

Innovative Universities Global Webinar

Event starts at 5PM CET
Please stand by!



January 11, 2024

Welcome to Innovative Universities Global Webinar

**Arizona State University:
Continuous Innovations in
Higher Education**

January 11, 2024

Moderator



Dara Melnyk

Strategic transformation consultant,
speaker, PhD candidate at
Maastricht University, Netherlands

Construction of the webinar



60 min: 15-min presentation + discussion



Live: every second Thu @5PM CET



Recordings: available on YouTube + impressions sharing via [#InnovativeUniversities](#)



Moderators

for the 2023-2024 season:
Isak Frumin and Dara Melnyk



The Steering Committee:

Phil Altbach, Jules Coleman,
Daniel Kontowski, Attila Paustis,
Jamil Salmi, Po Yang

Invited expert

**Arizona State
University:
Continuous
Innovations in
Higher Education**



Dale Johnson

Director, Digital Innovation
University Design Institute
Arizona State University

Arizona State University:

Continuous Innovations in Higher Education

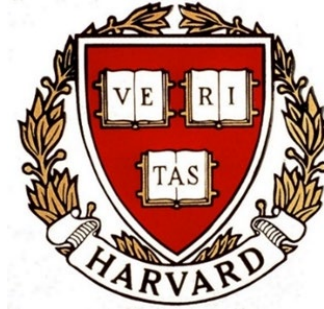
January 2024

**ASU[®] University Design
Institute**
Arizona State University

Dale Johnson
Director, Digital Innovation
University Design Institute

Dale P. Johnson

**Director, Digital Innovation
University Design Institute
Arizona State University**



**UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONA**



ASU Arizona State University

#1 BEST COLLEGES USNews

in the U.S. for Innovation

- U.S. News & World Report

2024

#1 BEST COLLEGES USNews

in the U.S. for Innovation

- U.S. News & World Report

2016

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in the U.S. for Innovation

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2017

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2018

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2019

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2020

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2021

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2022

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2023



Las Vegas

Los Angeles



★Phoenix

Mexico







Public University

170,000 students

85,000 campus

85,000 online

Phoenix ~ 5.0 million

**ASU builds capacity to innovate
through our central design unit**

University Design Institute

40+

Design engagements

New schools & initiatives;
redesigned colleges, schools and
non-academic units

450+

Leaders trained

Across university-wide
administrators, faculty and staff





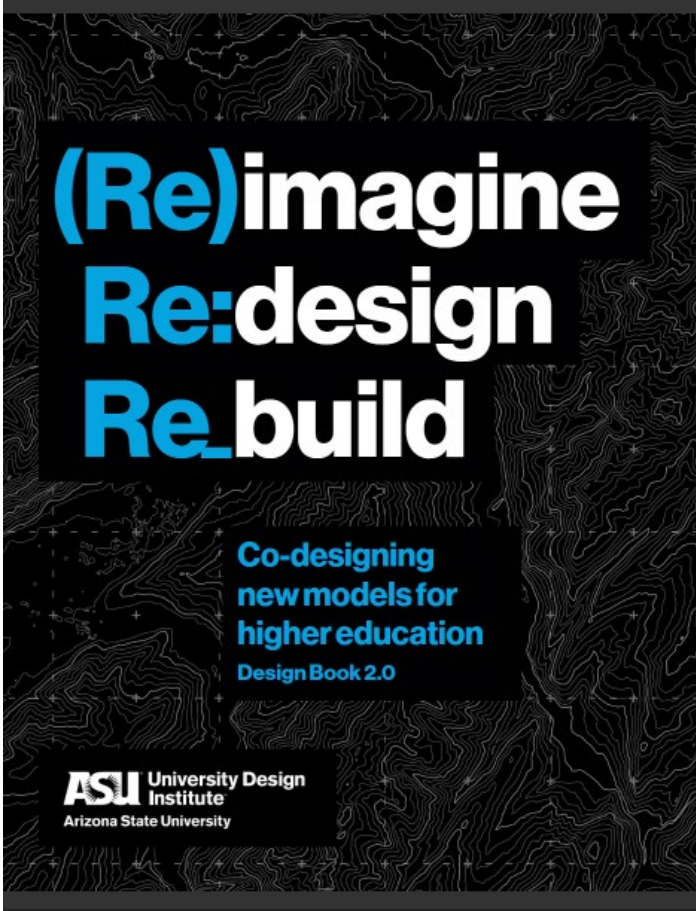
UDI works globally to promote innovation



122
institutions

23
countries

University Design Institute – Design Book 2.0



(Re)imagine
Re:design
Re_build

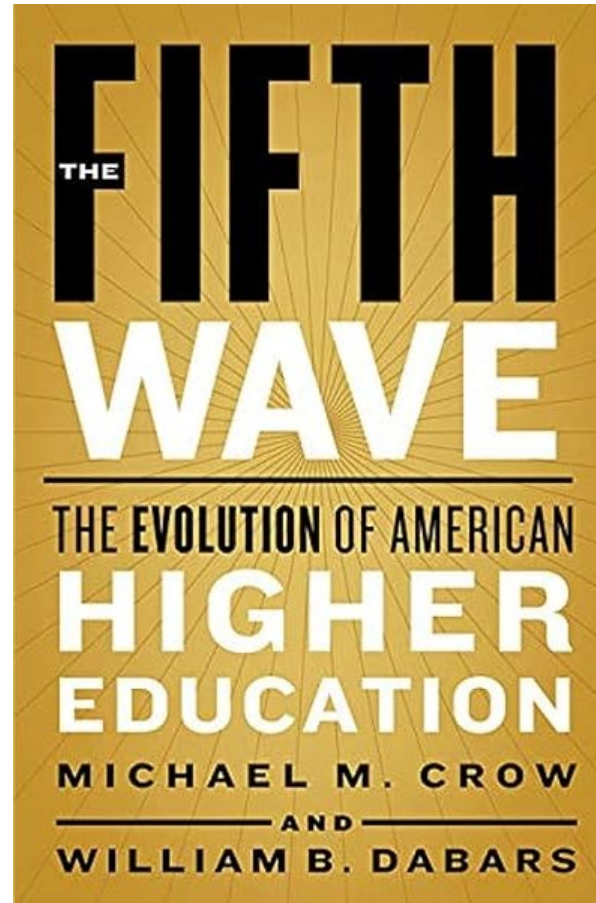
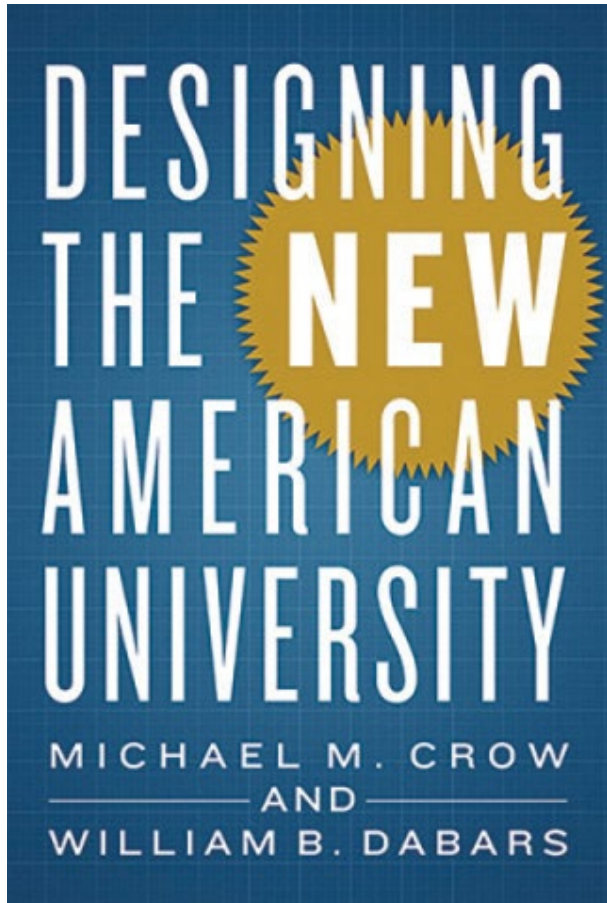
Co-designing
new models for
higher education

DesignBook 2.0

ASU University Design
Institute
Arizona State University

<https://udi.asu.edu/design-book-20>

ASU President – Dr. Michael Crow, 2002 - present



Webinar BIG questions

What drove ASU to become an innovative university?

- Failure to meet the graduation needs of our students and community

What makes it possible for ASU to invent, implement, and spread innovations?

- Clarity of mission, objectives and leadership

Did the leadership of the university face resistance to changes?

- Yes, it took 10 years to change the culture

Were there any failures of the innovations at ASU?

- Yes, we changed strategies and tactics frequently to overcome failure

The ASU Transformation Story



Reimagine

ASU Mission and Objectives

ASU Mission Statement 2014

ASU is a comprehensive public research university,
measured not by whom it excludes,
but by whom it includes and how they succeed;
advancing research and discovery of public value;
and assuming fundamental responsibility for the
economic, social, cultural and overall health
of the communities it serves.



**“...measured not by whom it excludes,
but by whom it includes and how they**



Old Model:

➤ **selective, elitist, inequitable**

New Model:

➤ **accessible, inclusive, equitable**

ASU Objectives

Nine **design aspirations** guide ASU's ongoing evolution as a **New American University**. ASU integrates these institutional objectives in innovative ways to demonstrate excellence, access and impact.

Leverage Our Place

ASU embraces its cultural, socioeconomic and physical setting.

Transform Society

ASU catalyzes social change by being connected to social needs.

Value Entrepreneurship

ASU uses its knowledge and encourages innovation.

Conduct Use-Inspired Research

ASU research has purpose and impact.

Enable Student Success

ASU is committed to the success of each unique student.

Fuse Intellectual Disciplines

ASU creates knowledge by transcending academic disciplines.

Be Socially Embedded

ASU connects with communities through mutually beneficial partnerships.

Engage Globally

ASU engages with people and issues locally, nationally and internationally.

Practice Principled Innovation

ASU places character and values at the center of decisions and actions.

Enable

Student

Success

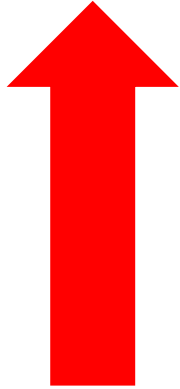
ASU Objectives

Demonstrate **leadership** in enabling academic excellence and accessibility at scale

- Maintain the fundamental principle of accessibility to all students qualified to study at a research university.
- Maintain university accessibility to match Arizona's socioeconomic diversity, with undifferentiated outcomes for success.
- Ensure that **more than 90%** of students continue studies beyond their first year.
- Enhance the university graduation rate to **greater than 85%** and more than **40,000** graduates.
- Continuously enhance quality while maintaining affordability.
- Overcome geographic and financial barriers to education by enrolling **150,000** online degree-seeking students.
- Continuously increase measured student development and learning outcomes.
- Engage learners of all socioeconomic, geographic and demographic backgrounds.

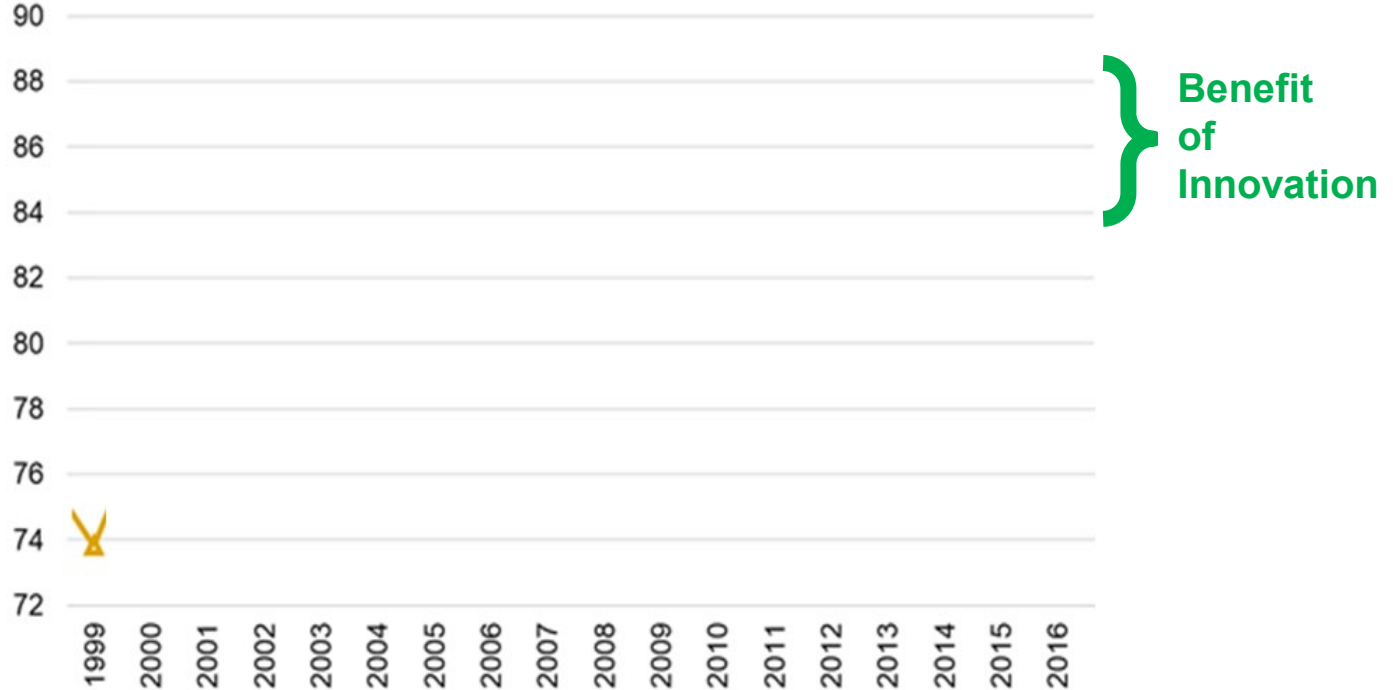
Ensure that more than 90% of students continue studies beyond their first

90% Objective



74% Starting Point

First Year Retention





Innovate

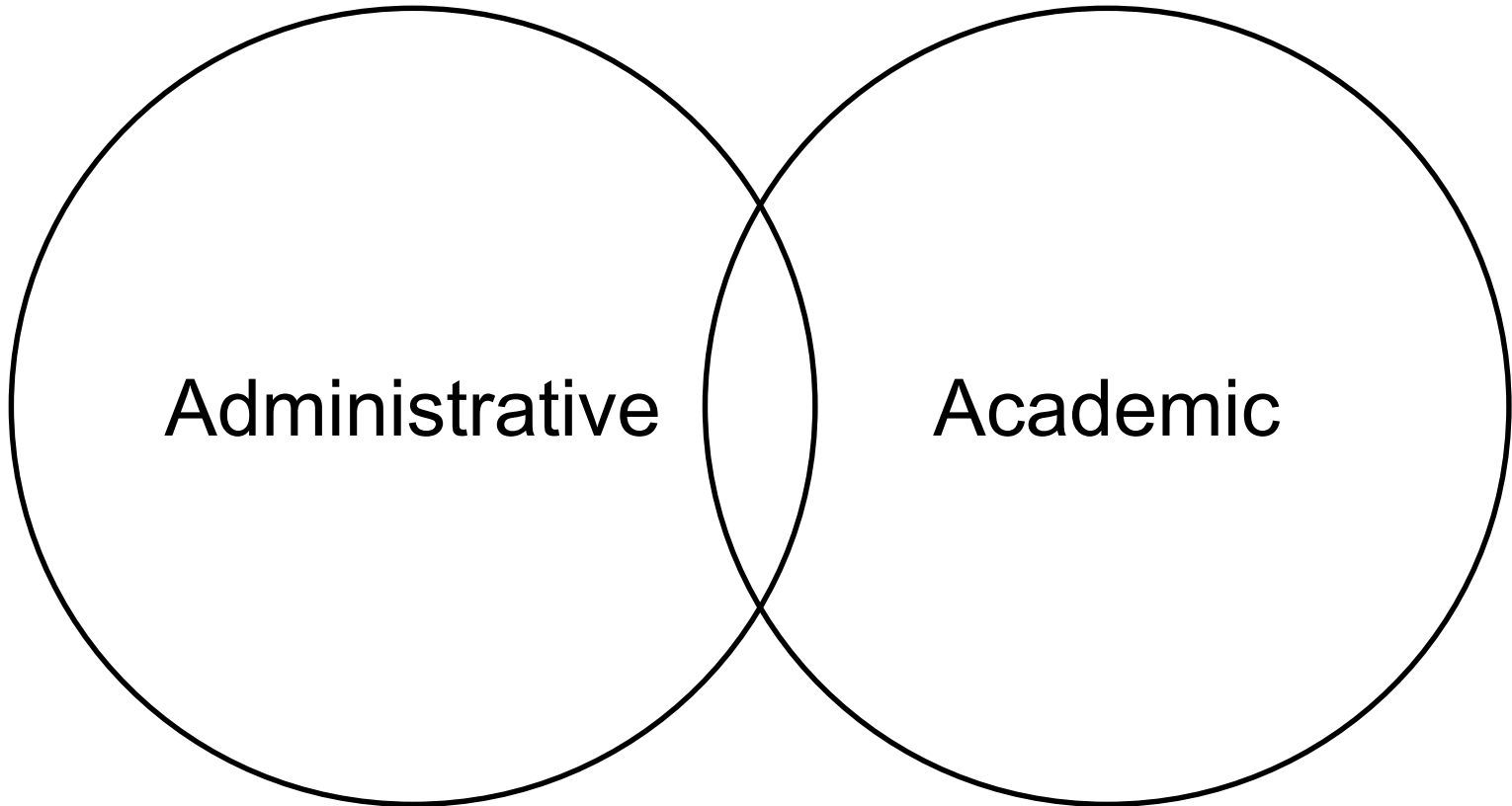
Redesign

for access, excellence and impact

2-sides to our



2-sides to our Innovation Efforts





Administrative Innovation

Redesign Administrative Systems and Processes

**eAdvisor
System**

**Enable
Student
Success**

**Implemented
1st year
Residential
Requirement**

**Created
Full-time
Academic
Advisor Role**

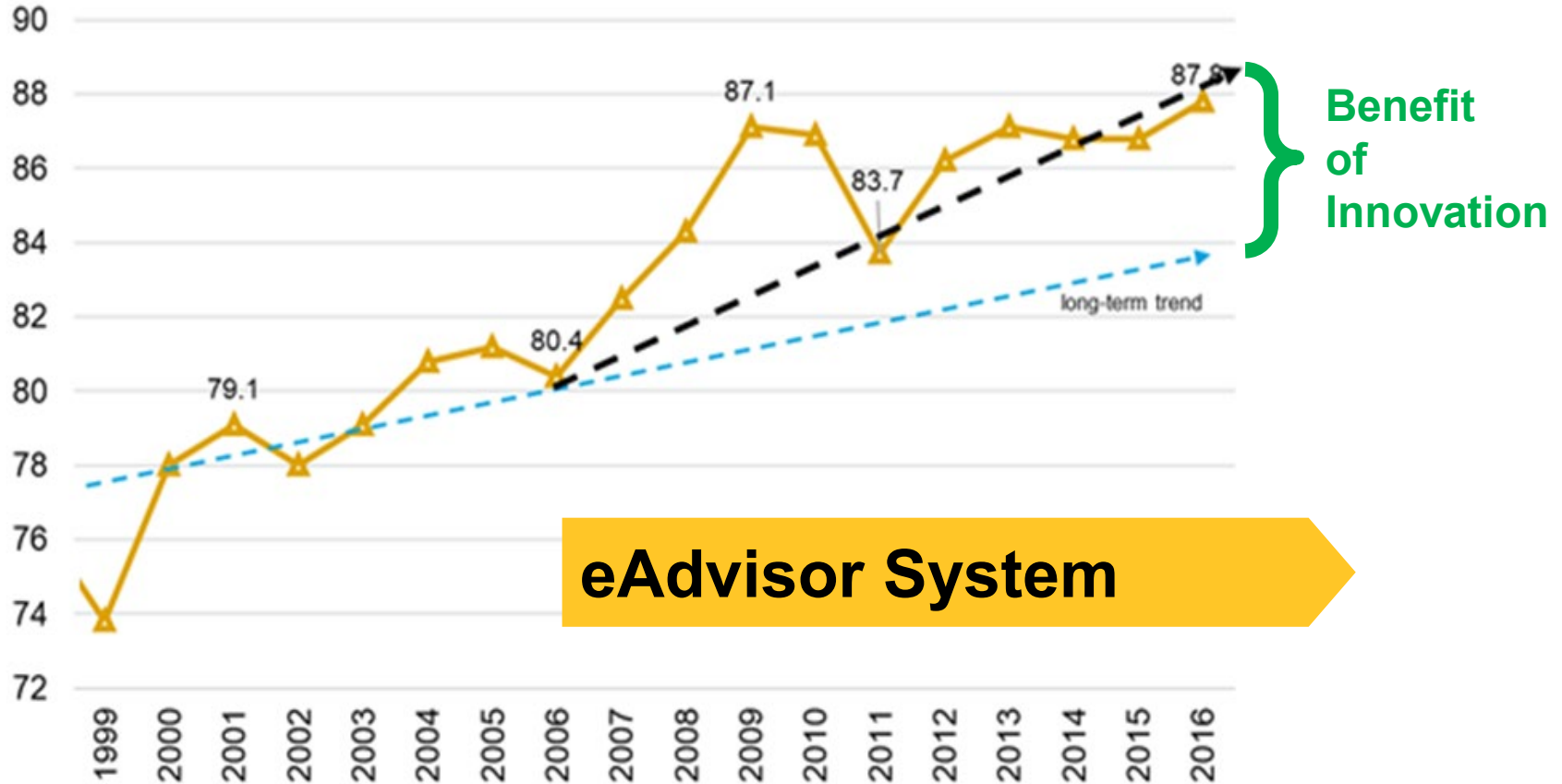


**Improved
New Student
Orientation
Activities**

**Automated
Administrative
Processes**

**Increased
Financial
Aid
Access**

Redesign Administrative Systems and Processes



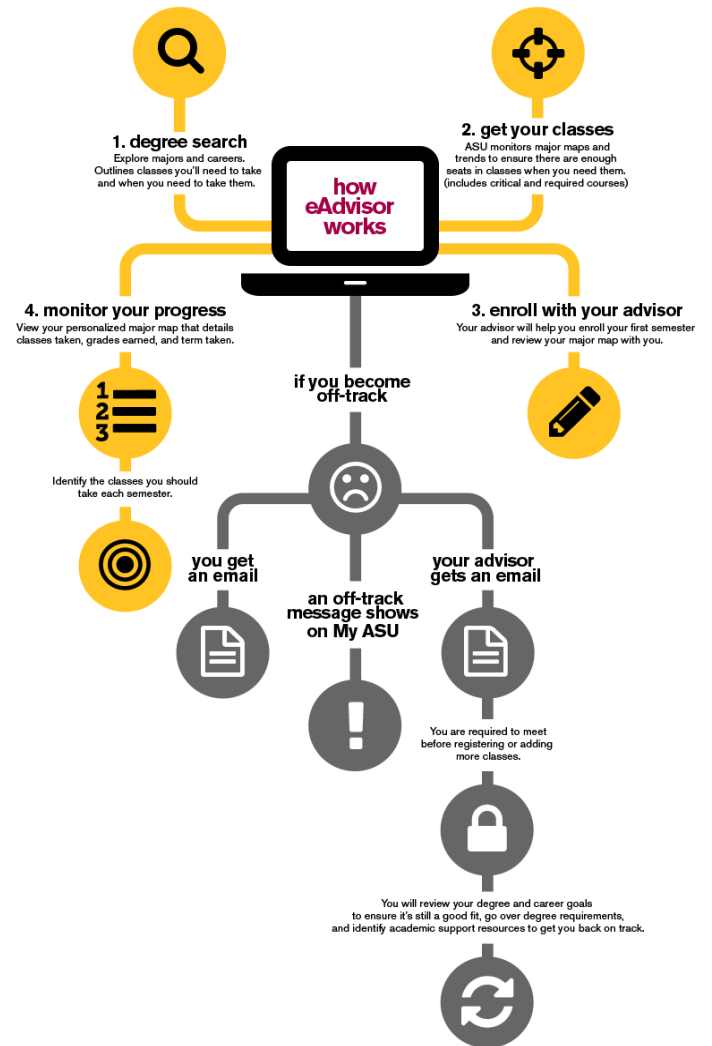
eAdvisor System

✓ Innovations

- Process redesign
- Data integration
- Predictive analytics

✓ Challenges

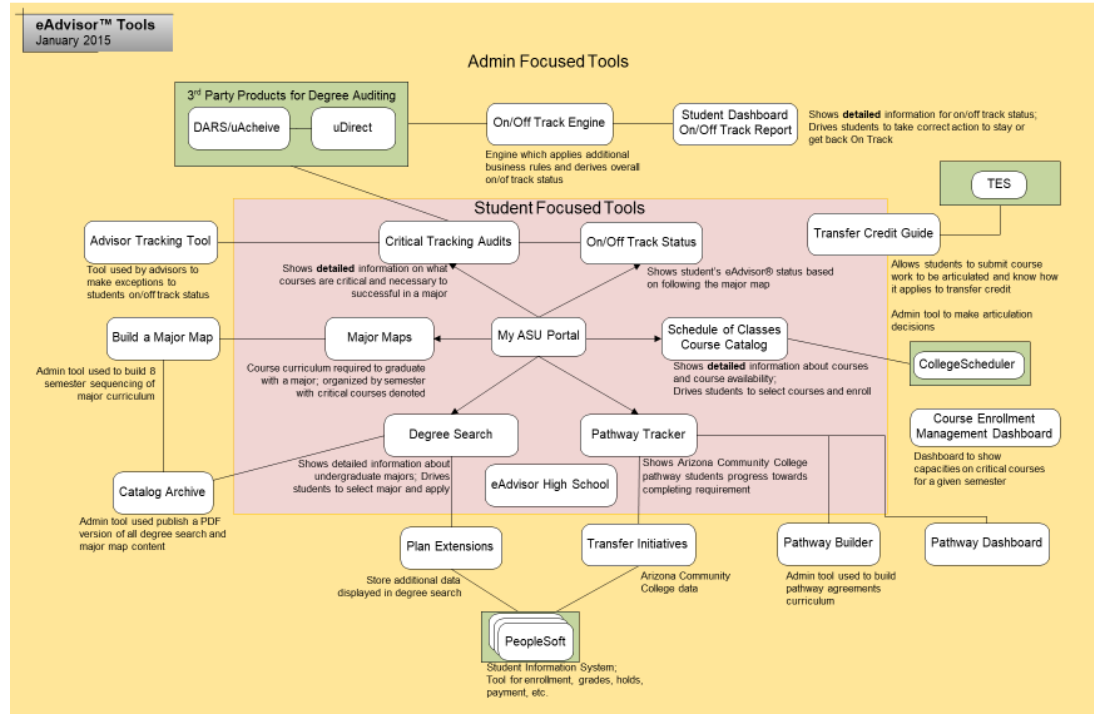
- Bureaucratic resistance
- Data hoarding
- Lack of prior training



eAdvisor System

✓ Activities

- Degree path mapping
- Database queries
- Predictive models
- Dashboards
- Training

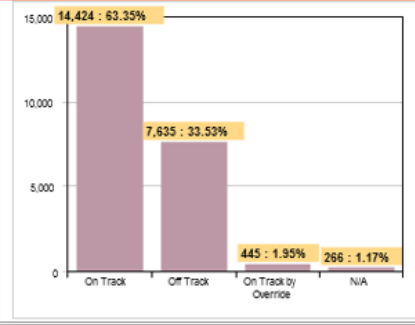
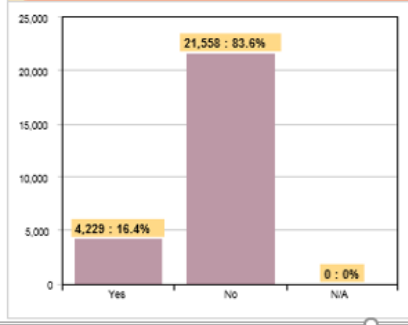


eAdvisor System

Help academic departments plan their course offerings

eAdvisor Cohort: JAC Cohort:
 Enrollment Status: In Term:

Sun Devil Tracking Status									
Academic Group	On Track		Off Track		On Track by Override		N/A		Total
	Students	%	Students	%	Students	%	Students	%	
	236	40.1%	297	50.4%	5	0.8%	51	8.7%	589
	447	56.2%	340	42.7%	4	0.5%	5	0.6%	796
	549	83.3%	98	14.9%	12	1.8%	0	0.0%	659
	1,020	66.2%	764	42.1%	27	1.5%	3	0.2%	1,814
	1,416	83.9%	755	34.1%	40	1.8%	4	0.2%	2,215
	4,982	72.2%	1,731	25.1%	182	2.6%	6	0.1%	6,901
	879	54.1%	494	39.4%	19	1.5%	62	4.9%	1,254
	286	53.9%	195	36.7%	20	3.8%	30	5.6%	531
	1,166	62.7%	642	34.5%	26	1.4%	26	1.4%	1,860
	145	71.4%	12	5.9%	1	0.5%	45	22.2%	203
	136	61.5%	79	35.7%	6	2.7%	0	0.0%	221
	670	53.7%	572	45.9%	5	0.4%	0	0.0%	1,247
	2,692	60.1%	1,656	37.0%	98	2.2%	34	0.8%	4,480
Total	14,424	63.3%	7,635	33.5%	445	2.0%	266	1.2%	22,770



eAdvisor System

Help academic advisors monitor and manage students

College Summary **Student Detail** Student Profile

Students With Indicator(s) Students At Risk: 14 [Export](#)



EMPLID	First Name	Last Name *	FinAid Issue *	CI Index *	ASR *	eAdvisor *	MyASU Usage *	Cum GPA *	Probation *	Transcripts Sent *	Enrollment Holds *	Fall 12 Not Enrolled *	Email
12	Ashley		—	110	1	✗	✗	1.81	✗	1	1	✗	✉
10	Angela		—	0	1	—	✗	2.40	—	—	1	✗	✉
12	James		—	96	—	✗	✗	3.03	—	—	1	✗	✉
10	Brent		—	0	—	—	✗	1.62	—	—	2	✗	✉
12	Chase		—	110	—	✗	✗	2.84	—	—	1	✗	✉
10	Allan		—	105	—	—	✗	1.85	—	—	2	✗	✉
12	Steven		—	103	—	✗	✗	1.41	✗	—	3	—	✉
10	Daniel		—	116	2	✗	✗	2.65	—	—	—	✗	✉
12	Alexa		—	65	1	—	✗	2.22	—	—	—	—	✉
12	Kaitlin		—	126	—	✗	✗	3.30	—	1	1	—	✉
12	Brian		—	63	—	—	✗	3.22	—	—	2	✗	✉
12	Evan		—	0	1	✗	✗	3.14	—	—	1	—	✉
12	William		—	126	—	✗	✗	2.33	—	—	1	✗	✉
12	Erin		✗	0	—	—	✗	2.43	—	—	1	✗	✉

eAdvisor System

Help academic advisors monitor and manage students

Student Profile Search: Search (e.g. John Doe or 1000923000)

College Summary Student Detail Student Profile

  Mag
Undergraduate Student (Sophomore)
Computer Science
Ira A Fulton Engineering

General Academic Classes Finances Indicators Comments

Emplid	80	Residency	Residents
ASURITE		Country of Citizenship	USA
Name	ome	Ferpa Level	0: No directory information withheld
Address	McDowell Rd.	Application Admit Type	FTF
		Applied Program	Ira A Fulton Engineering
Residence Hall *	--	Applied Date	0
Emergency Contact	--	Admit Term	
		Admit Type	
ASU Email	@asu.edu	Current Status	AD
Other Email	k.net	Current Campus	Tempe
Cell Phone		Current Program	Engineering
Home Phone	(P)	Current Plan	ho
Local Phone	--	Sub Plan	--
Fall 11 Cohort	FTFTF, Freshman	Spring 12 Enrolled	E
Spring 12 Cohort	ore	Spring 12 Enrolled Hours	
Gender		Enroll Deposit	
Ethnicity		Orientation Date	2011
Age		WUE	
Birth Date	2	Fall 12 Enrolled	E
Expected Graduation	--		

* Res. ...
and does not include those who used to live in a residence hall and have checked out.

eAdvisor System

Help students plan and manage their path to graduation



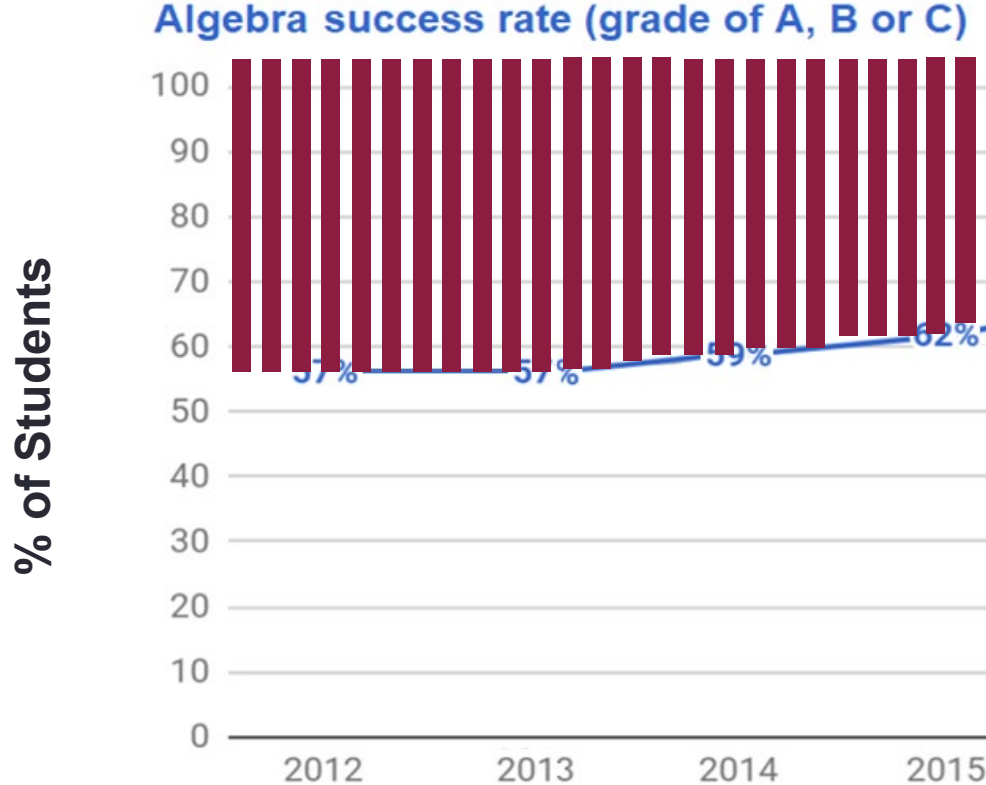


Academic Innovation



Personalized Learning

Improve the student success rate in College Algebra



**40% FAILURE
RATE**

Personalized Learning

✓ Innovations

We never change things by fighting the existing reality.

To change something,

build a new model

that makes the existing model obsolete.

Buckminster Fuller - architect, inventor, futurist

Personalized Learning

✓ Innovations

MISSION: 90% of students continue studies beyond their first year

OBJECTIVES:



Do 60 minutes of math problem solving every day



Help 90% of students get C or better in College Algebra



Reduce course withdrawal rate to under 5%



Identify struggling students by week 2

Personalized Learning

✓ Innovations

Mass Personalization



Personalized Learning

✓ Innovations



Personalized Learning

✓ Innovations



Personalized Learning

✓ Challenges

Every student has **unique learning needs.**

Students learn best by **solving problems.**

Students must **demonstrate mastery** of each lesson.

Technology **success depends on the teacher.**

Teachers provide **individualized instruction** to students.

Personalized Learning

✓ Activities

~~2006 Reduced class size to 30 students~~

~~2009 Recommended students take community college course~~

~~2011 Required Remedial Math course before College Algebra~~

2016 Redesigned with adaptive personalization model

Personalized Learning

✓ Activities

December 7, 2015 decision meeting:

Vice Provost for Student Success

Dean of Natural Sciences

Associate Dean of Arts and Sciences

Chair of Mathematics

Director of 1st Year Math Program

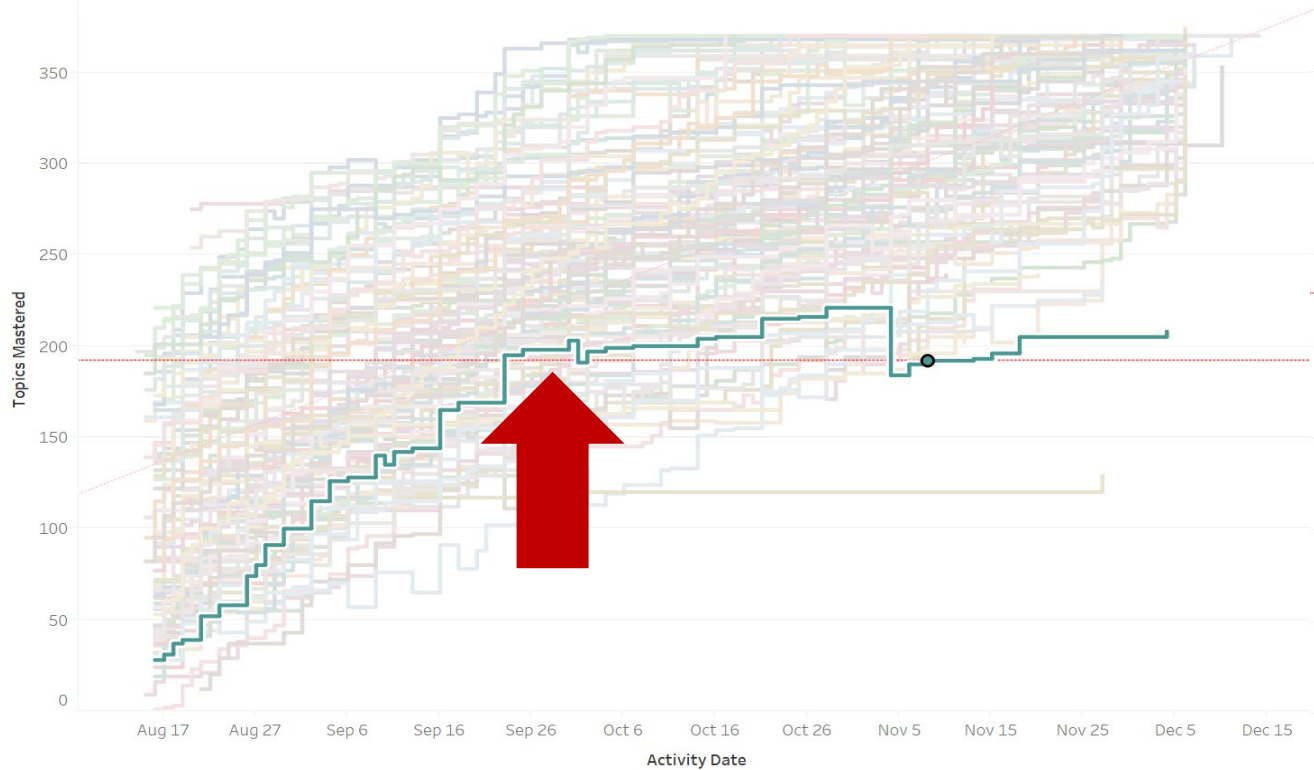
Adaptive Program Manager

By Fall semester 2016, ASU would:

- ✓ Eliminate Remedial Math course
- ✓ Implement a “test when ready” mastery model
- ✓ Use ALEKS adaptive system for all College Algebra sections

Personalized Learning

College Algebra - personal learning paths in ALEKS

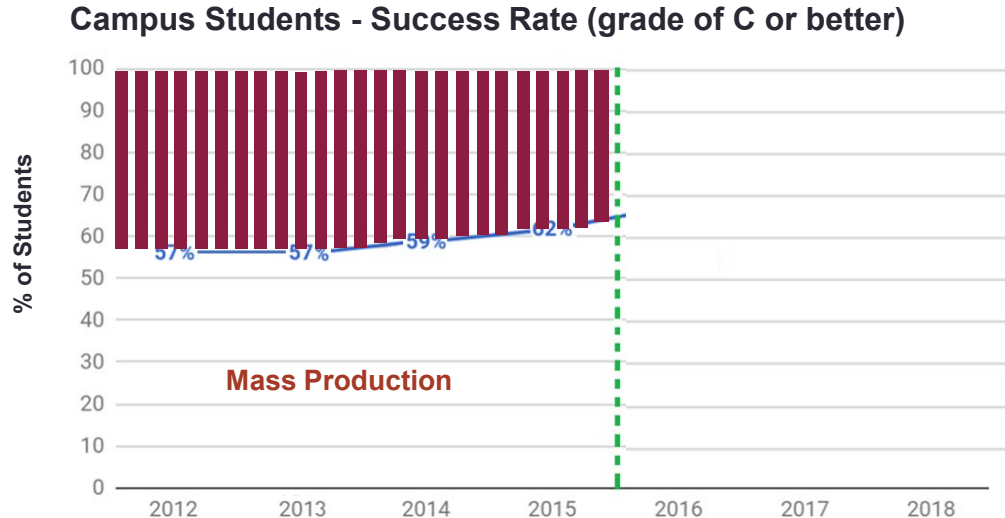


Personalized Learning

College Algebra ~ 10,000 students per year

Fall 2016 implemented McGraw Hill ALEKS

Same instructors, curriculum and assessments



+ 17 ppt
IMPROVEMENT

Personalized Learning

Innovation  **STARTS**

when you can  **STOP** **doing**

what you did before.

Personalized Learning

Professors STOPPED lecturing



Personalized Learning

Professors **STARTED** creating digital content



Personalized Learning

Professors **STARTED** creating digital content

← → ↻ 🏠 onlinestudio.asu.edu/asu-online-videos

Example

Define the following vector in MATLAB

$$\text{vec} = [-2^{\text{z}} \quad 0^{\text{z}} \quad 2 \quad 4 \quad 6]$$

$$\text{vec} = [-2 \quad 0 \quad 2 \quad 4 \quad 6]$$

$$\text{vec} = -2 : 2 : 6$$

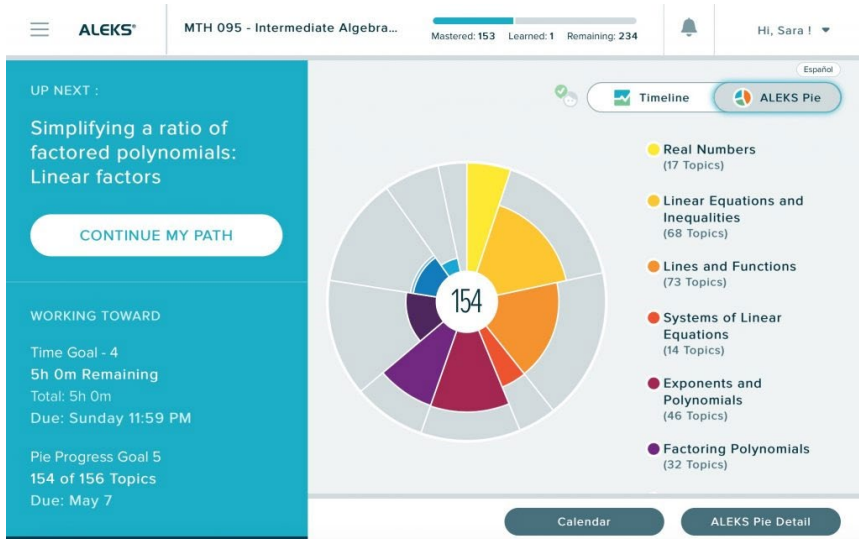
$$\text{vec} = \text{linspace}(-2, 6, 5)'$$



Personalized Learning

Professors **STARTED** configuring the adaptive system

ALEKS = Assessment and Learning in Knowledge Spaces



- ✓ Map our curriculum in the system
- ✓ Load our lecture videos
- ✓ Test the personalized lesson paths
- ✓ Design summative assessments

Personalized Learning

Professors **STARTED...**

Utilizing data to
diagnose student
problems



Providing
individualized
instruction



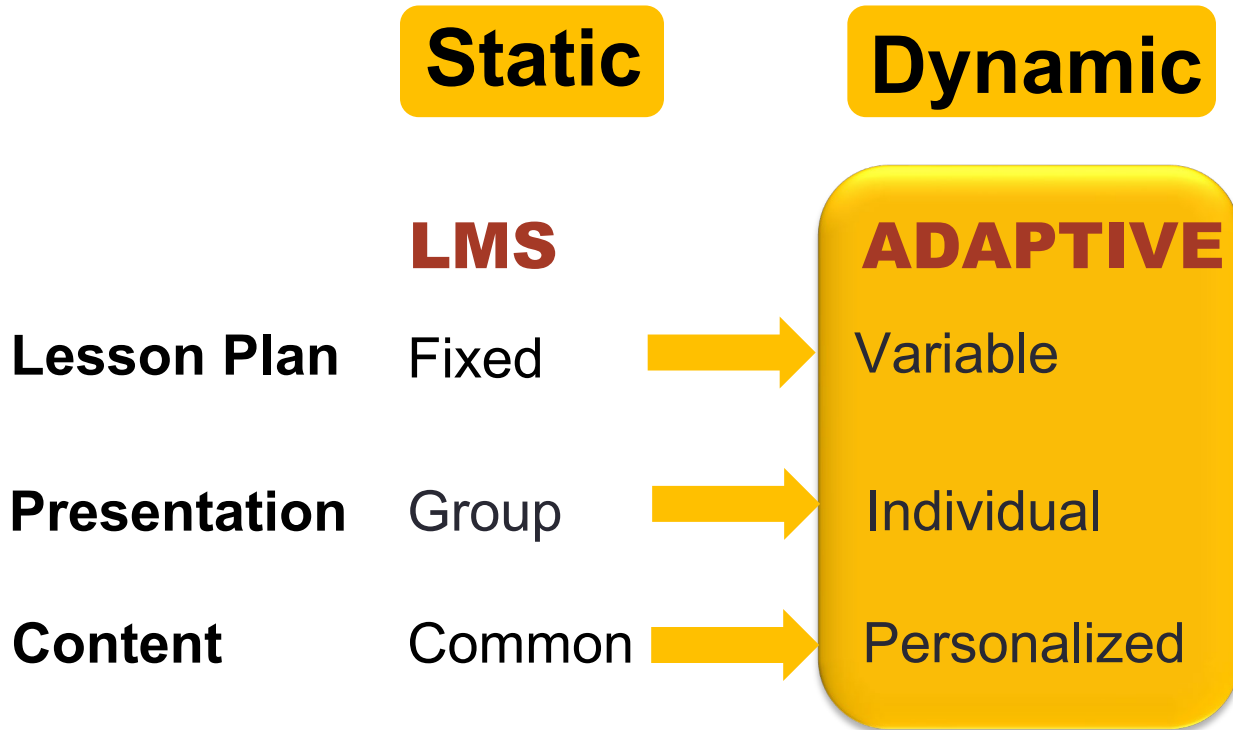
Leading group
problem solving
exercises



ASU College Algebra classroom

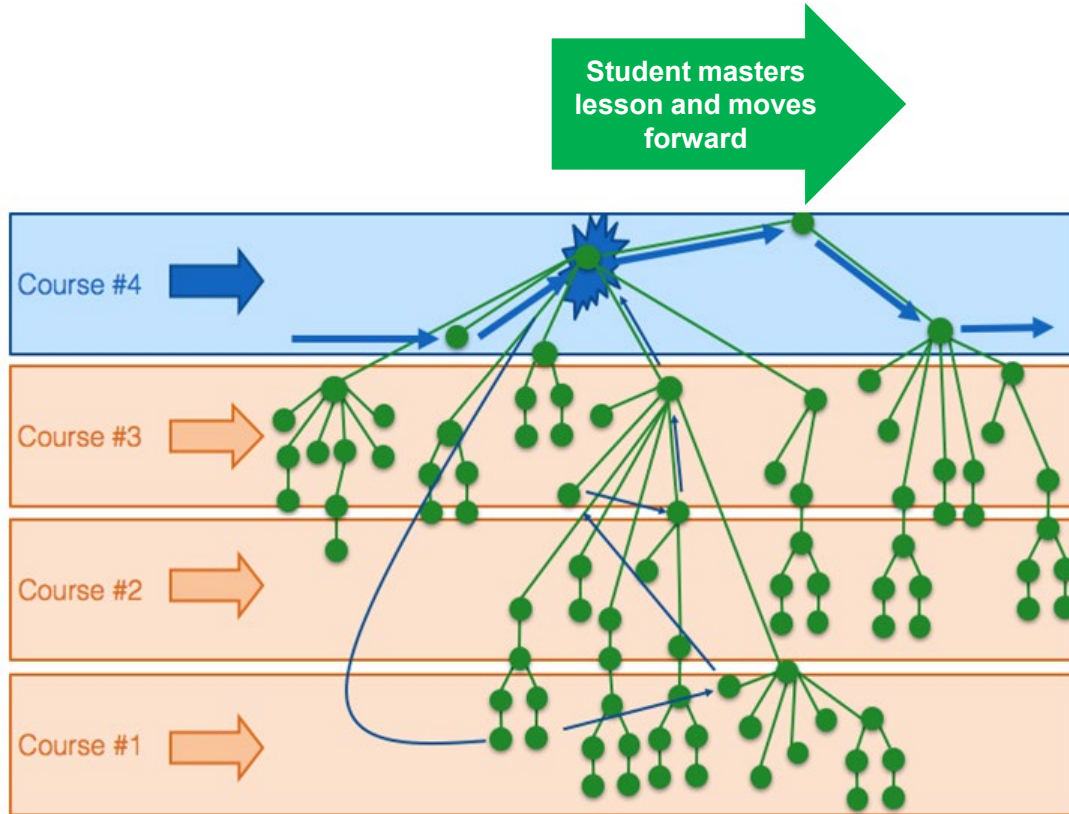
Personalized Learning

Professors **STARTED** teaching with dynamic systems



Personalized Learning

Students **STARTED** learning in a mastery model



Personalized Learning

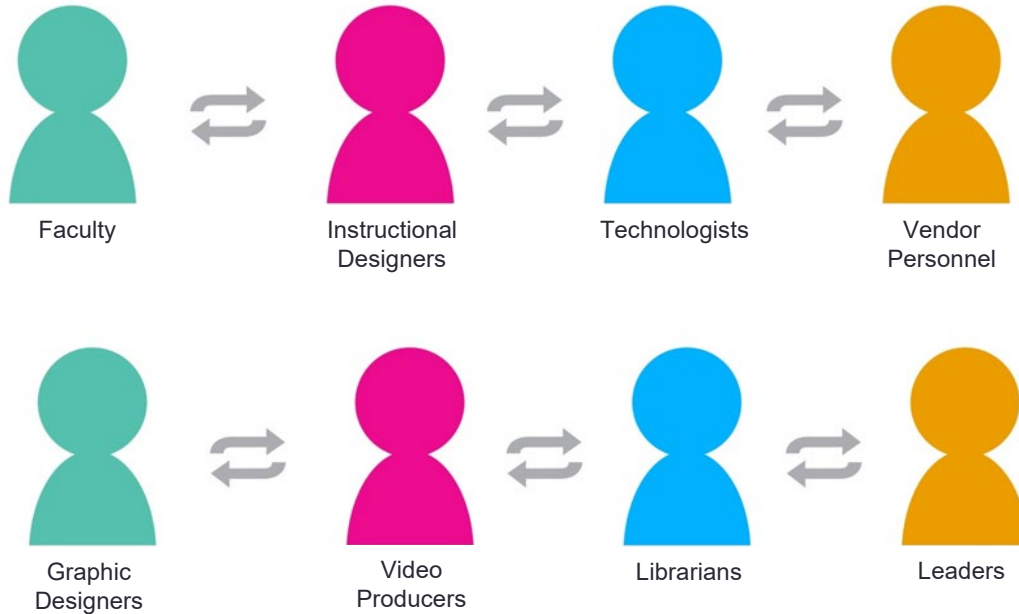
Students **STARTED** getting rapid remediation from system

Rapid Remediation



Personalized Learning

Leaders **STARTED** investing to support innovation



Personalized Learning

Leaders **STARTED** working together to support innovation



Professors



Department
Chairperson



College
Dean

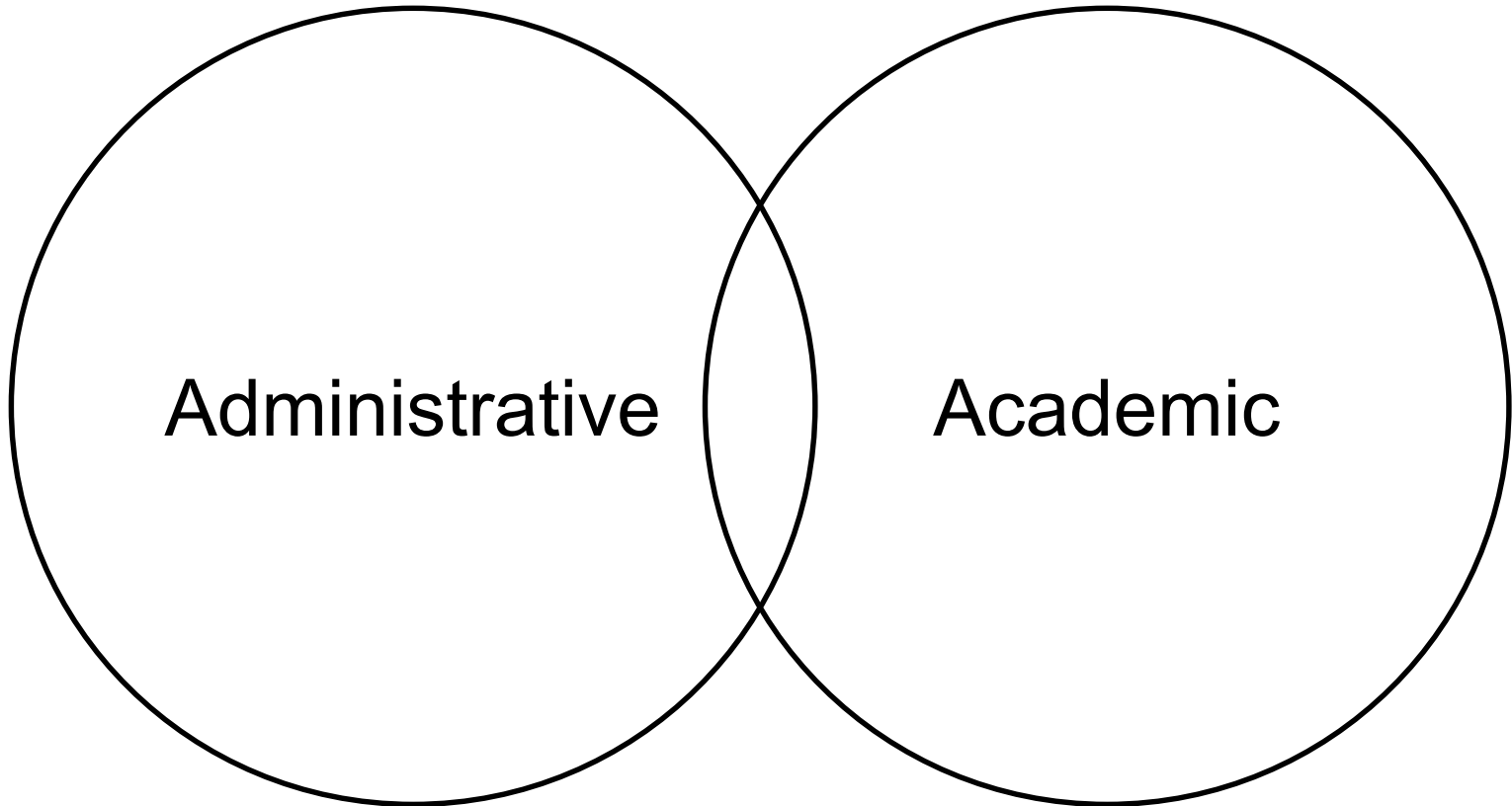


University
Provost

Invest in BOTH Academic and Administrative Innovation



2-sides to our Innovation Efforts



Invest in BOTH Academic and Administrative Innovation

**The best way to predict
the future is to invent it.**

Alan Kay, computer scientist, 1982

Thank you for your attention!

**Dale P. Johnson
Director, Digital Innovation
University Design Institute
Arizona State University**

Dale.Johnson@asu.edu



Panel Discussion

Save the date:

**Thursday, January 25,
10 AM CET**

Asian University for Women

**Stay tuned for the upcoming
webinar!**



Dr. Rubana Huq

Businesswoman, a poet, and
the Vice Chancellor of the Asian
University for Women in
Bangladesh

**Have a great evening and
follow us with
[#InnovativeUniversities](#)**