide more personalized learning opportunities, drive equity by providing all students access to high-quality learning materials, make course materials more affordable for university and community college students who otherwise cannot afford to buy expensive textbooks or other course materials, allow districts to update learning materials when new developments occur, empower teachers to adapt and customize learning materials without breaking copyright laws. OER enables education institutions to reallocate significant funds currently spent on inflexible, static learning materials to resources and activities that accelerate the transition to digital learning such as professional development, technology infrastructure upgrades to support digital learning, and funding for educators who curate and create OER educational materials

State & Local Strategic Innovative Learning Plans

While issues such as funding, politics, testing, and legislation tend to dominate the education agenda, Arizona needs to develop a visionary plan to Create a Culture of Education Innovation and support for the development of Strategic Plans, policies and strategies to enable effective implementation of Innovative Learning solutions for all Arizona's' K-12 schools, Community Colleges and Universities. The plan may address issues such as funding, curriculum and instruction, assessment and state standards, budgets, district planning, faculty and professional development, facilities and technology infrastructure, policies, and community engagement and support. This Team will take the lead in advocating for Creating A Culture of Education innovation and the development of a State Innovative Learning Plan that promotes and supports adoption of innovative ideas and new that will transform teaching and learning and enable a new generation of education and workforce development solutions in Arizona

Arizona Broadband Stakeholder Network

GAZeL, in cooperation with the Arizona Telecommunications and Information Council will create a Team/Community of Interest to convene an Arizona Broadband Stakeholder Network to facilitate collaboration, coordination, information sharing and communication among key public, private and nonprofit stakeholders committed to promoting the expansion of broadband deployment in Arizona. Participation will be open to all interested parties. The Network may lead to collaborative projects, development of joint grant applications, sharing of funding and other resources, aggregation of demand at the state and local level, policy discussions, etc.

Stakeholder groups may include, **for example,** Councils of Government throughout Arizona, the Arizona Rural Development Council, League of Cities and Towns, Arizona Commerce Authority and Regional Economic Development Organizations, Local and State Libraries, State and local government entities, Community Broadband Planning Councils, Telemedicine, Public safety, Education (K-12, universities and community colleges) Nonprofit organizations, Technology and telecom providers, More.

The Arizona Broadband Stakeholder Network will coordinate with, complement and support other broadband, education, economic development and telemedicine initiatives such as: Arizona Statewide Broadband Strategic Plan, Arizona Broadband for Education Initiative, Greater Arizona eLearning Association's Arizona Innovation Learning Collaborative, Arizona Telemedicine Program, Sun Corridor Network, Arizona Department of Administration's AZ First Net, Arizona State Library eRate, and more.

Generation Yes Computer Science and IT Training

GAZeL will create a Team/Community of Interest to promote and support adoption of **Generation Yes Computer Science and IT Training programs throughout Arizona.** Their mission is to overcome K-12 technology integration challenges by preparing students to join educators in the school transformation process. Generation YES is a nonprofit 501(c)(3) that prepares teams of Student Technology Leaders (STLs) in grades 4-12 to provide professional development and IT support to educators and IT staff. These students participate in real-world experiences that develop the lifelong learning and people skills necessary to succeed in colleges and careers. STLs are started on a path to AP Computer Science, coding classes, and other high-level technology courses.

Generation Yes is developing programs which systemically address the digital divide. They recognize that schools are the foundation for communities and believe that focusing on education programs for underserved youth is the best approach towards solving the diverse and complex issues facing communities on the wrong side of the digital divide.

Generation YES programs focus on:

- Training youth to provide tech support and mentoring in their schools, homes, and communities.
- Developing leadership opportunities for underserved youth to build confidence and communication skills.
- Enhancing digital literacy including cyber safety and digital citizenship
- Building workforce readiness skills for "middle-skill" jobs- jobs that don't require a college degree but pay above the national living wage.

GenYes:

- Consults with schools to create a custom GenYES implementation model
- Provides curriculum and web-based tools
- Establishes a strategy to get a good return on investment for existing and new technology initiatives in a school

Digital Equity/Digital Divide funding

Federal Reserve Community Reinvestment Act

GAZeL will create a Team/Community of Interest to develop strategies to enable Arizona education institutions and nonprofit organizations to access Digital Equity/Digital Divide funding opportunities through the Federal Reserve Community Reinvestment Act (CRA) and also strategies for Arizona to help banks understand the unique role they can play through the CRA.
CRA funding may support services such as broadband and broadband infrastructure, hardware, tech support, librarian assistance, numeracy (or "math literacy'), financial literacy education, "digital age skills" development (such as coding), and educational content. Many banks have become very interested in addressing the digital divide because it is an increasingly important barrier both to local economic opportunity and vitality, as well as to access to banking services which increasingly are being offered online.

Community Reinvestment Act Digital Equity Funding Opportunities

The federal 1977 Community Reinvestment Act (CRA) requires all banking institutions that receive Federal Deposit Insurance Corporation Insurance (FDIC) to provide equitable access for those living in "low and moderate income" (LMI) communities to banking services as well as investments for community development (i.e., enhancing economic opportunity) in LMI communities. Banks must meet their CRA obligations through a mix of volunteerism, grantmaking and investments.

As a result of advocacy and pilot projects from the National Collaborative for Digital Equity, in 2016 the Federal Reserve issued guidance encouraging the nation's banks to invest CRA resources in digital equity. The challenge now is to educate banks about how to work with local education organizations to provide digital equity funding , and how educational organizations can apply for support.

NCDE emphasizes that investments that enhance equitable access only to broadband, computers and tech support are insufficient to lead to meaningful impacts for educational and economic opportunity. There is substantial research showing that simplistic investments for technology in schools that don't address training, technical support, use of engaging instructional strategies, and assistance with literacy and cybersafety skills, are likely to yield limited impact. Thus, banks, foundations and other digital equity investors should make digital equity investments that are "systemic" – supporting an integrated, evidence-based approach to equipping low-income learners with the tools they need to prepare and qualify for living wage careers in STEM and other fields.

NCDE has launched a "One Percent for Digital Equity" campaign, advocating that banks and their community partners nationwide strive to reach a target of one percent of CRA funding to close the digital divide, as this would unleash fully $1 billion annually.

Details about The Teams/Communities Of Interest

Gamified Virtual Laboratory Simulations

The Collaborative will create a Team/Community of Interest that will facilitate collaboration and coordination to promote and support the use and adoption of Gamified Virtual Laboratory Simulations to enhance Science and STEM Education in Schools, Colleges, Universities, Government and Business.

The Collaborative is working on a partnership with Labster, the Danish Virtual Laboratory Simulation Education Group in Denmark. An Independent university research study demonstrated that Virtual Laboratory Simulations can dramatically enhance student learning when used to compliment or even replace traditional teaching methods. The study showed a 76 % increase in learning outcomes by using Labster's gamified laboratory simulation, compared to traditional teaching, and a 101% increase when used in combination, suggesting an untapped potential for increasing the skills of science students and graduates. Imagine how Arizona could transform Science and STEM Education through Gamified Virtual Laboratory Simulations, especially in rural communities that do not have access to labs at colleges and universities.

Labster provides partnerships, grant co-financing and Virtual Laboratories for High Schools, Colleges and Universities. Labster has developed partnerships with universities, such as Harvard, MIT, University of New England and more. He is exploring including Arizona in a National Science Foundation grant. We know that ASU, U of A, Pima Community College, Tucson Unified School District Peoria School District and others are interested in adopting this technology in Arizona. How can we facilitate collaboration among these, and other organizations. So let's collaborate on this and make it happen for Arizona

Games In Education and The Workplace

The Collaborative will create a Team/Community of Interest that will promote and support the development of the games industry in Arizona and the use and adoption of Game Based Learning for Education and The Workplace that will enable schools, businesses and organizations to more effectively educate, engage, and interact with students, and with employees and customers

Games are going mainstream in education, eLearning, training, STEM Education, marketing, innovation, and lots more, in industries from retail and military to technology. The Entertainment Software Association estimates that 70 percent of major employers use interactive software and games for training. Research firm Gartner projects that by 2014, 70 percent of 2,000 global organizations will use gamified applications. The gamification market is forecast to hit $5 billion annually by 2018, according to Markets and Markets. According to Massive Incorporated, a creator of dynamic video game advertisements, the market for video game advertising will reach $1 billion by 2014. Millions in government and foundation funding is being invested to research the impact of games in education such as DARPA, the US Defense Advanced Research Projects Agency that invested $12 million in games research for STEM and military training. Then there is ASU Center for Games And Impact, and the Games Learning and Assessment Lab.

We will create a network to support adoption of games in Arizona business, government and education and support the development of the games industry in Arizona. Then there are a number of educational institutions in Arizona training game developers such as DeVry, ASU, U of A, and University Of Advancing Technology. ITT and more, but there is little coordination among these institutions and no online directory of educational opportunities in Arizona.

Collaborative Professional Development

The Collaborative will create a Team/Community of Interest that will facilitate development of collaborative professional development opportunities for innovative learning practitioners and innovators in education, business, government, and nonprofit organizations. K-12 schools, community colleges and Universities are all struggling to train faculty in the effective use and adoption of technology for teaching and learning. Many of the schools, organizations and institutions are working independently on professional development. For now there is no unified collaborative effort across universities, community colleges and K-12. There are a number of organizations providing professional development but there is no unified plan and little coordination among these entities.

Creating a Culture of Education Innovation

The Collaborative will create a Team/Community of Interest that will promote and support the development of A Culture Of Education Innovation that promotes and supports adoption of innovative ideas and new technologies that can transform teaching and learning in Arizona.

Issues such as funding, politics, testing, and legislation tend to dominate the education agenda in Arizona. While these are all important issues, innovative ideas and new technologies are transforming education, workplace training, and the way we do business. Arizona needs to create a Culture Of Education Innovation that will promote and support adoption of these innovative ideas and technologies to create effective education and workforce development solutions for our state and our communities. And, while there is amazing innovation taking place in Arizona we need to see greater collaboration among our education innovators in business, government, and education. It is time to collaborate, share, and create a *Culture of Education Innovation* in Arizona. Let's talk innovation, technology and collaboration.

State and Institutional Innovative Learning Strategic Plans

The Collaborative will create a Team/Community of Interest that will promote and support the development of State and Institutional Strategic Plans, policies and strategies to support effective implementation of Innovative Learning solutions for all Arizona's' K-12 schools, Community Colleges and Universities.

Need For Strategic Plans, Policies and Strategies: While there are great innovations that are providing awesome learning experiences for students, many K-12 Schools, Universities, Libraries, Community Colleges and Community Organizations are implementing these innovations on a piecemeal basis. They need to adopt strategic institutional plans, policies and strategies that will create a culture of education innovation within their organization, with clear objectives, that will promote and support adoption of innovative ideas and new technologies on a systemic basis. They need to be prepared to deal with the current and future impact on issues such as: Curriculum and instruction, Assessment and State Standards, Budgeting, Strategic planning, Faculty and professional development, Facilities and technology infrastructure, Policies, Community Engagement and Support

Innovation Labs/Makerspaces

The Collaborative will create a Team/Community of Interest that will develop an Arizona Makerspaces Network. The Network will connect businesses, librarians, students and educators in Arizona *Making* creative spaces where people create, invent, and learn. The Network will promote the adoption of Makerspaces in Arizona, and connect Makerspace innovators in libraries, science centers, K-12 schools, public and private universities, community colleges, and nonprofit organizations engaged in Makerspaces initiatives that will enable them to implement Makerspaces to effectively address the needs of their organizations, communities and constituents.

With libraries, schools, and community organizations that are developing Makerspaces initiatives struggling with implementation strategies and lack of resources, the network will enable them to network, collaborate, share ideas and resources, exchange best practices such as how to evaluate and define effective learning outcomes for Makerspaces or how to create, and effectively use Makerspaces Teams in the planning and implementation of Makerspace initiatives, pursue joint funding opportunities, develop mutual professional development strategies, pursue and share research opportunities and cooperate in other initiatives that will support adoption of Makerspaces.

So, What Is A Makerspace? Makerspaces, also referred to as hackerspaces, Tech Shops, or Fab Labs (fabrication laboratories), are generally fun, unstructured, collaborative, and creative DIY work spaces. They provide opportunities for hands-on designing, building, prototyping, hacking, crafting, and repair of almost anything, digital or physical, high or low-tech. Makers can tinker with various tools and materials to turn their ideas into reality and explore their own interests while sharing skills, supplies, resources and ideas. They learn new skills and often work together on projects.

These spaces are open to young people and/or adults. Makerspaces are emerging in schools, community colleges, universities, or other public/private facilities such as libraries, nonprofit organizations, or science centers. You might find Makers working on everything from electronics, computers, robotics, 3D printers, computer-aided design, coding, digital arts and graphic design, to woodworking, sewing, and even cooking and gardening. You will even see entrepreneurs using Makerspaces as incubators and accelerators for their business startups.

Makerspaces may have high tech tools and equipment such as computers (including tiny and affordable Raspberry Pi computers used to learn programming), CAD software, 3D printers, laser cutters, circuit boards, Arduino microcontroller-based kits (pocket-sized computer and open-source electronics prototyping hardware and software platform used to program and control interactive objects such as robots), manufacturing equipment such as CNC (Computer Numeric Control) machines, or low tech supplies and equipment such as soldering irons, sewing machines, wood, textiles, cardboard, Legos and art supplies.

Why Makerspaces – Benefits and Opportunities. Young people and adults participating in Makerspaces are developing new skills, particularly in science, technology, engineering and math (STEM). These hands on learning experiences develop critical thinking skills, boost self-confidence and teach team work skills when working on collaborative projects such as robotics teams. They are learning about design, prototyping, exploration, invention, discovery, and making mistakes in pursuit of new ideas. As schools and businesses continue to promote Innovative Learning strategies and twenty-first century skills, there is no doubt that Makerspaces will play a crucial role in helping students and learners of all ages be better prepared for the future.

Open Education Resources

The Collaborative will create a Team/Community of Interest that will develop and support an Open Education Resources (OER) Network. The Network will promote the adoption of OER in Arizona educational institutions not already aware of or engaged in OER, and connect OER innovators in libraries, K-12 schools, public and private universities, community colleges, and nonprofit organizations engaged in OER initiatives that will enable them to implement OER to effectively address the needs of their organizations and communities.

With libraries, schools, and community organizations that are developing OER initiatives struggling with implementation strategies and lack of resources, the network will enable them to network, for collaborate, share ideas and resources, exchange best practices such as how to evaluate and define effective learning outcomes for OER or how to create, and effectively use OER Teams in the planning and implementation of OER Initiatives, pursue joint funding opportunities, develop mutual professional development strategies, pursue and share research opportunities and cooperate in other initiatives that will support adoption of Open Education Resources.

The Arizona OER Network will work in collaboration with the United States Office Of Instructional Technology GoOpen Initiative, and the Arizona Department Of Education (ADOE). Arizona has been designated one of 25 states participating in the US GoOpen initiative.

So, What Is OER? Open educational resources (OER) are resources available at little or no cost that can be used for teaching, learning, assessment, or research. OER materials are found in the public domain or have been released under an open license that **permits their free use and re-purposing by others.**

While OER generally refers to electronic resources released under a Creative Commons or similar license, it may include virtually any material that can be used for educational purposes that supports open or nearly open use of the content. OER may include textbooks, course readings, and other learning content; simulations, games, and other learning applications; syllabi, quizzes, and assessment tools. OER is being created in colleges and universities, libraries, government agencies, commercial organizations such as publishers, or faculty, or other individuals who develop educational resources they are willing to share.

Why OER – Benefits and Opportunities? Across the country school districts, community colleges and universities are adopting Open Education (free open licensed) Resources (OER) to **improve student learning**, save money, provide more personalized learning opportunities, drive equity by providing all students access to high-quality learning materials, make course materials more affordable for university and community college students who otherwise cannot afford to buy expensive textbooks or other course materials, allow districts to update learning materials when new developments occur, empower teachers to adapt and customize learning materials without breaking copyright laws.

OER enables districts to reallocate significant funds currently spent on inflexible, static learning materials to resources and activities that accelerate the transition to digital learning such as professional development, technology infrastructure upgrades to support digital learning, and funding for educators who curate and create OER educational materials.

Innovative Learning Conference

The Collaborative will create a Team/Community of Interest, in cooperation with Pima Community College, and other business, government, education and community organizations, to present a Forum on ***Creating A Culture Of Education Innovation: Strategic Planning for Innovation, Technology and Collaboration for our Arizona K-12 Schools, Universities, Community Colleges, Libraries and Community Organizations.***

Why The Forum? The world has changed and the world of work is going through dramatic transition. How students learn and relate to the world has changed dramatically! While issues such as funding, politics, testing, and legislation tend to dominate the education agenda in Arizona, innovative education ideas and new technologies are transforming teaching and learning, workplace training, and the way we do business!

Need For Strategic Institutional Plans, Policies and Strategies: While there are great innovations that are providing awesome learning experiences for students, many K-12 Schools, Universities, Libraries, Community Colleges and Community Organizations are implementing these innovations on a piecemeal basis. They need to adopt strategic institutional plans, policies and strategies that will create a culture of education innovation within their organization, with clear objectives, that will promote and support adoption of innovative ideas and new technologies on a systemic basis. They need to be prepared to deal with the current and future impact on: Curriculum and instruction, Assessment and State Standards, Budgeting, Strategic planning, Faculty and professional development, Facilities and technology infrastructure, Policies, Community Engagement and Support

Forum Objectives: 1) Provide strategies for the State of Arizona, and our K-12 School Districts, Community Colleges, Universities, Libraries and Community Organizations to **adopt strategic institutional plans, policies and strategies** that will create a culture of education innovation within their institution that promote and support adoption of innovative ideas and new technologies that can transform teaching and learning and enable a new generation of education and workforce development solutions in Arizona.

2) Develop opportunities for collaboration among learning innovators in education, business, government, libraries and nonprofit organizations to cooperate on initiatives that will support adoption of innovative strategies and technologies

Business and Industry Needs

(Maybe if needs not addressed by other groups): Create a Community of Interest that will address the needs of companies, in addition to education, to adopt and/or provide innovative learning technologies and services

Spontaneous Communities of Interest

Allowing Collaborative participants to develop new Projects/Communities of Interest

spontaneously if they are willing to coordinate/facilitate/provide leadershi

Thanks For Your Support For GAZeL and the Collaborative

Thanks for considering this request. We will greatly appreciate your support, and we look forward to a long and productive relationship.

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