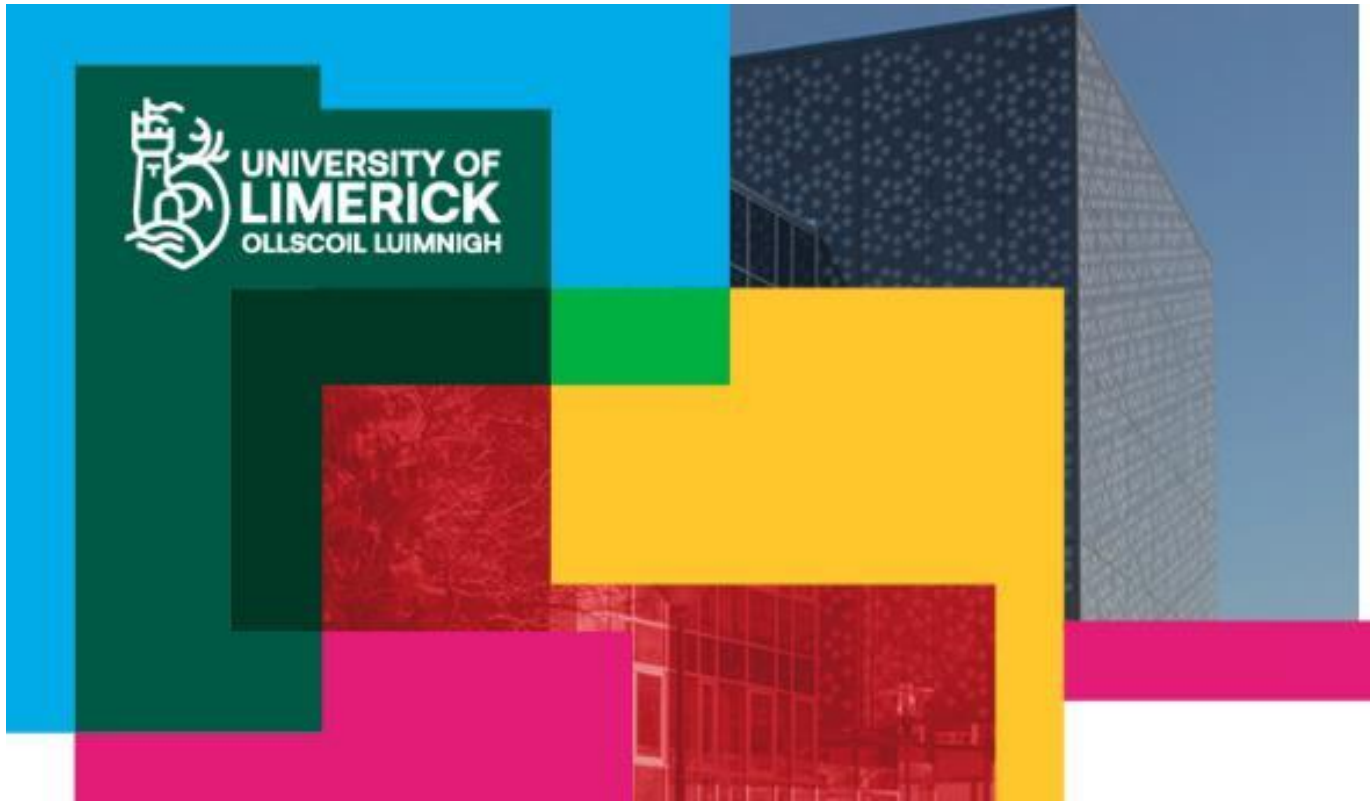


TRANSFORMING HIGHER EDUCATION

Fostering collaboration between education and industry for upskilling

Rialtas na hÉireann
Government of Ireland

HCI Human Capital Initiative

Welcome

#ULTHE

Disruption in Higher Education – Where now for workplace focused education?

#ULTHE

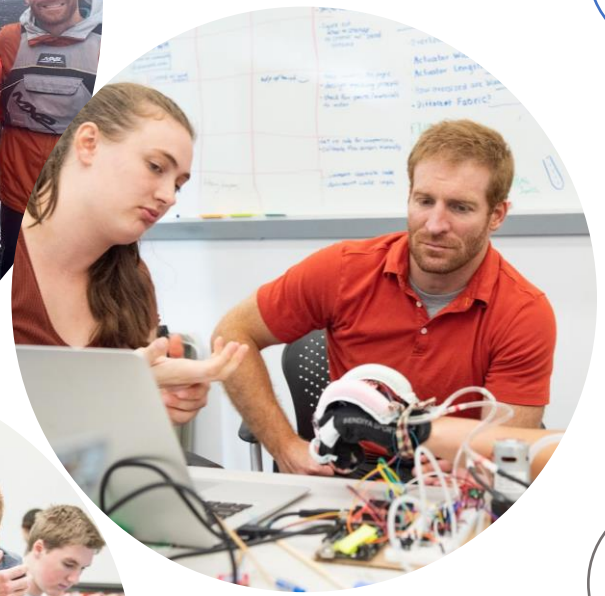
Growing the Next Generation of Problem Solvers- Innovation in Curriculum Design

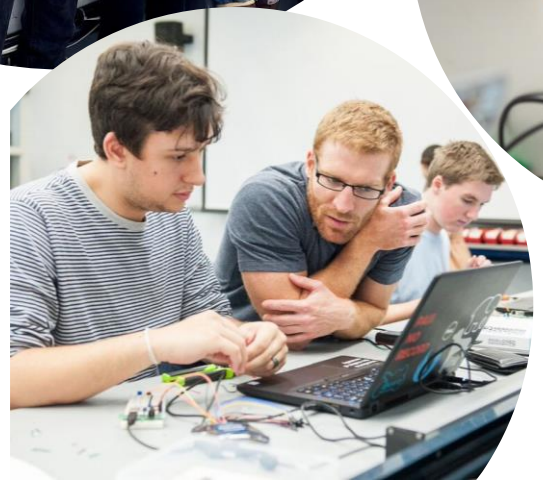
Jeff Dusek, PhD

Associate Professor of Engineering

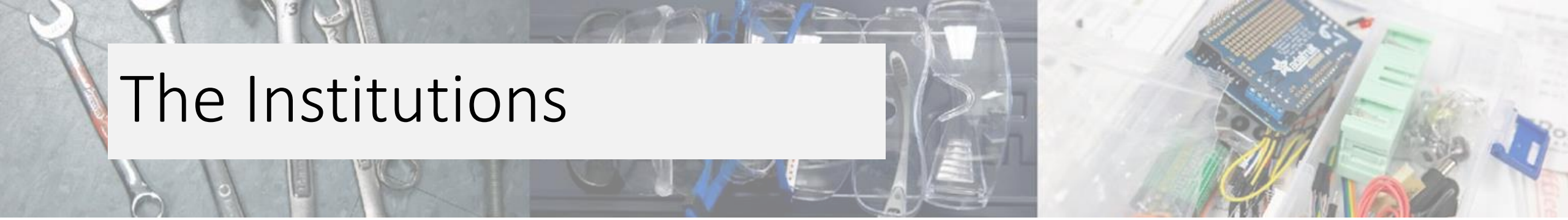
Baldwin Wallace University, USA

About Me





- Associate Professor of Engineering
  Baldwin Wallace University
- Assistant Professor of Mechanical Engineering
  Olin College, 2017-2022
- Postdoctoral Fellowship at Harvard University
  Self-organizing Systems, 2016-2017
- PhD in Mechanical and Ocean Engineering, MIT 2016



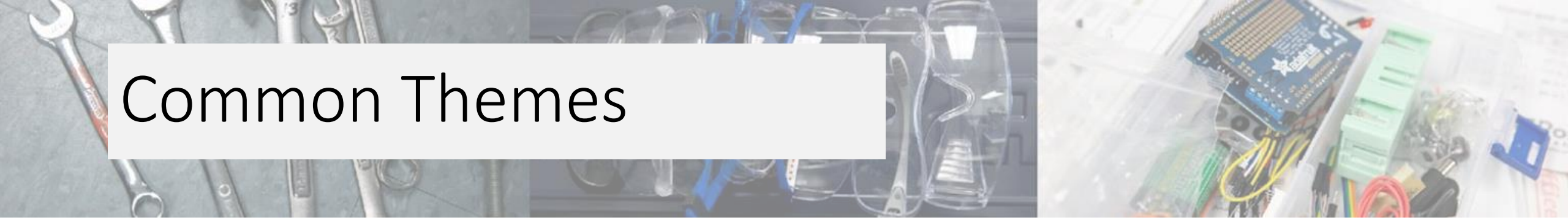
The Institutions

Olin College of Engineering

- Founded in 2000 as a laboratory for Engineering Education
- Located in Needham, Massachusetts
- Undergraduate only- 350 students
- Three majors: Engineering, MechE, ECE
- Selective- require calculus and physics
- Residential student body with large geographic spread
- Gender-balanced student body

BW BALDWIN WALLACE UNIVERSITY

- Founded in 1845 in Berea, Ohio
- Engineering department had first two graduates in spring 2022
- General engineering major
- New and growing department- less selective
- Approximately 75% student athletes
- Residential and commuter students, primarily local, ~3000 undergraduates



Common Themes

Despite Olin and BW being very different institutions, some common observations inform curriculum development:

- Differences in preparation are large, and they are only amplified by COVID disruptions
- College cost is high (in the US) and the value proposition needs to be demonstrated

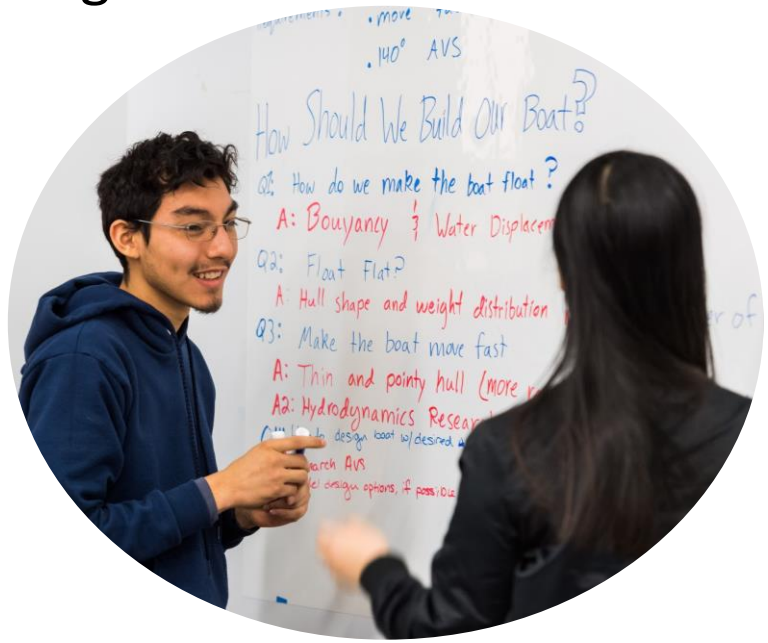
- Student tend to jump into new situations with a ‘build-first’ mentality
- Especially at Olin, students were confident in their design skills, but did not feel that quantitative analysis would help with design or fabrication
- Students do not feel confident that they can choose or perform helpful analysis
- Students struggle to adapt modeling concepts to new scenarios

Developing students in Quantitative Foundation Courses

I want students to be proactive and take ownership of their learning.

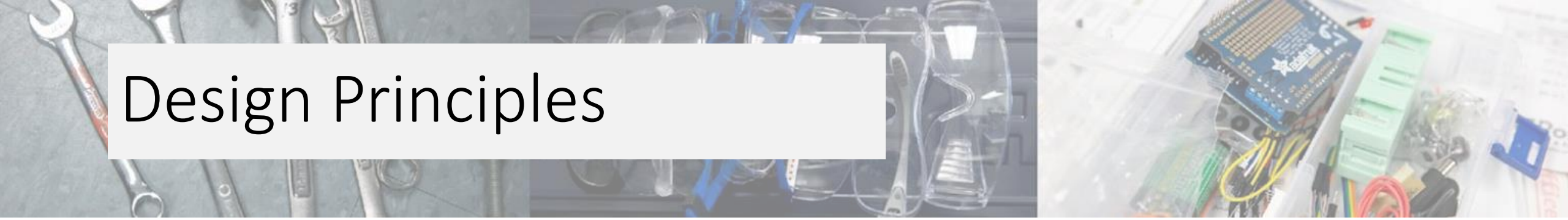
I want students to develop their identity as a scientific thinker.

I want students to be good and confident at doing analysis:



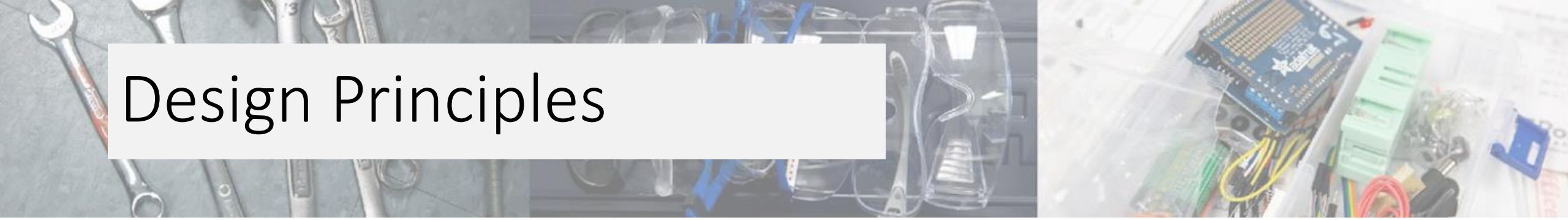
- be comfortable with a quantitative analysis process
- know how to make use of analysis for engineering design
- be ready to apply analysis to new problems

Through **collaborative design across disciplines, institutions,**
and several **course iterations**,
a set of
design principles
are emerging.



Design Principles

1. Demonstrate relevance through context
   - Include framing and setup in the problem-solving process
   - Foster connections to the outside world and between concepts (with concept mapping)
2. Identify key content to teach; facilitate lifelong learning for the rest
   - Projects build on core concepts, but encourage independence
3. Use physical artifacts to build intuition and validate calculations
   - Combine exploration, analysis and experimentation
   - Consider different levels and forms of analysis
4. Promote peer learning through shared spaces and experiences
   - Create opportunities for shared success *and* shared failure
   - Students teaching students is good for everyone



Design Principles

1. Demonstrate relevance through context

2. Identify key content to teach; facilitate lifelong learning for the rest

3. Use physical artifacts to build intuition and validate calculations

4. Promote peer learning through shared spaces and experiences

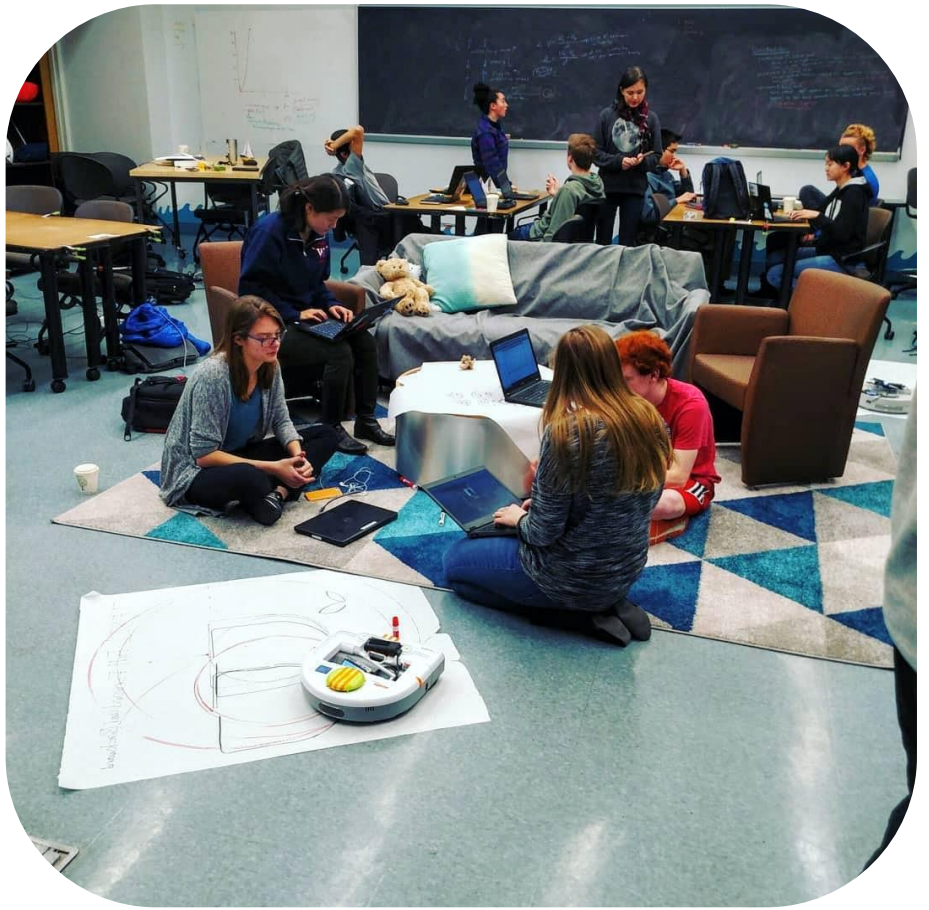
Foster Intuition

Example:
Use physical artifacts to build intuition and validate calculations

Combine exploration, analysis, and experimentation

- Providing an opportunity for early success helps build identity and belonging

Developing intuition around conceptual material creates a solid base, and requires more than equations in a book

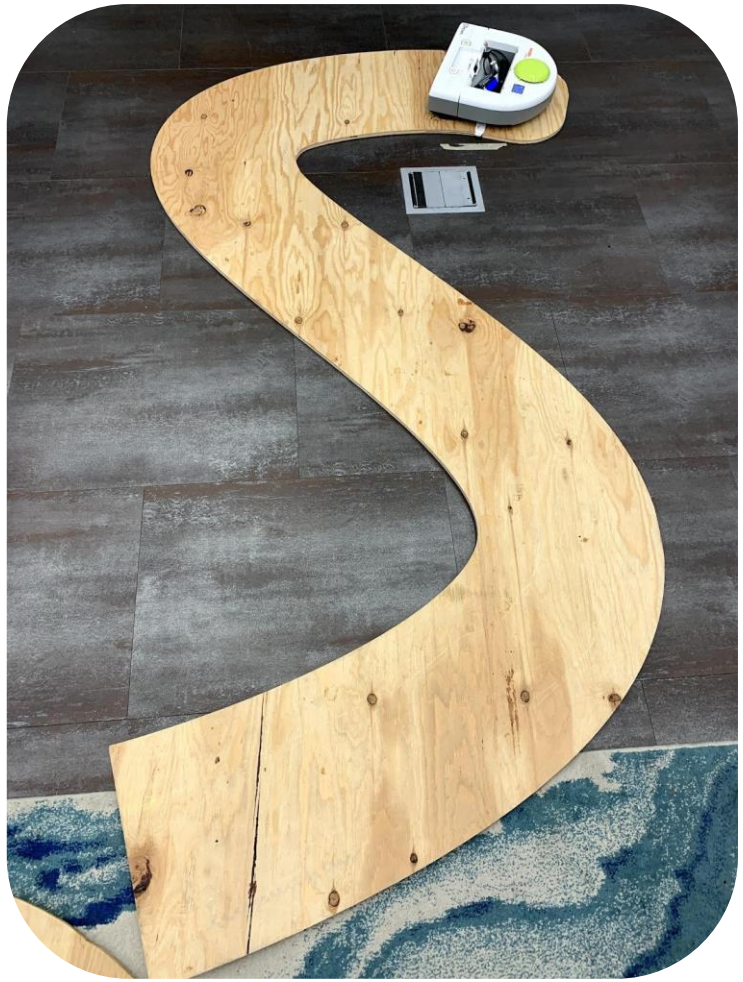


Example: QEA at Olin

Question: How do you traverse a parametrically defined “bridge” using a mobile robot?

Analysis and Experiment Approach:

1. Calculate linear and angular velocity for points on a parametric curve
2. Find left/right wheel velocities for a differential drive robot
3. Verify analysis through in-class physical demonstration



A robot simulator has also been used for the “bridge,” but it does not generate the same community or evoke strong reactions as a physical robot.

Example: PHY163 at BW

During the first few years of the Baldwin Wallace Engineering program, it was observed:

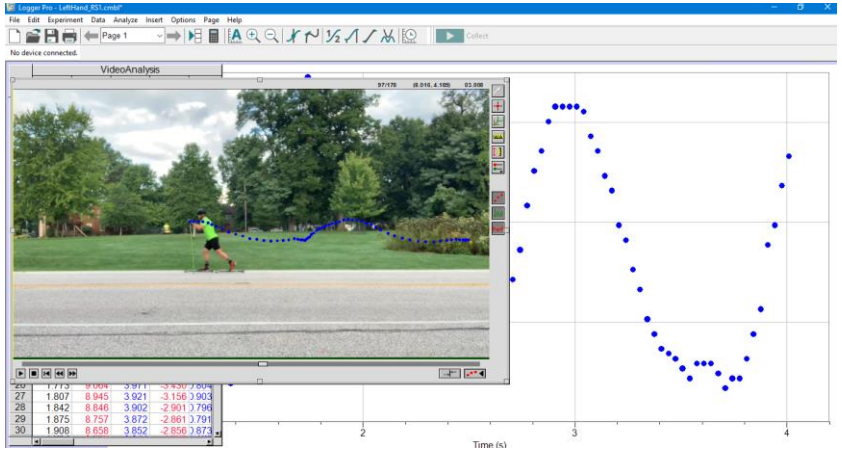
1. Students were entering with very large differences in math preparation
   - COVID-related impacts that amplify differences expected for years

2. Calculus-based Physics I in the first semester was a substantial challenge

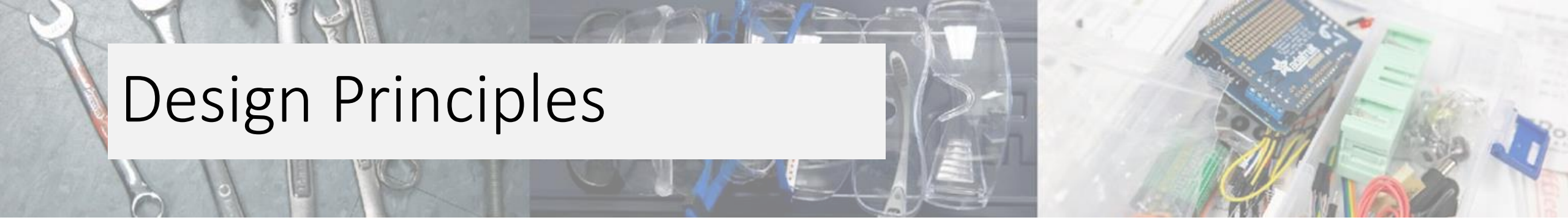
Curricular response:
PHY163 Freshman Physics Seminar*

- Team taught by Physics and Engineering
- First semester physics and engineering students

"The course is focused on student exploration, with an emphasis on self-directed learning and development of technical and professional identity."



*Need a better name



Design Principles

1. Demonstrate relevance through context
2. Identify key content to teach; facilitate lifelong learning for the rest
3. Use physical artifacts to build intuition and validate calculations
4. Promote peer learning through shared spaces and experiences

Peer Learning and Shared Experiences

Example:
Promote peer learning through shared spaces and experiences

Create opportunities for shared success *and* shared failure

Students teaching students is good for everyone

Shared Experiences

Boats- Buoyancy, Stability, and Multivariable Calculus

Day 1: Rapid cardboard boat build

- Lots of sinking!
- Low stakes, shared failure builds community

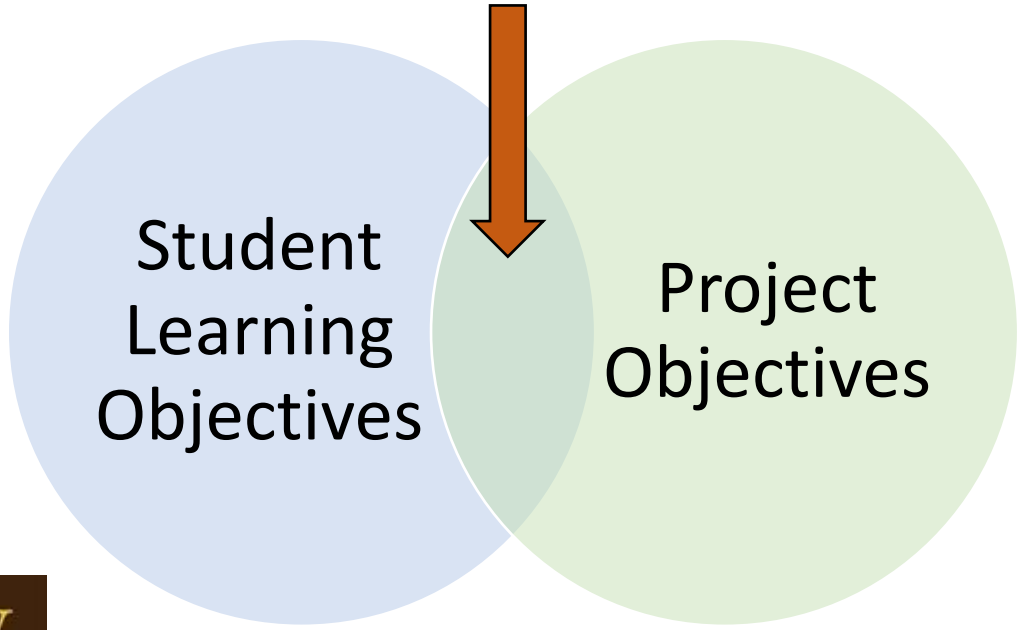
Final Boat Build: Analysis

- Demonstrate power of analysis
- Shared success

Undergraduate-Focused Research

Undergraduate research must address project goals **and** student learning!

Successful Undergraduate Research



Provide opportunities for students to practice communicating their work:

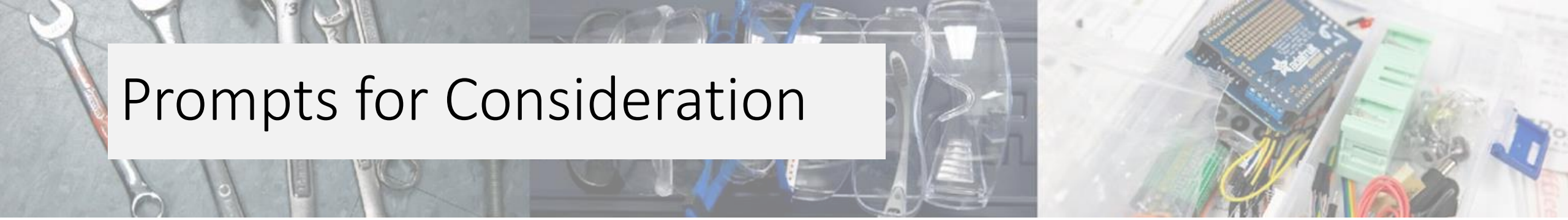
Final Thoughts

Things I'm thinking about:

- How to create structures/processes where everyone has the opportunity to succeed, while maintaining standards?
- How can we create flexibility in curriculum structures?
- What is the value proposition of the traditional college experience, and what is my role as a professor?
- How can we lower the cost of college?
- How do we better utilize team teaching?

jdusek@bw.edu

Huge thanks to colleagues at Olin and BW who contributed to this work!



Prompts for Consideration

1. Several of the principles we introduced rely on close student-to-student and student-to-instructor interactions.
   a. Do you do anything at your home institution to intentionally develop peer learning? Do you create opportunities, provide skill development/training, or both?
   b. Have you noticed impacts on peer-to-peer and peer-to-instructor interactions after periods of remote instruction? Have you taken steps to rebuild/reinforce culture?

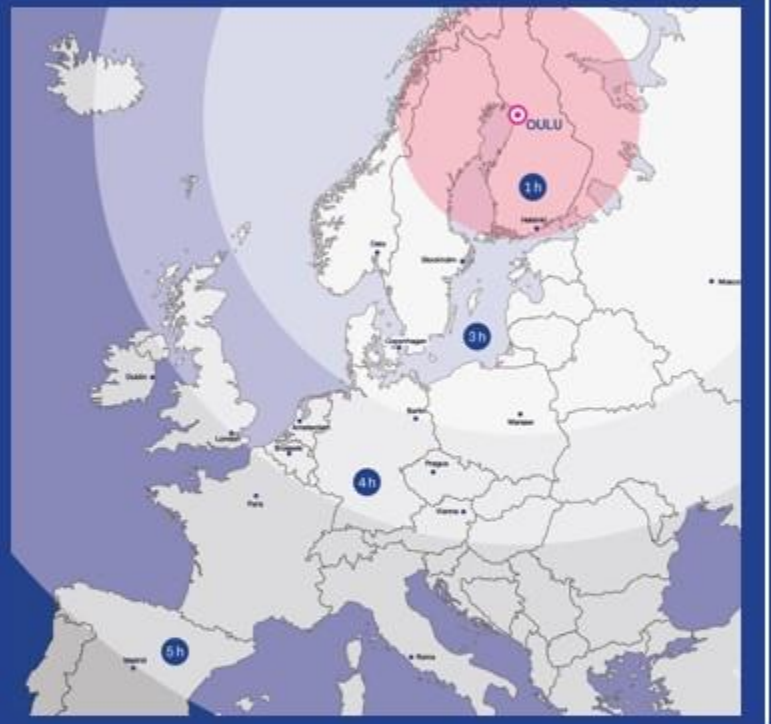
2. Due to a variety of factors including increasing experience differences in our student body, learning impacts from the pandemic, and our increased emphasis on teaching lifelong learning skills, we have had to make choices about what content to teach, and what material to leave for self-directed study.
   a. Have you noticed constraints on quantity of content in your courses?
   b. Have you identified a “floor” for content in your program? If so, how did you decide, and how is/did the process involve(ing) students?

More diversity, better integration – Diversity actions at the University of Oulu

Minna Isomursu

2 November 2022

The University of Oulu in brief



Natural Sciences and Mathematics

Biosciences

Medicine and Health

Economics and Business Administration

Engineering and Architecture

Information and Communication Technologies

Education

Humanities

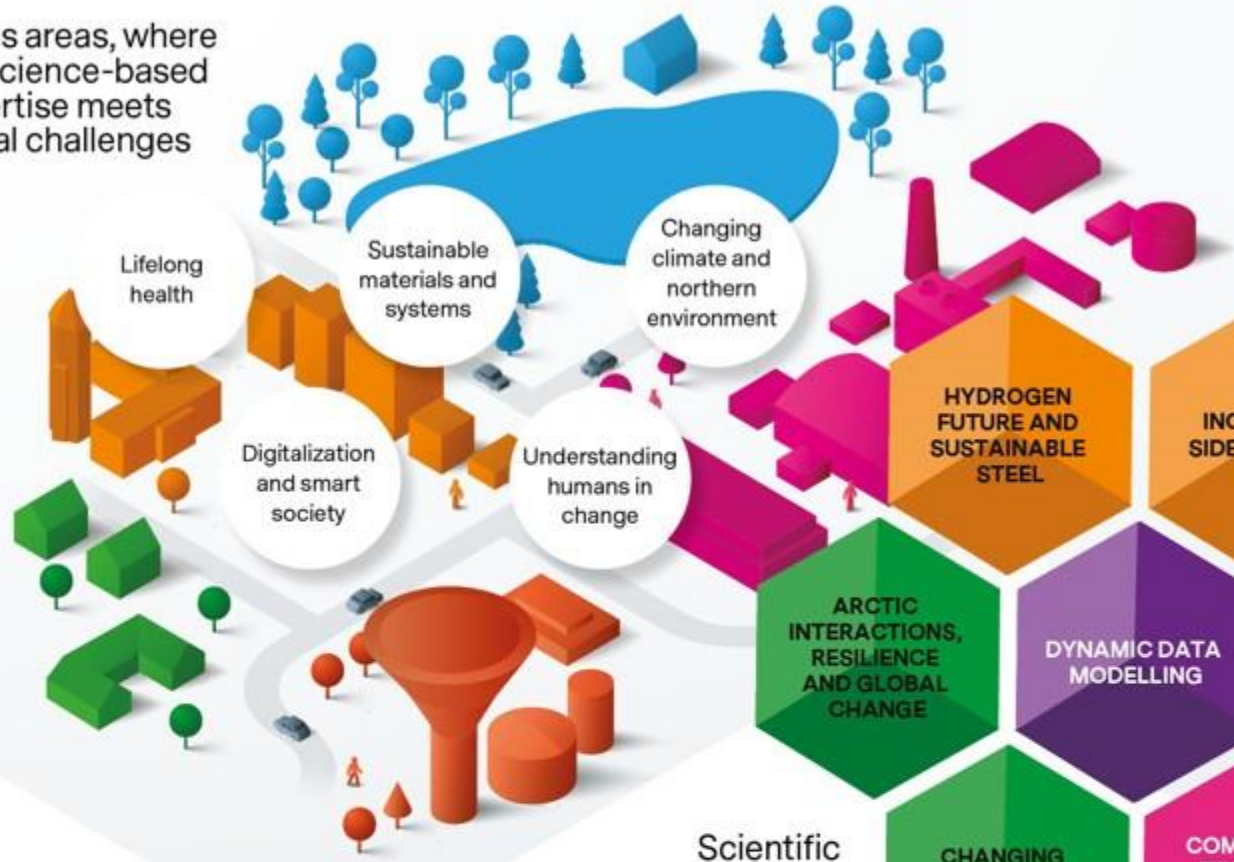
13 800
Students

3 700
Staff

65 000+
Alumni

Strategy of the University of Oulu 2020–

Focus areas, where our science-based expertise meets global challenges



Scientific profile

HYDROGEN FUTURE AND SUSTAINABLE STEEL

INORGANIC SIDE STREAMS

ARCTIC INTERACTIONS, RESILIENCE AND GLOBAL CHANGE

DYNAMIC DATA MODELLING

6G SOLUTIONS FOR DATA-DRIVEN SOCIETY

STRENGTHENING HUMAN CAPABILITIES IN THE DIGITAL ERA

CHANGING SPACE ENVIRONMENT

COMBATTING FIBROSIS IN CHRONIC DISEASES

DIGITALIZED SOLUTIONS FOR FUTURE HEALTHCARE

Creating new

Taking responsibility

Succeeding together

THE UNIVERSITY COMMUNITY'S VALUES

Strategic development programmes

RESEARCH
High-level impactful research

EDUCATION
Quality education for different parts of life

INNOVATIONS AND ENTREPRENEURSHIP
Entrepreneurial source for research-based innovations

COMMUNITY
Skillful, adaptable, diverse and international community

DIGITALIZATION
High-quality online studies and user-centred digital services

CAMPUSES AND SUSTAINABLE DEVELOPMENT
Inspiring working and studying environment at resource-efficient, green campuses

Faculty of Information Technology and Electrical Engineering

Education

- Electronics and telecommunications
- Computer science
- ICT
- Business analytics
- Biomedical engineering

Research

- Measuring, electronics and materials, 5G and 6G wireless communications, artificial intelligence, systems, software

574	2 407	EUR 40 million
Staff	Students	Total funding

Equality in numbers

- **Number of female students in technology is still low (18% in 2019)**
- **Women are underrepresented in academic leadership**
  - 32.2% of full professors are female (2019) – 29% in University of Oulu (2021)
  - 38% of PIs of Academy funded projects are females
  - 21% of rectors in Finland are female, 11% of management of University of Oulu are female
- **34% of research and teaching staff at University of Oulu are internationals**

The Happiest Faculty in the World

What is Faculty's role in wellbeing?

One year targeted wellbeing action

Proactive, forward looking

Strengths based

Casting

Wellbeing Lead

Prof Minna Isomursu

Sponsor

Dean Jukka Riekki

External coaches

Terhi Vesterinen and Tiia Kallio

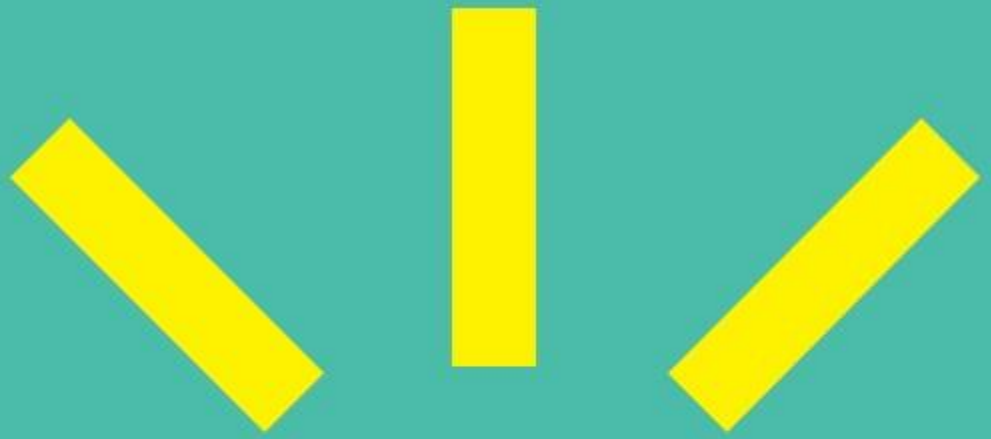
Wellbeing Promoters

From each Unit

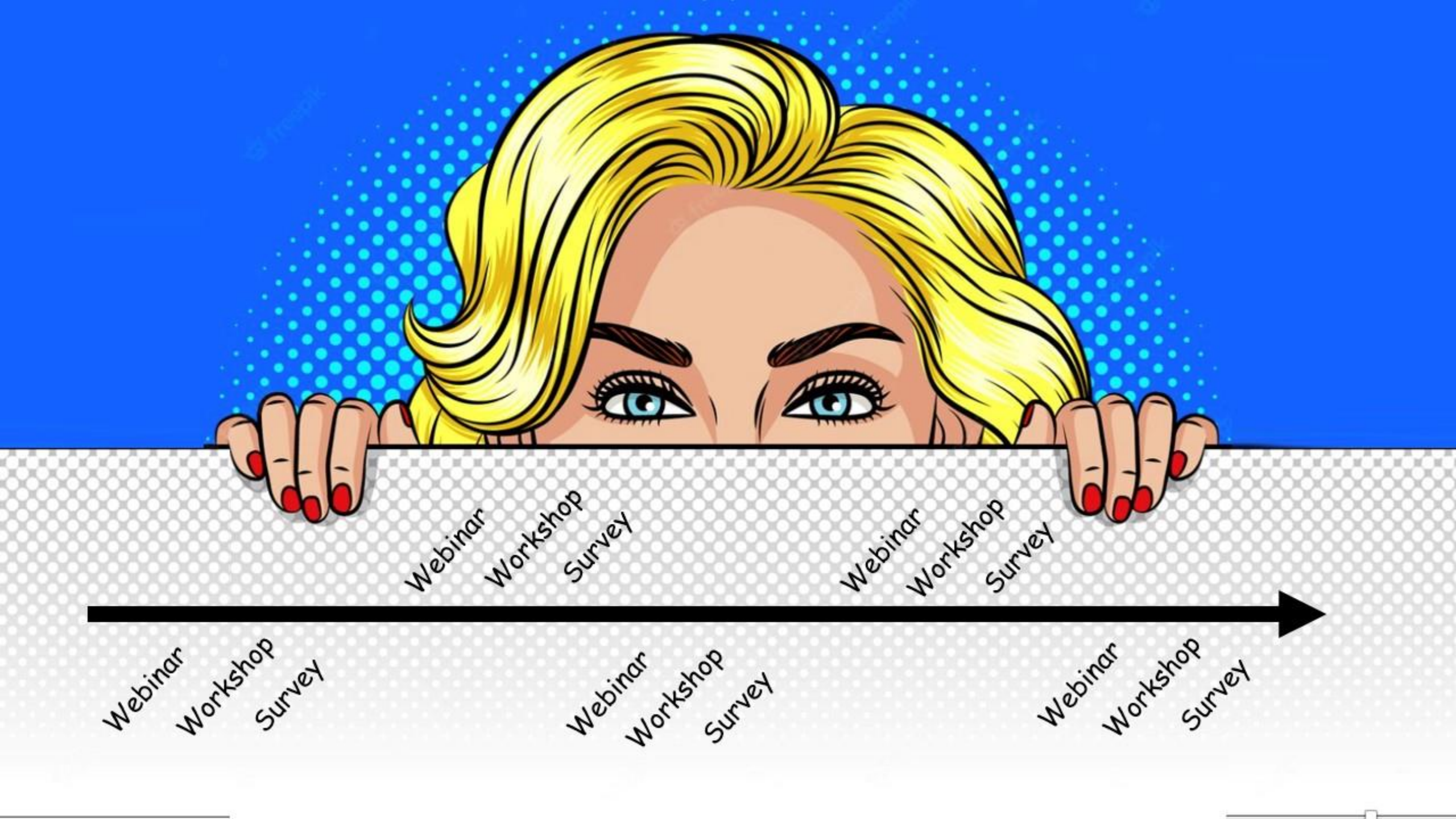
In collaboration with

HR, equality, occupational health


Dialogue
Leadership
Diversity
What else?



Dialogue


Webinar
Workshop
Survey
Webinar
Workshop
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Workshop
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Workshop
Survey
Webinar
Workshop
Survey

ROUND 1

DIALOGUE

Goal: Facilitating dialogic communication at ITEE

Step 1: Webinar on xxx by xxx at xx.xx.2022

Step 2: Workshop with wellbeing promoters

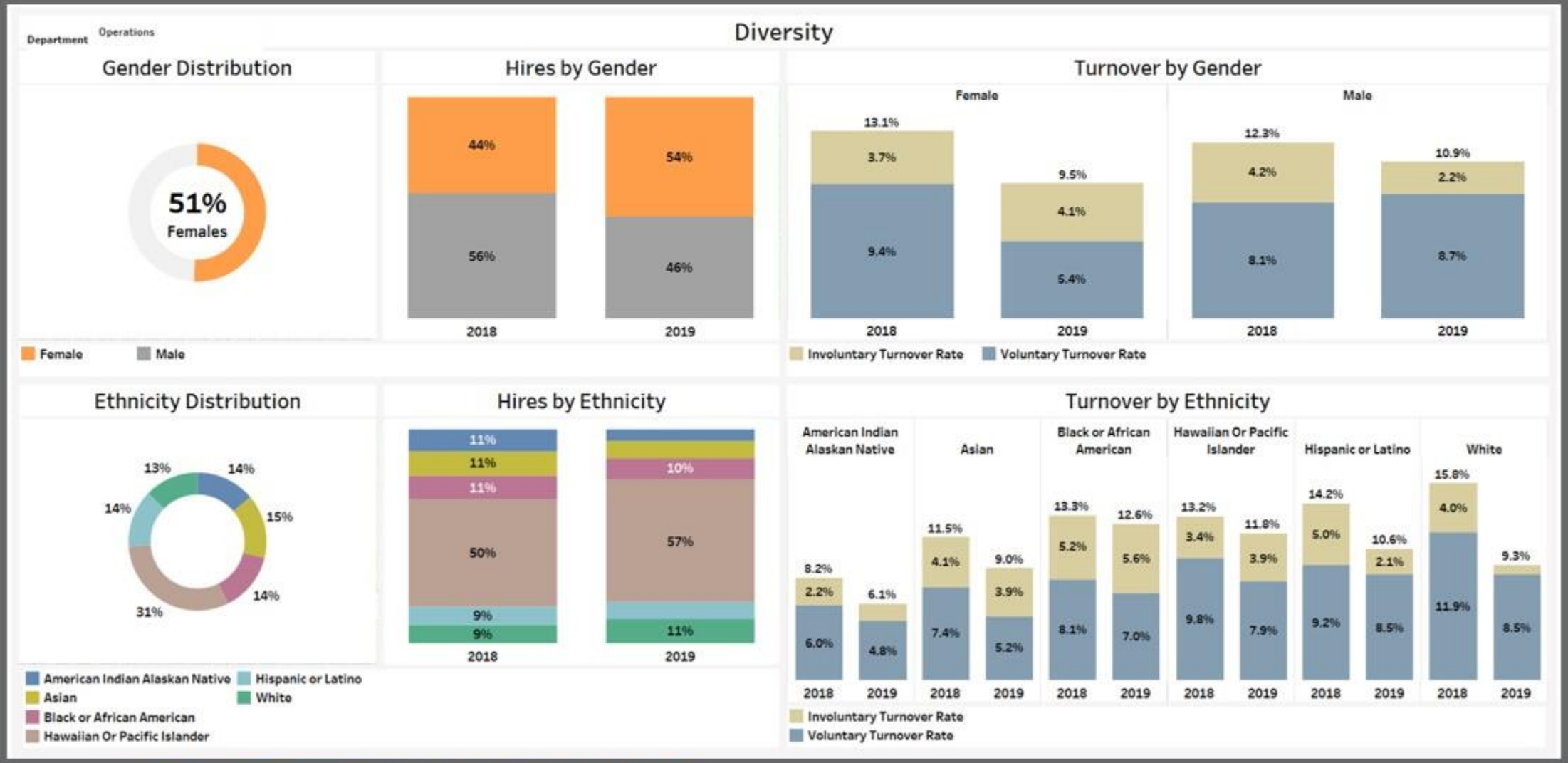
Step 4: Dialogue in units

Step 3: Survey to all faculty members

Wellbeing promoter in each unit

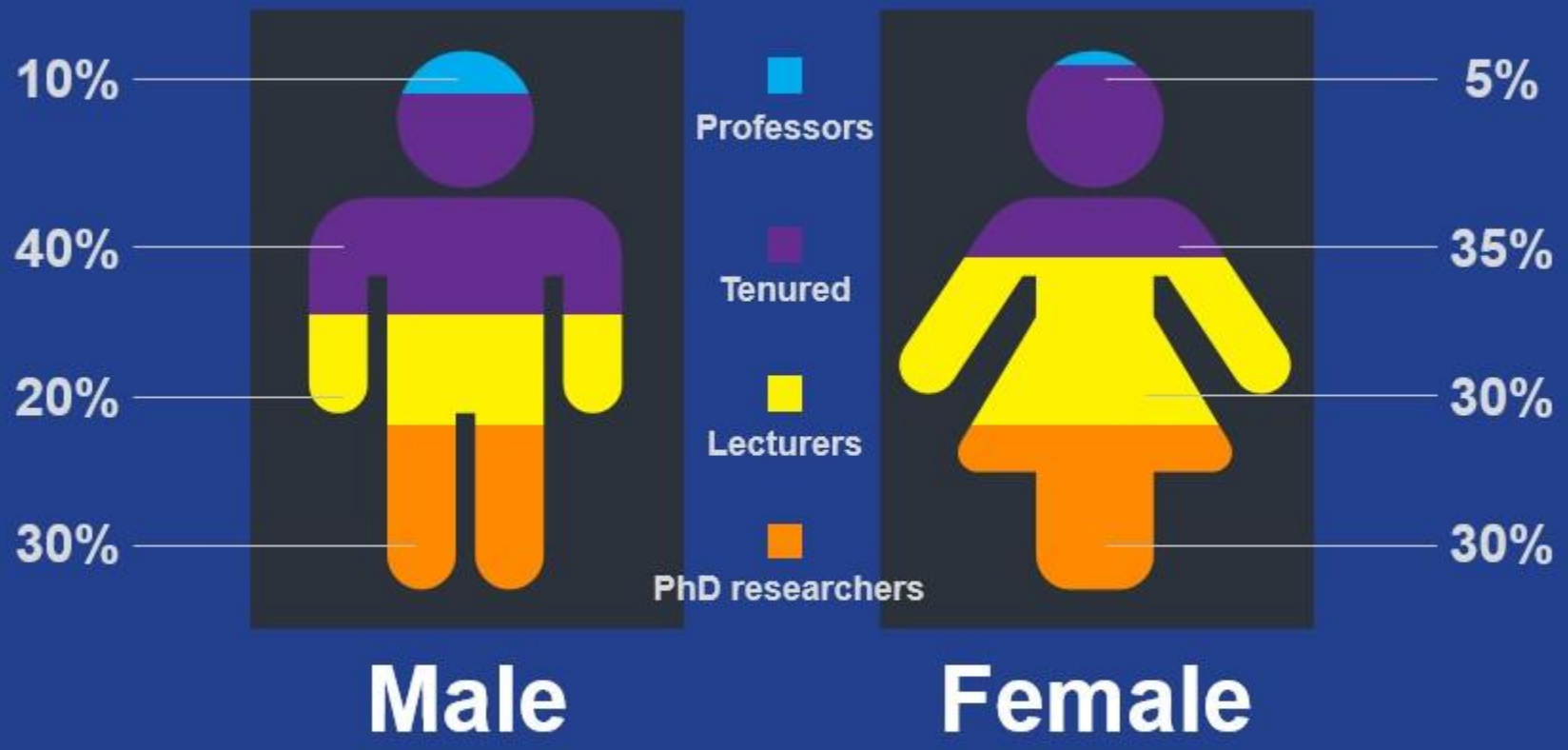
Diversity

Diversity dashboard



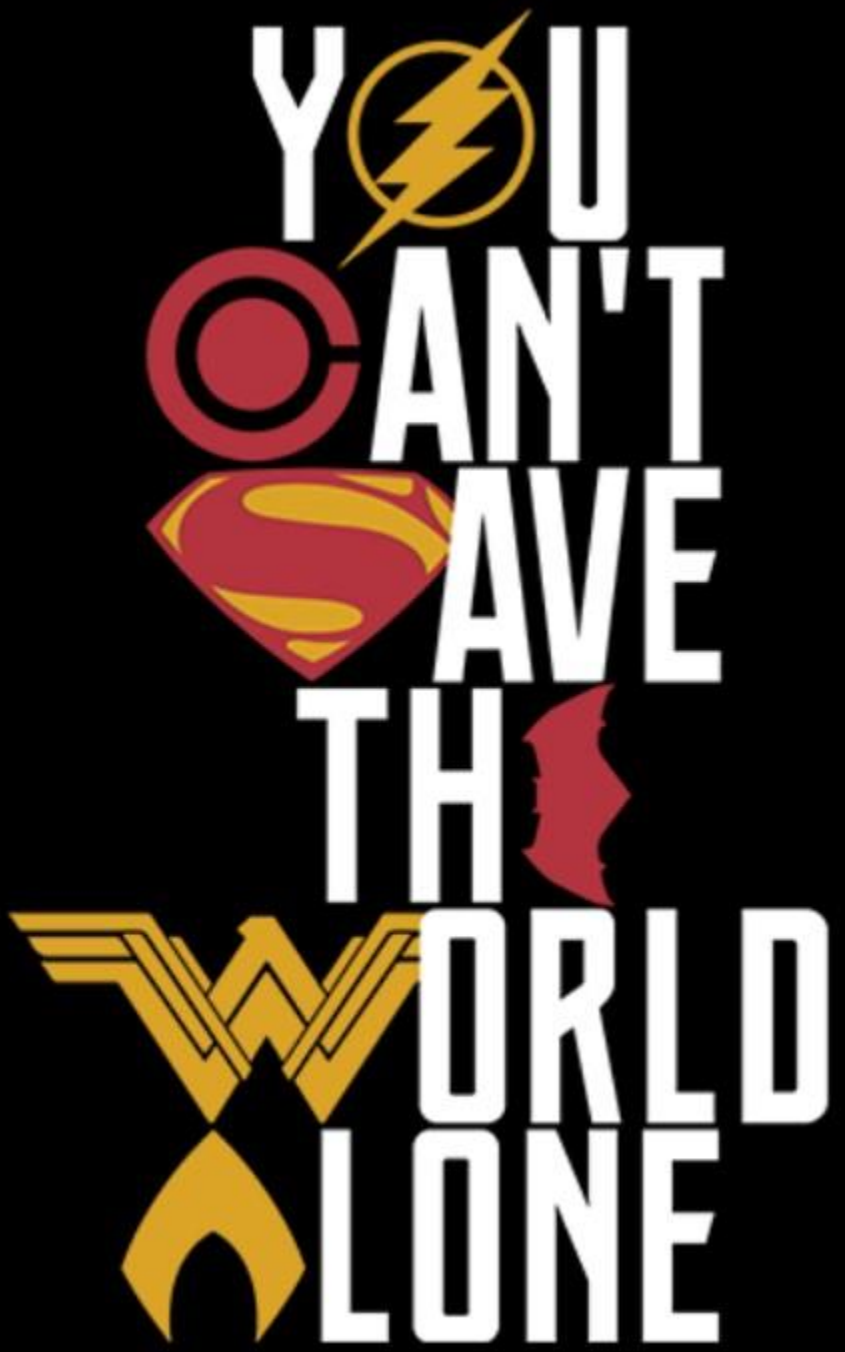
Diversity dashboard

Diversity dashboard



Existing numbers from our faculty

	Male	Female	Total	Change previous year
2021	439	136	575	+2


YOU
CAN'T
SAVE
THE
WORLD
ALONE

Tea/Coffee Served Downstairs in Atrium

#ULTHE

TRANSFORMING HIGHER EDUCATION

Fostering collaboration between education and industry for upskilling

Rialtas na hÉireann
Government of Ireland

HCI Human Capital Initiative

Industry Co-Design and Co-Delivery

#ULTHE

Be More Janus

Professor
Gilly Salmon

CEO & Principal
Consultant
Education
Alchemists
(UK)

www.gillysalmon.com

Professor Alejandro
(Ale) Armellini

Dean of Digital and
Distributed Learning

University of Portsmouth
(UK)

www.port.ac.uk
@alejandroa

Tackling the transformation together

CREATING THE FUTURE

Design once,

Deploy many times

Co-DESIGN

Making good stakeholder based choices

STRENGTH of seminal concepts

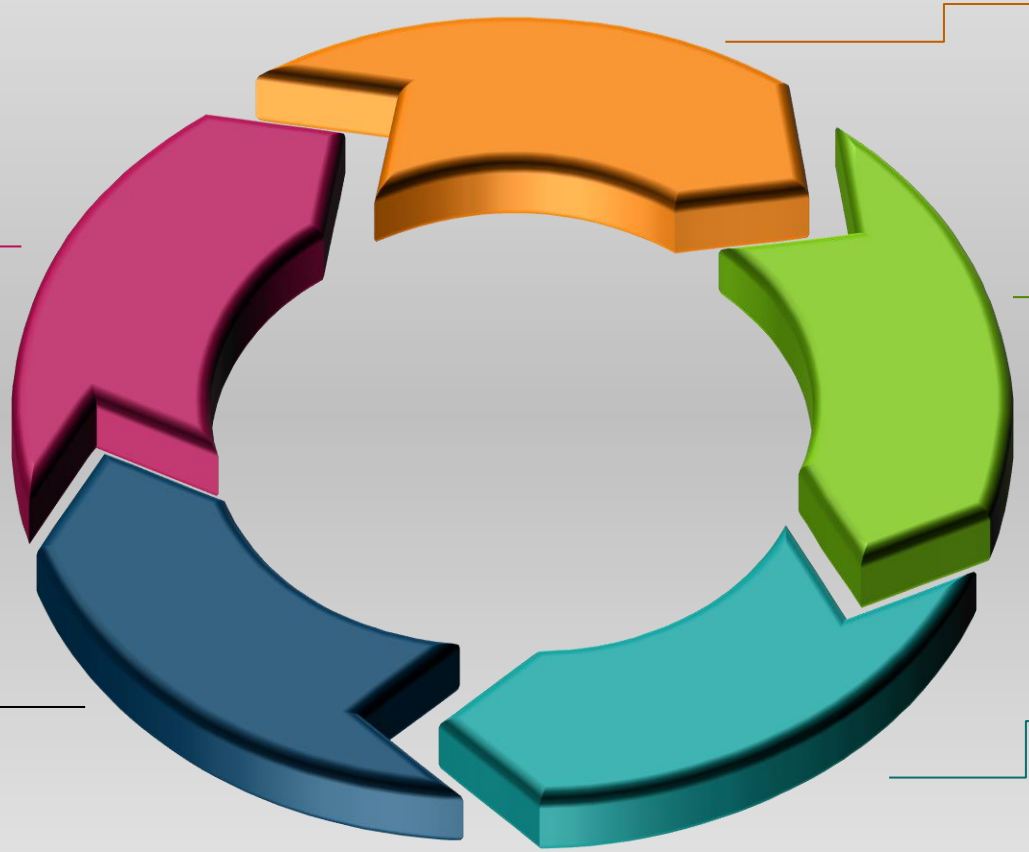
Scaffolding for achievement and retention

INDUSTRY 4.0

Graduates future ready

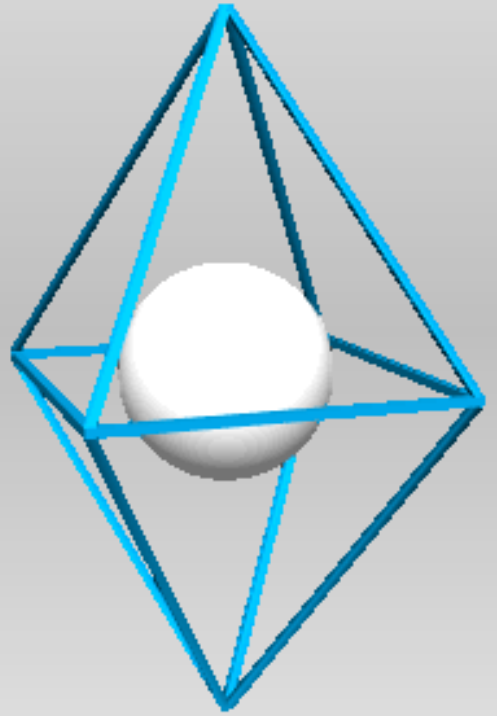
Rocking the DEPLOYMENT

New competencies, new curricula



Be More Janus. Salmon & Armellini. Limerick

Design once; deploy many times



Be More Janus. Salmon & Armellini. Limerick

Making good design choices

Scaffolding for retention & achievement

- 5 stage model.
- Storyboarding

Be More Janus. Salmon & Armellini. Limerick

6 Elements for all modes

Element 1

PACING

Element 2

KNOWLEDGE & SKILLS

Element 3

FEEDBACK & ASSESSMENT

Element 4

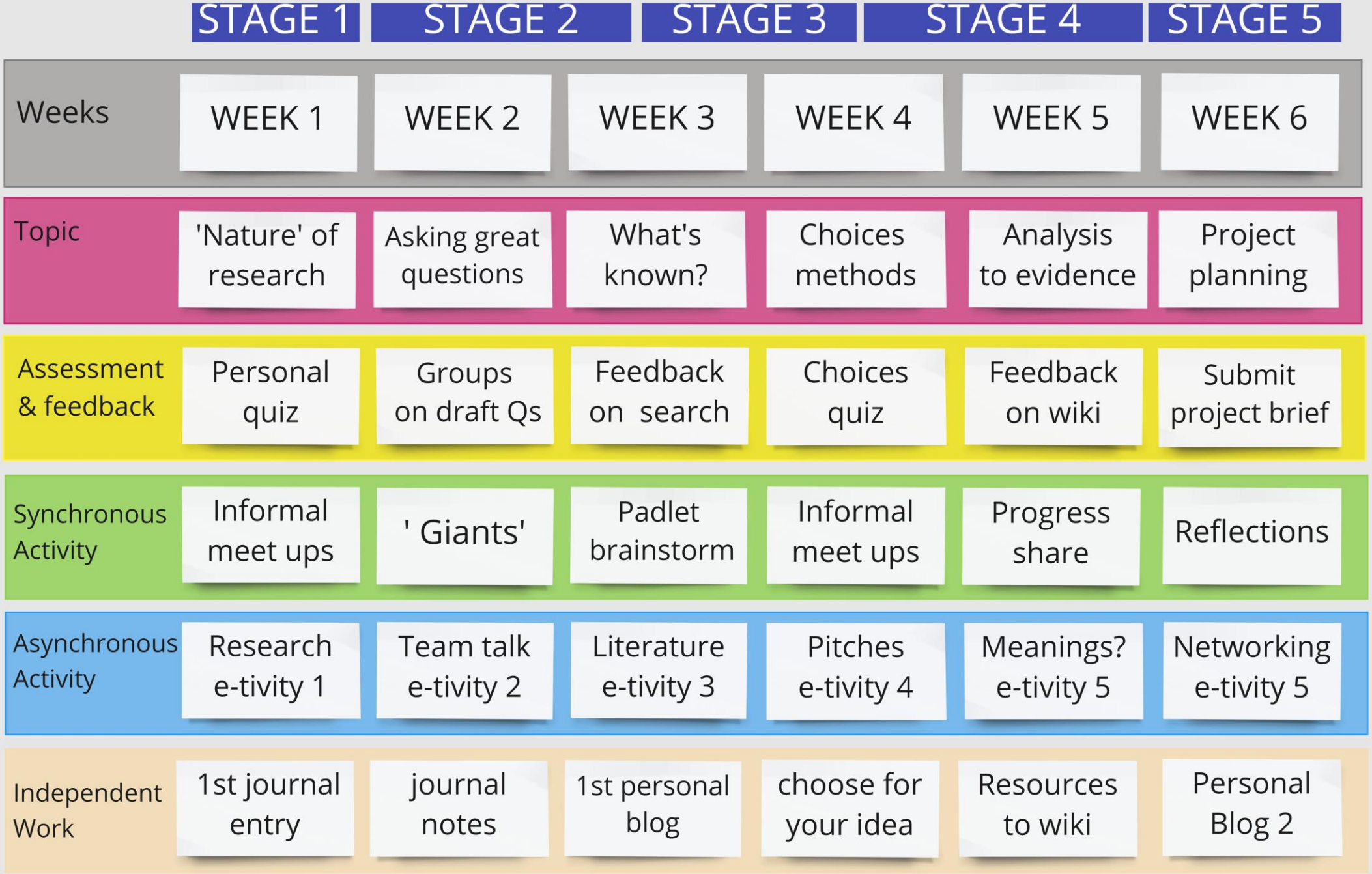
ACTIVITY : SYNCHRONOUS

Element 5

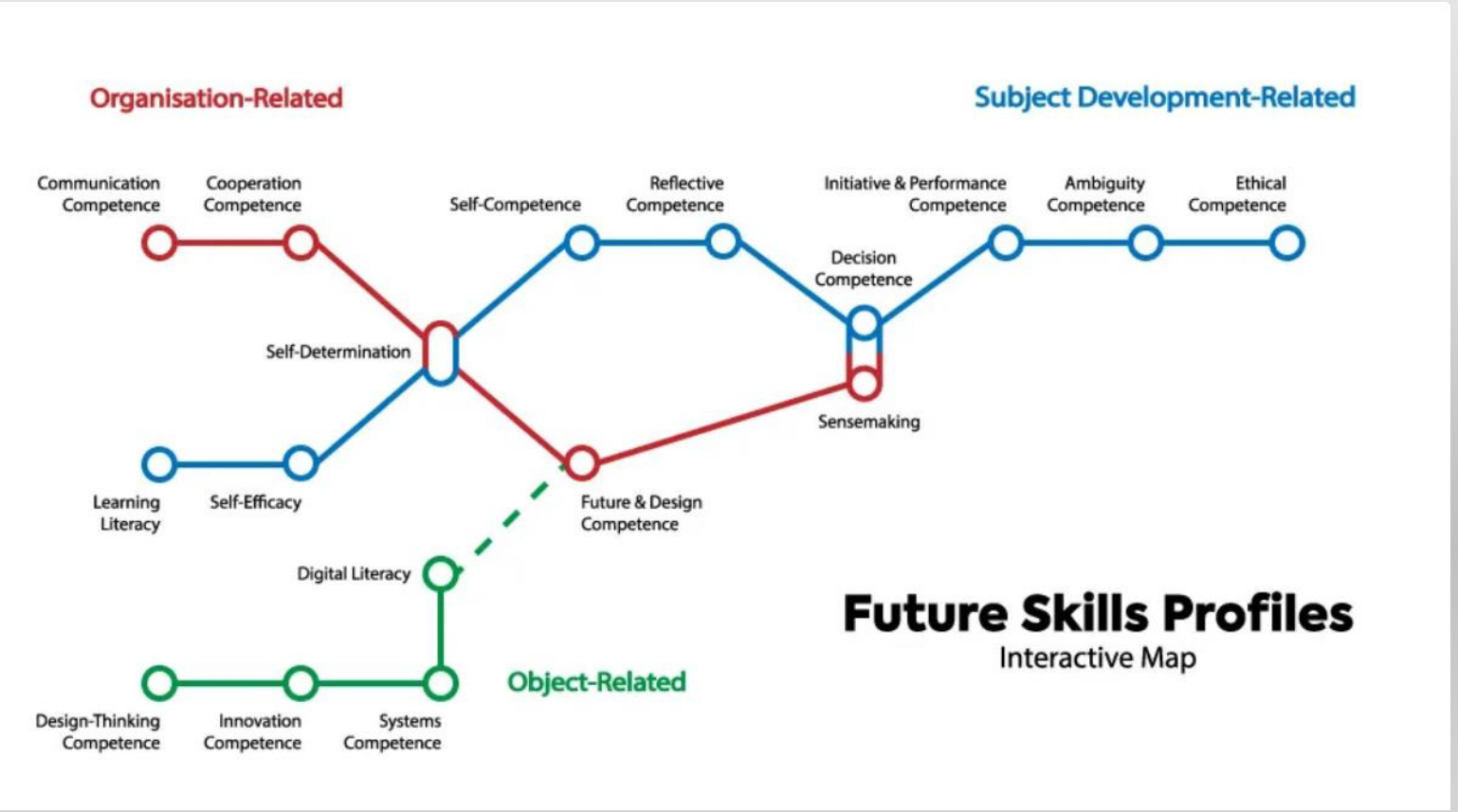
ACTIVITY ASYNCHRONOUS

Element 6

INDEPENDENT STUDY


STAGE 1
STAGE 2
STAGE 3
STAGE 4
STAGE 5
Weeks
WEEK 1
WEEK 2
WEEK 3
WEEK 4
WEEK 5
WEEK 6
Topic
'Nature' of research
Asking great questions
What's known?
Choices methods
Analysis to evidence
Project planning
Assessment & feedback
Personal quiz
Groups on draft Qs
Feedback on search
Choices quiz
Feedback on wiki
Submit project brief
Synchronous Activity
Informal meet ups
' Giants'
Padlet brainstorm
Informal meet ups
Progress share
Reflections
Asynchronous Activity
Research e-tivity 1
Team talk e-tivity 2
Literature e-tivity 3
Pitches e-tivity 4
Meanings? e-tivity 5
Networking e-tivity 5
Independent Work
1st journal entry
journal notes
1st personal blog
choose for your idea
Resources to wiki
Personal Blog 2

Graduates: future ready

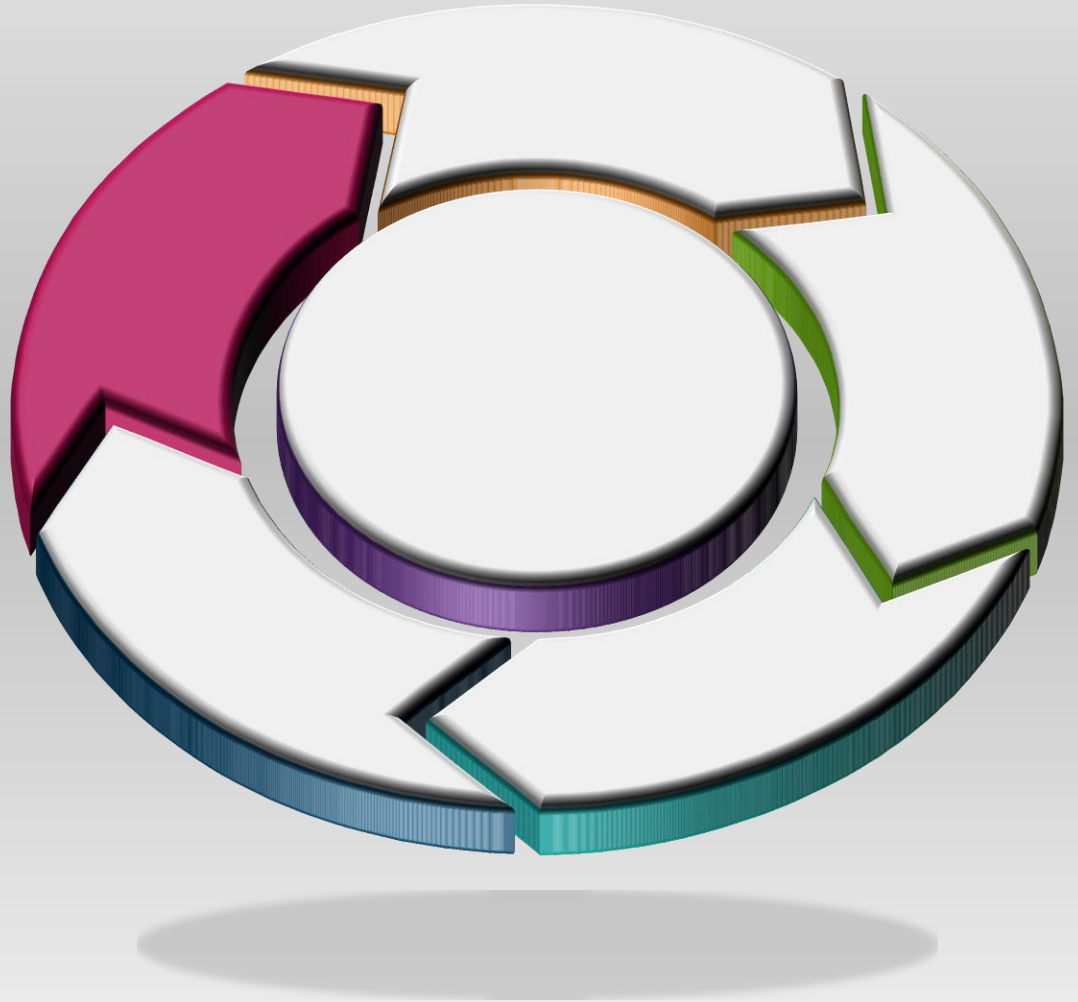


http://nextskills.org/future-skills-finder/

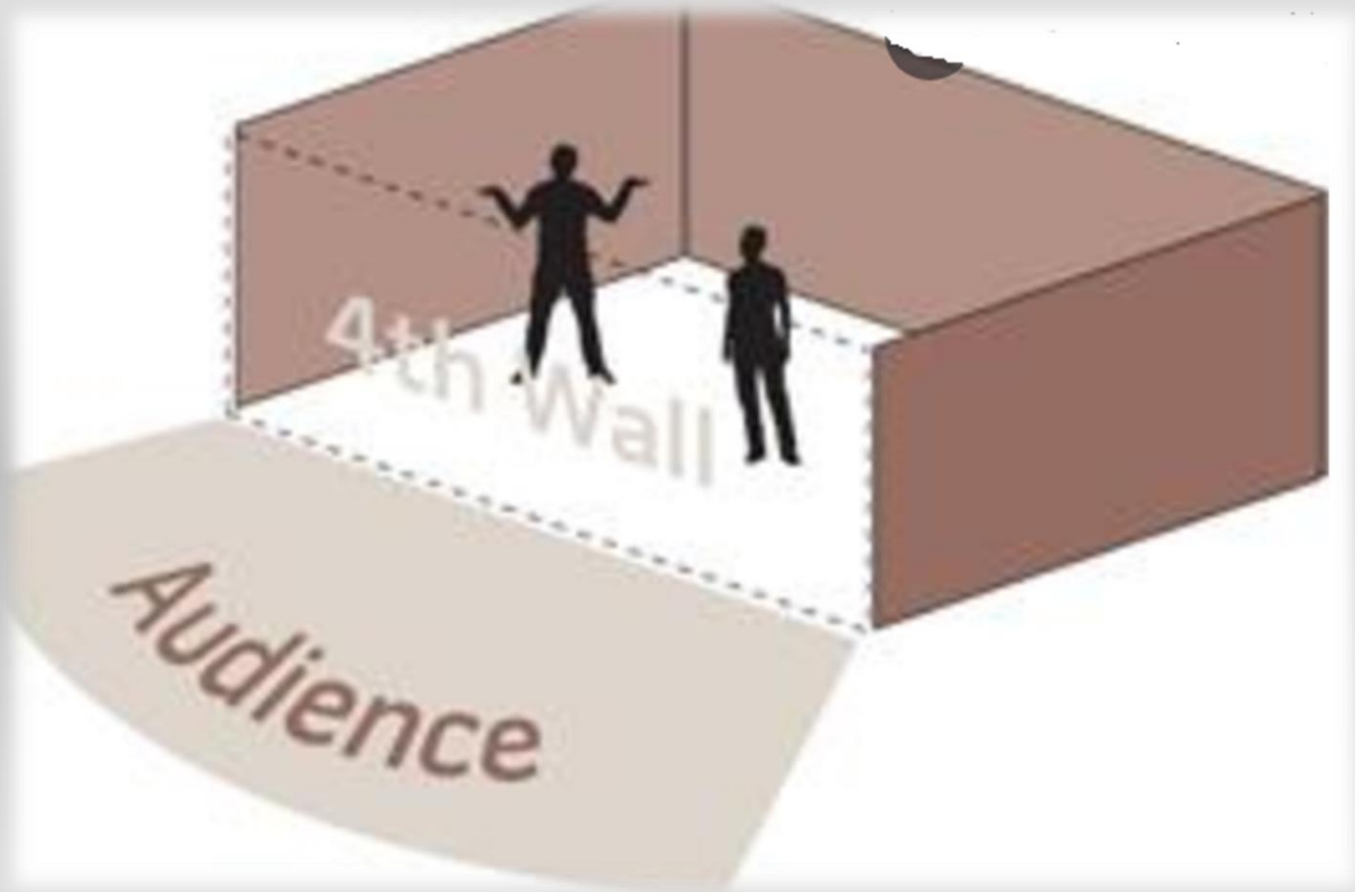
Be More Janus. Salmon & Armellini. Limerick

Rocking the deployment

- Recruitment, training, development of the online tutors/teachers/e-moderators
- Best way(s) for industry to be involved in future



New meaning of ‘presence’



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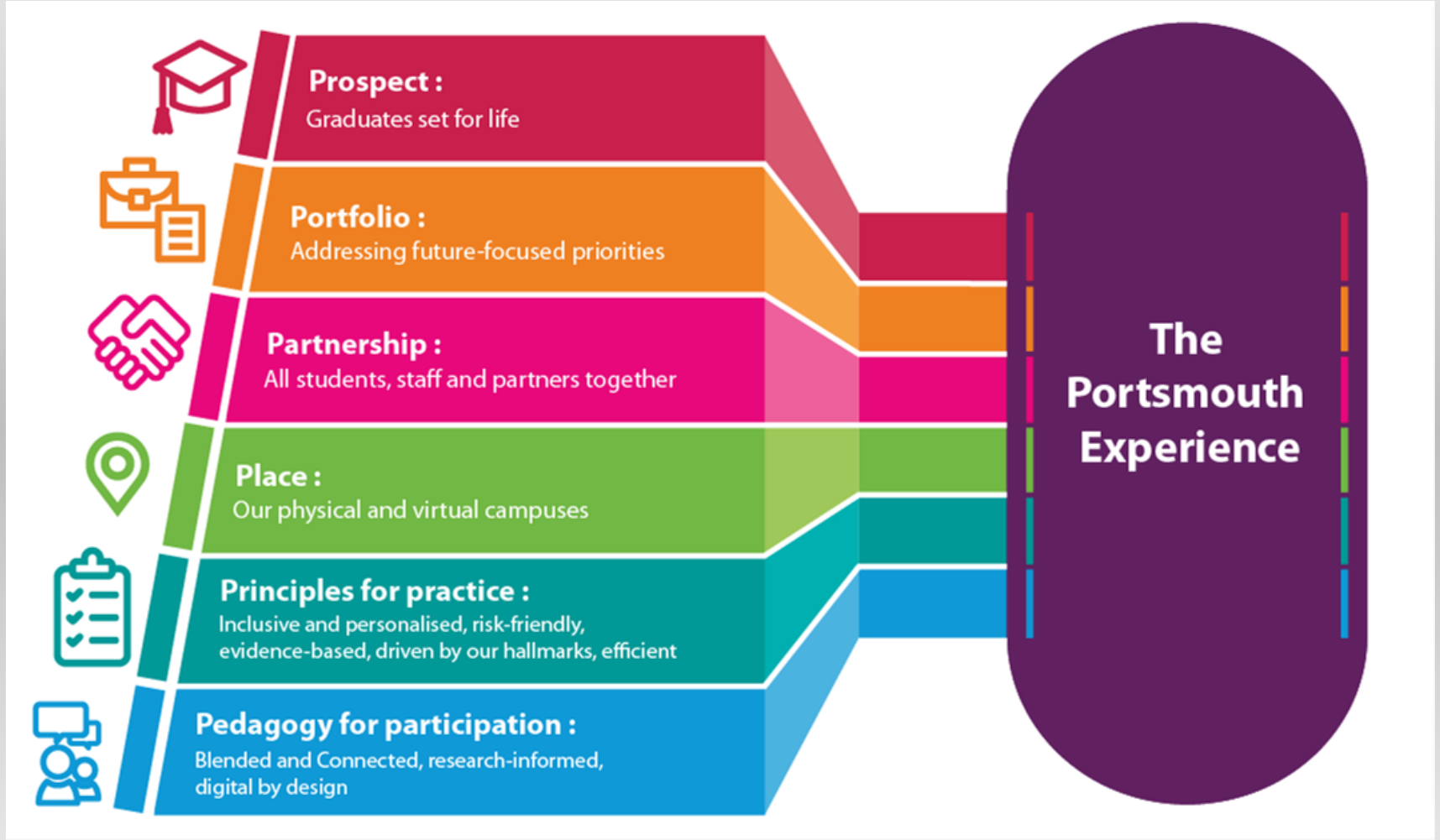
Dean of Digital and Distributed Learning

University of Portsmouth (UK)

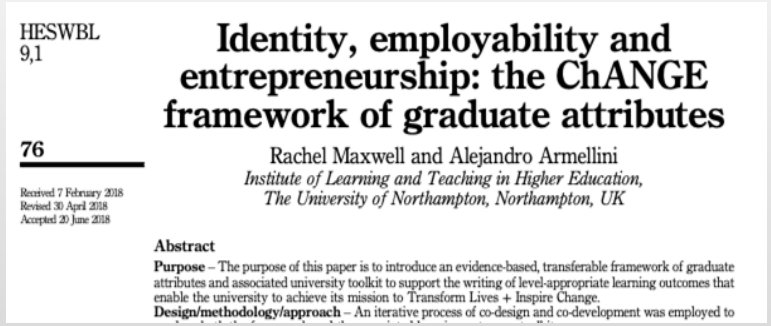
www.port.ac.uk

Digital Success Plan: the 6P framework



Lessons learned from co-designing with employers & industry partners

Positive	Less positive
Real-world look and feel	Focus on skills, often to the detriment of knowledge
Authenticity: resources, assessment, application	Limited pedagogic repertoire: “tell them” approach
Decision making that matters	Need for developing meta-cognition not always considered or understood
“Continuous assessment on the shop floor” built into the course	Suggestions often context- or industry-specific
Emphasis on collaboration, practice, production and performance	Concerns about academic rigour and views on research
Clear sense of changing industry demands and pressures	



HESWBL
9,1

76

Received 7 February 2018
Revised 30 April 2018
Accepted 20 June 2018

Identity, employability and entrepreneurship: the ChANGE framework of graduate attributes

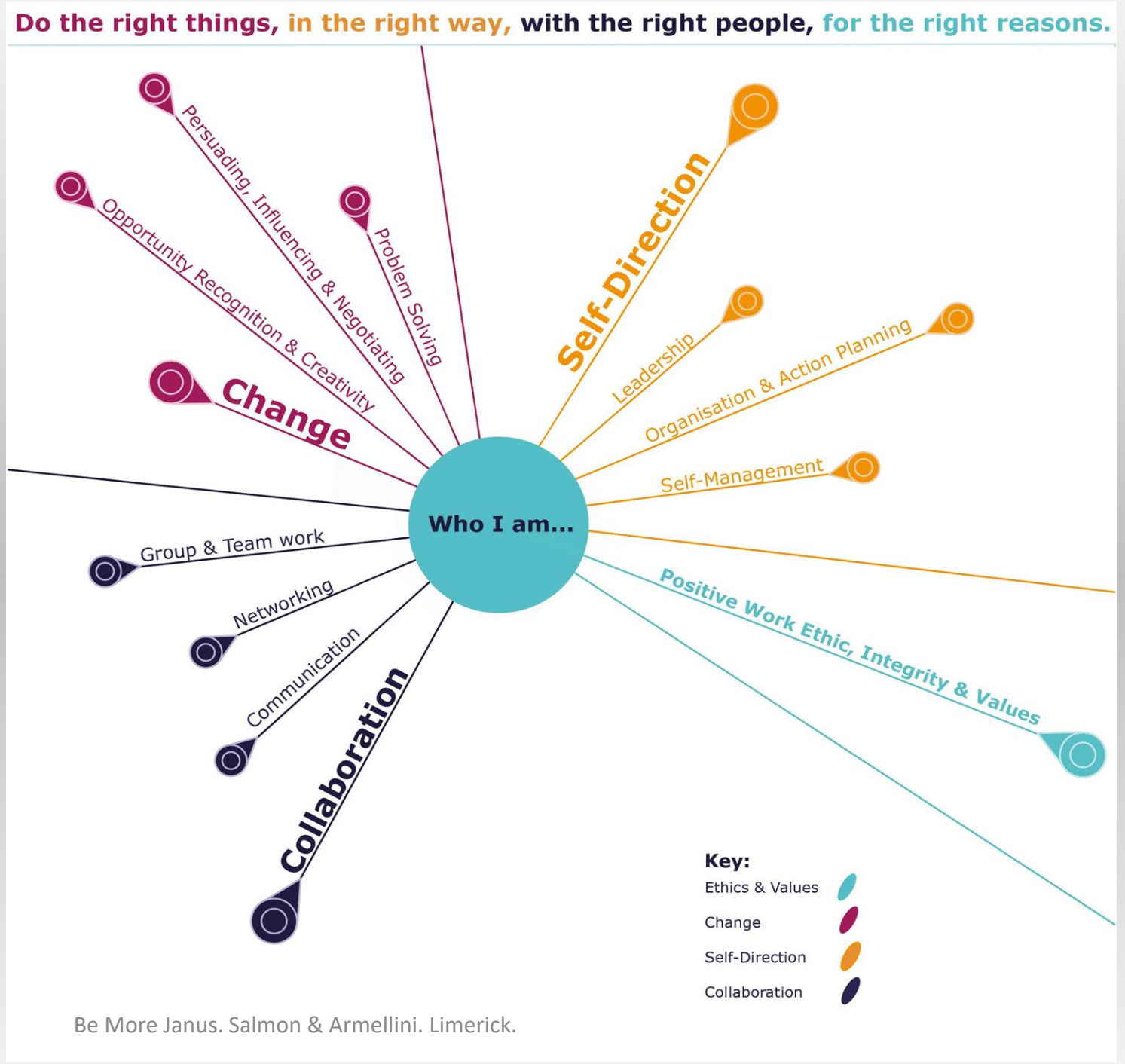
Rachel Maxwell and Alejandro Armellini
Institute of Learning and Teaching in Higher Education, The University of Northampton, Northampton, UK

Abstract

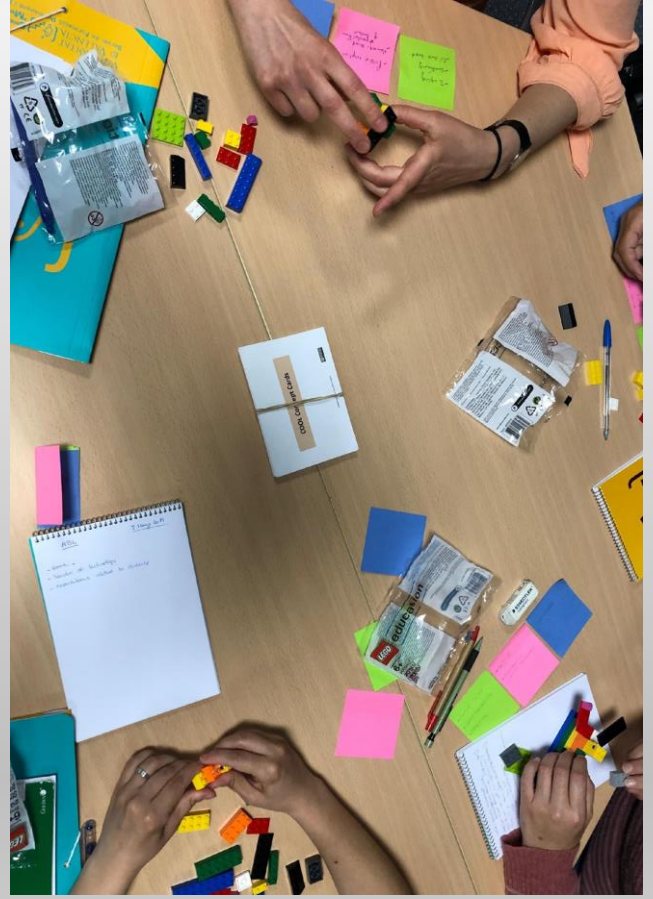
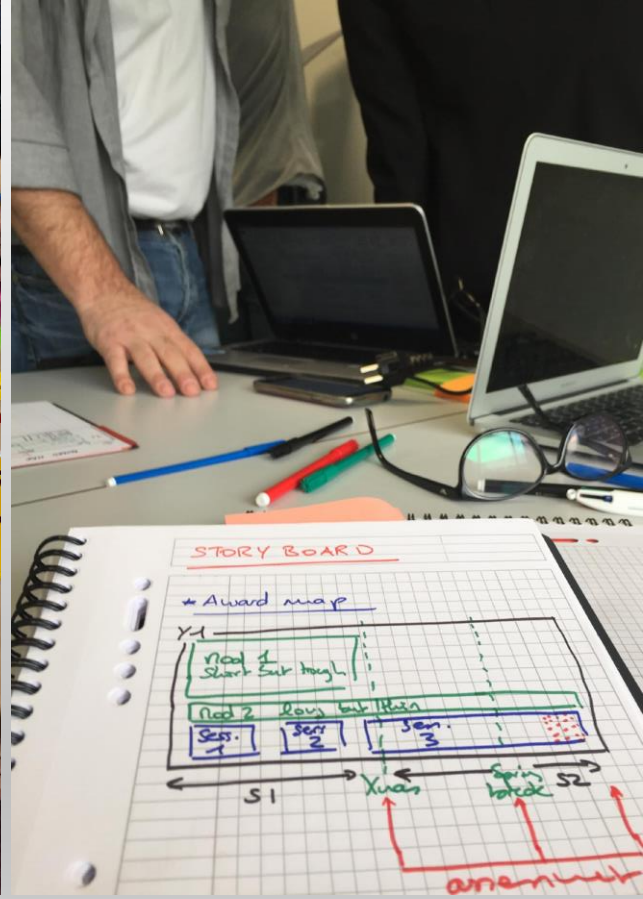
Purpose – The purpose of this paper is to introduce an evidence-based, transferable framework of graduate attributes and associated university toolkit to support the writing of level-appropriate learning outcomes that enable the university to achieve its mission to Transform Lives + Inspire Change.

Design/methodology/approach – An iterative process of co-design and co-development was employed to

Maxwell, R. & Armellini, A. (2019) Identity, employability and entrepreneurship: the ChANGE framework of graduate attributes. *Higher Education, Skills and Work-Based Learning*, *9*(1), 76-91. Available from https://doi.org/10.1108/HESWBL-02-2018-0016





Carpe Diem, CAIeRO, ABC and enABLe:

Team-based, scalable course design and co-creation within a staff-student-employer partnerships

Blended and connected learning

Blended and connected learning, Portsmouth's approach to learning and teaching, means that students engage with their studies…

- through activities that enable them to take ownership of and critique new concepts, ideas and feedback;
- in and outside the classroom, synchronously and asynchronously, individually and in teams;
- for the development and application of subject knowledge, professional and digital skills.

Themes	Stop	Start	Continue
Learning Materials	Uploading poor quality materials	Using co-creation to improve consistency and student engagement	Promoting meaningful interactions (student-student, student-tutor and student-content)
Synchronous (real-time activities)	Running long online sessions	Managing student expectations about learning and teaching in an active blended learning environment	Providing a rationale to students for the role of real-time sessions and setting expectations about pre-engagement
Asynchronous work	Assuming that all asynchronous work is “independent study”	Scaffolding group work, including addressing group cohesion issues	Evaluating appropriate blends, in partnership, where synchronous and asynchronous elements are mutually reinforcing

Adapted from Armellini, Dunbar-Morris, Barlow & Powell, 2022

Tackling the transformation together

CREATING THE FUTURE

Design once,

Deploy many times

Co-DESIGN

Making good stakeholder based choices

STRENGTH of seminal concepts

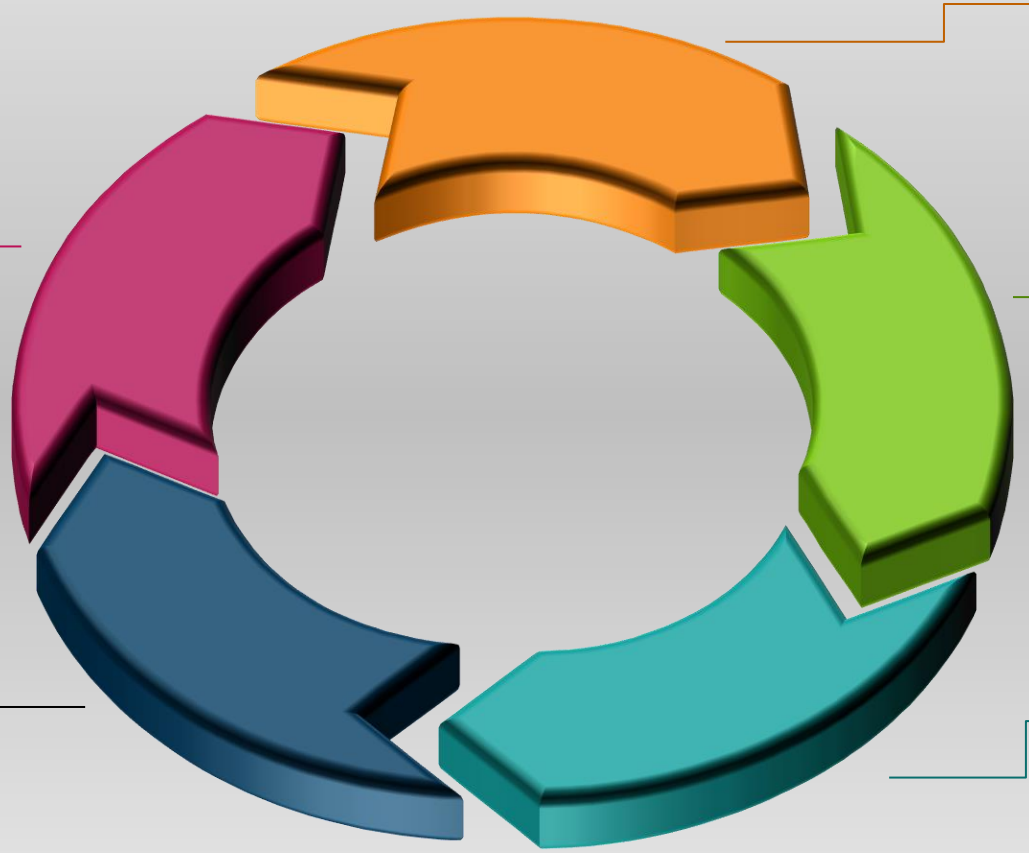
Scaffolding for achievement and retention

INDUSTRY 4.0

Graduates future ready

Rocking the DEPLOYMENT

New competencies, new curricula



Be More Janus. Salmon & Armellini. Limerick

Be More Janus

Professor
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Thanks for taking part

UL's Student Voice

#ULTHE

Fireside chat: Reflections on UL innovation in transforming education in the last 50 years

#ULTHE


oh! but don't touch it!
ARENDELLEKINGDOM.TUMBLR

Lunch – we return at 2pm sharp!

Shaping the Future of Micro-Credentials

#ULTHE

Transforming the Nation's **Credentialing System**

Value Proposition for Microcredentials

Dr. Nan Travers
Center for Leadership in Credentialing Learning
SUNY Empire State College, USA

CREDENTIAL AS YOU GO

Nan.Travers@esc.edu

WHY?

Why are we doing this?

CREDENTIAL AS YOU GO

Global Tertiary Educational Attainment

OECD Countries

Attainment

- 48% increase enrollment in 2021
- 39.15% average attainment rates

Unemployment rates

- Tertiary 4%
- Upper Secondary 6%
- Below Upper Secondary 11%

Average Earnings

- Tertiary vs. Upper Secondary 50% more
- Tertiary vs. Below Upper Secondary – almost 100%

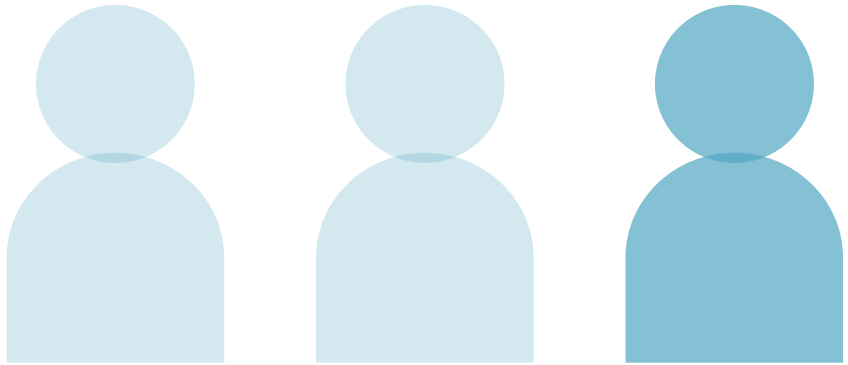
Non-attainment Attainment

https://www.oecd-ilibrary.org/sites/3197152b-en/index.html?itemId=/content/publication/3197152b-en

https://www.statista.com/statistics/1227287/share-of-people-with-tertiary-education-in-oecd-countries-by-country/

CREDENTIAL AS YOU GO

Postsecondary Attainment in the U.S.



2 out of 6
Upper secondary or below

1 out of 6
some college
no credential

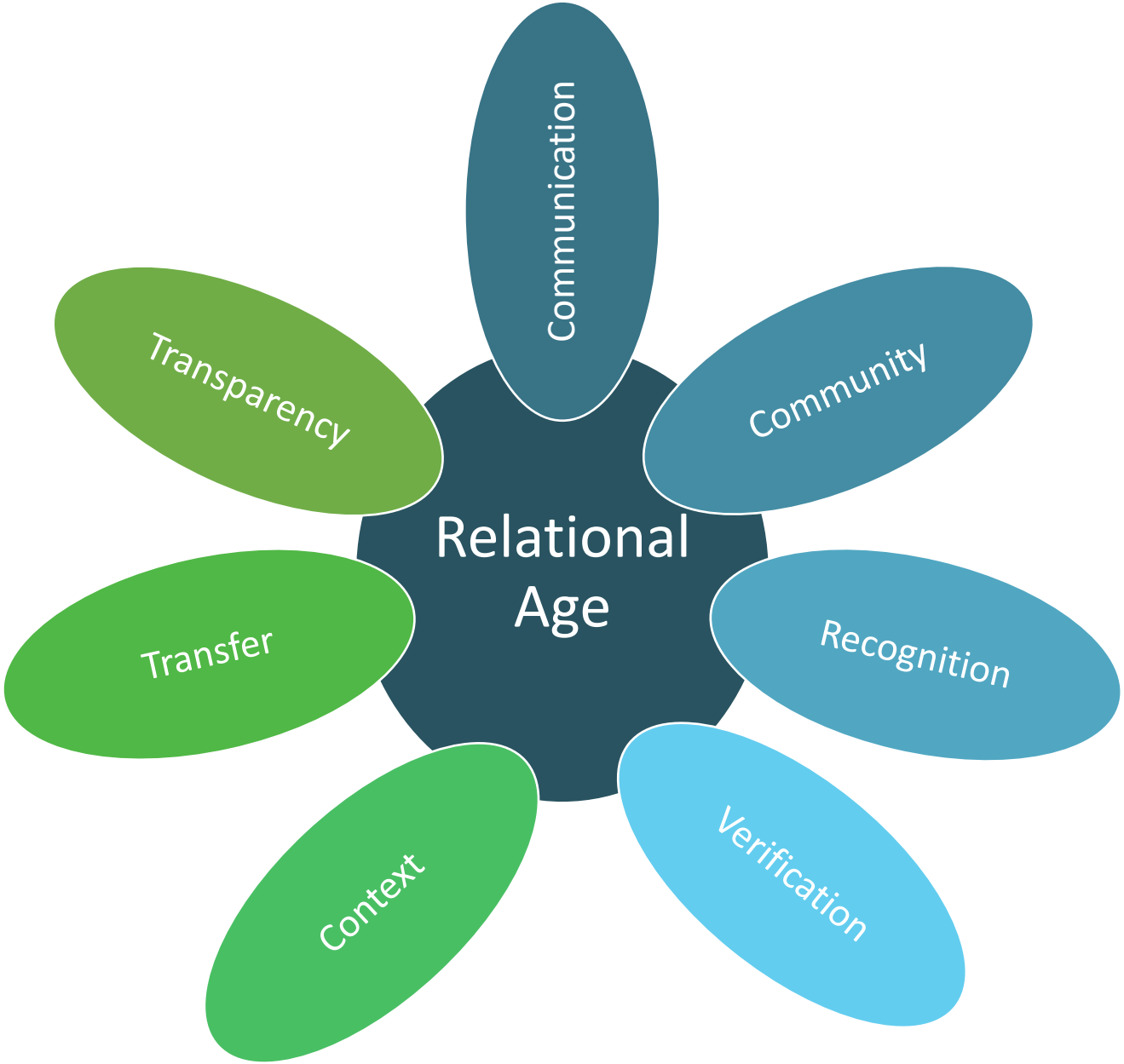
3 out of 6 have a college credential

White – 71%
Black – 10%
LatinX - 10%
Asian – 9%

Source: Data based on 224.5M adults 25 years and older (Acquired from U.S. Census Bureau 2021)

CREDENTIAL AS YOU GO

People, with their knowledge & skills, are in relationship to others and the world around them – greater need to connect learning across work, life, and school.



Nominological Networks – the relationship across concepts provides construct validity

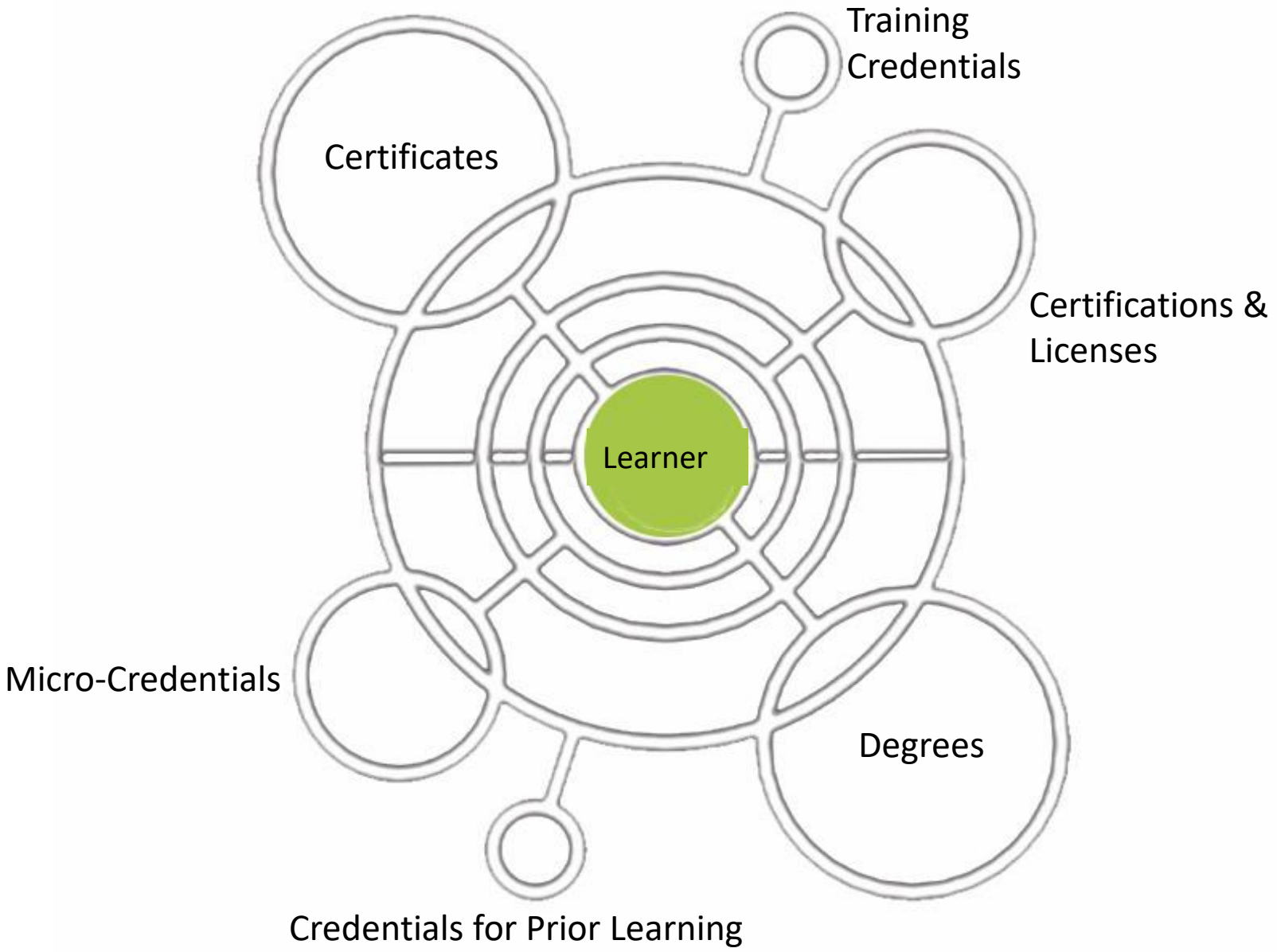
Learning Recognition encompasses all the ways we recognize that someone has knowledge and skills

DO YOU SEE WHAT I SEE?
DO YOU KNOW WHAT I KNOW?

Credentials

Provides validated recognition of knowledge and skills

CREDENTIAL AS YOU GO



Learning Recognition Credentialing System

Captures learner's cycles of living, learning and working

CREDENTIAL AS YOU GO
INCREMENTAL CREDENTIALING

Three Funding Phases

CREDENTIAL AS YOU GO

Rapid Prototyping

- Three States
  21 Institutions
- Additional States & Institutions

Research

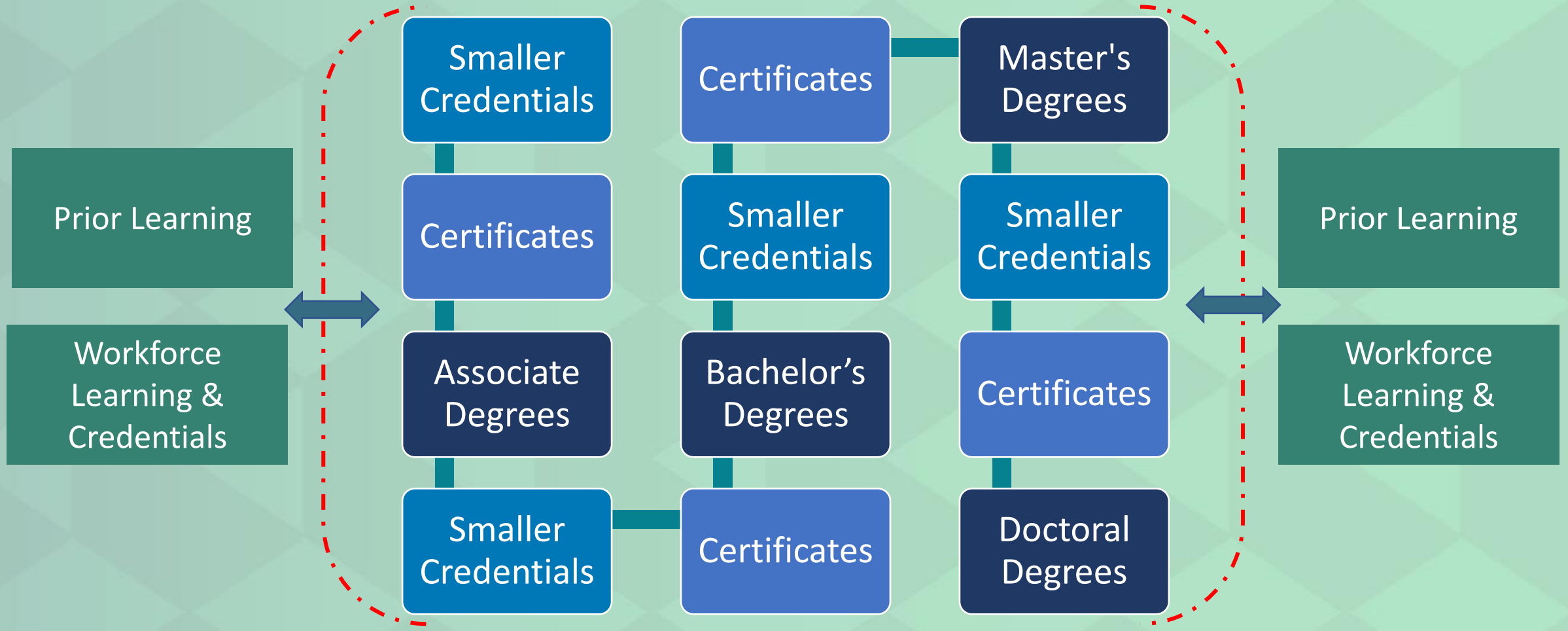
- Feasibility of Framework
- Learner Outcomes

National Campaign

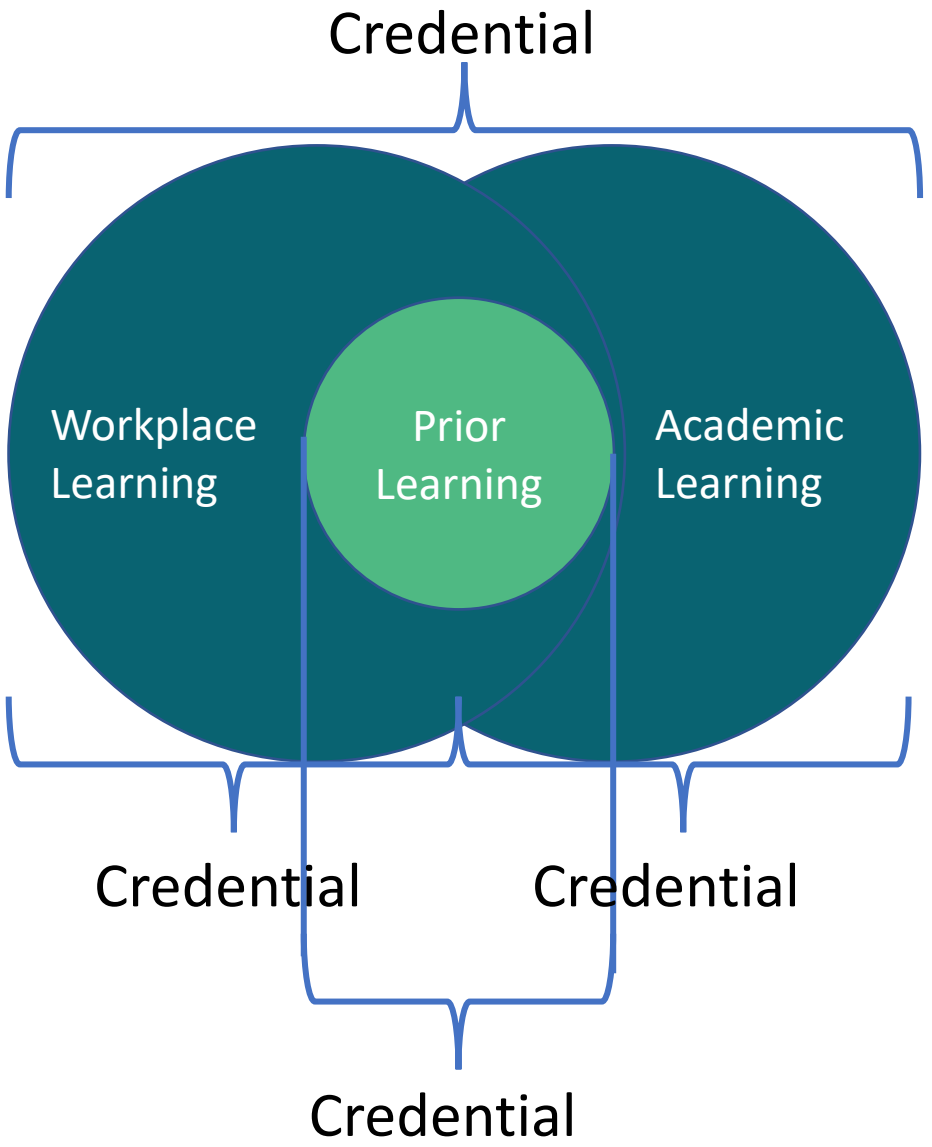
- Learn & Work Ecosystem Library
- Website
  Tools & Resources

www.credentialasyougo.org

Incremental Credentialing

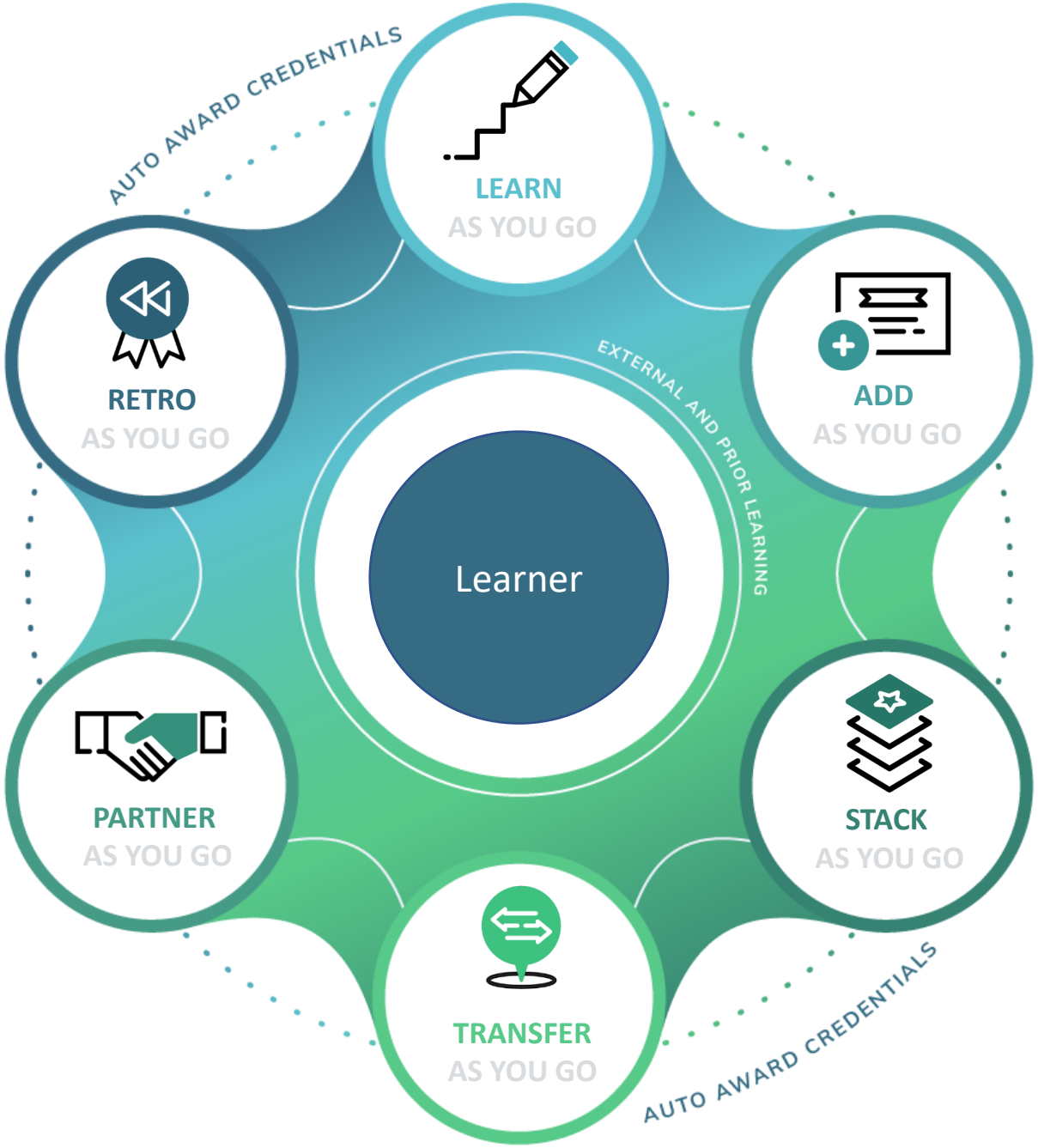


Prior Learning embedded within credentials



Incremental Credentialing Framework

- Six approaches to developing incremental credentials
- They overlap and build on each other.



Incremental Credentialing Framework

LEARN AS YOU GO

- Incremental credentials are gained on their own for professional development
- May or may not be part of a degree pathway

ADD AS YOU GO

- Incremental credentials are gained for specializations while working on a degree or certificate
- May or may not be part of a degree pathway

STACK AS YOU GO

- Incremental credentials stack into degrees
- Non-Credit, Microcredentials, Certificates, Skills Badges, Licenses, Certifications, Degrees, and others

TRANSFER AS YOU GO

- Incremental credentials are part of academic transfer pathways
- May be a cost- sharing strategy to gain credentials across institutions

PARTNER AS YOU GO

- Incremental credentials part of employer partnership
- Credentials gained in workplace are part of a pathway and pathways prepare for workplace credentials

RETRO AS YOU GO

- Incremental credentials are awarded retroactively
- Credentials are awarded for learning already acquired

Credential Areas Year 1

Healthcare

Medical Lab Technology (multiple)
Medical Assistant
Healthcare Management
IV Delivery
Fundamentals of critical care
Behavioral Health

Education

Teaching Assistant Level II
Teaching Assistant Level III
Paraeducators certificate
Empowering Teaching and Learning Program
Excellence in online teaching certificate
Child Development

Culinary

Food and Beverage Standards of Service
Baking Fundamentals

STEM

IT Professional
IT Powerpacks (multiple)
Engineering

Student Success
Peer Mentor Program
Cannabis

Business

Dynamics of Non-Profit Board Engagement
Women in Corporate Leadership
Front Office Management
Advanced Front Office Management
Project Management
Global Business and Transportation
Modern Industrial Practice
Apprenticeships with Partners
Claims Examiner

Emergency Services

Criminal Justice: Police Department Training
Emergency Management: Paramedic Pathway

Veterinary

Veterinary Technician Fear-Free Certificate
Grooming, Pet Sitting, and Training

Emerging Themes

- Student demand
- Increased enrollment
- Workforce preparation & integration
- Recognition of 21st century & field specific skills
- Transfer and stackables

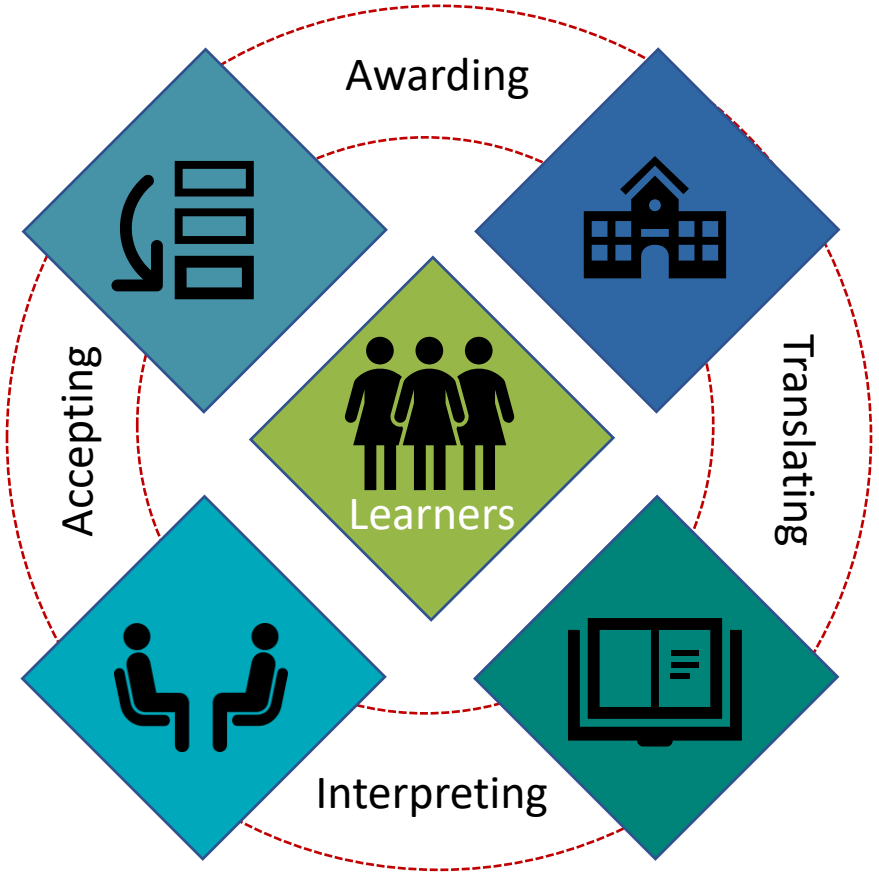
Technology Directions that Support Incremental Credentialing

COMPREHENSIVE LEARNER RECORDS/LEARNER EEMPLOYEMNT RECORDS

- Transcription of employment, academic, and additional knowledge, skills, and competencies
- Credit and Non-credit, Licenses, Certificates, Certifications, Degrees, and other credentials
- Badges & Credentialing Systems

EMPLOYER RECORDS

- HR Systems
- Learning Management Systems



Common Language & Standards, and Interoperability

INSTITUTIONAL RECORDS

- Credential Planner & Builder
- Enterprise Systems - Unit Record Data, Auditing
- Learning Management Systems

NATIONAL REGISTRY SYSTEMS

- Skills & Credential Registries
- Skills and credential definitions
- Access to metadata

Thank You!!

Nan.Travers@esc.edu

All photos are open source downloaded from Unsplash.com

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TRANSFORMING
HIGHER EDUCATION

Fostering collaboration between education and industry for upskilling

Register Now

Rialtas na hÉireann
Government of Ireland

HCI Human Capital Initiative

Micro-credentials: meeting the challenge of assessment & integration

Associate Professor Josephine Lang, University of Melbourne, Australia
josephine.lang@unimelb.edu.au

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Overview

- What has assessment got to do with micro-credentials in Higher Education?

- Framing challenges and opportunities from
  - Macro perspectives
    - call for integrating systems *through* assessment
  - Micro perspectives
    - a case study Melbourne MicroCerts
  - Meso perspectives
    - building knowledge and practice

Image: Ross Sneddon published on Unsplash, 4 May 2020

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Why focus on assessment?

UNESCO: Towards a common definition of micro-credentials (Oliver, 2022)

Micro-credentials are often promoted as an efficient way to upskill workers across the lifespan

A micro-credential:

•Is a record of focused learning achievement verifying what the learner knows, understands or can do.

•Includes assessment based on clearly defined standards and is awarded by a trusted provider.

•Has standalone value and may also contribute to or complement other micro-credentials or macro-credentials, including through recognition of prior learning.

•Meets the standards required by relevant quality assurance

(Oliver, 2022, p.6)

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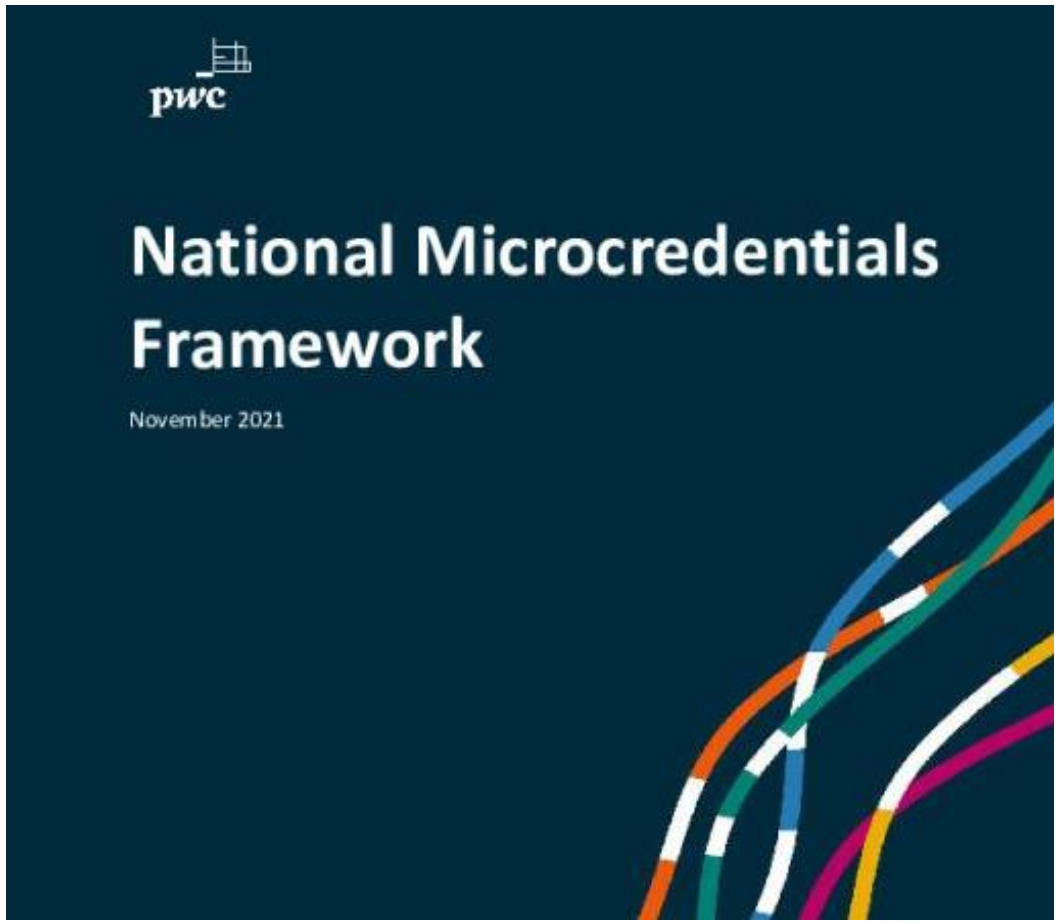
Defining within the Australian context

...microcredentials as a certification of assessed learning or competency, with a minimum volume of learning of one hour and less than an AQF award qualification, that is additional, alternate, complementary to or a component part of an AQF award qualification.

Unifying principles underpinning the definition:

- Outcome-based
- Responsive to industry-need
- Tailored to support lifelong learning
- Transparent and accessible

(DESE, 2022, pp.9-11)



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Call for integration of systems *through* assessment

Challenges for players in the micro-credential ecosystem	Opportunities: Partnerships & frameworks
Students as lifelong learners: working learners	Students as Partners movement – enhancing learning transferability?
Meaningful collaboration on needs for up/re skilling workforce	HE co-design with Industry/ employers – increasing the validity of assessment?
HE recognition of diverse learning, supporting quality	Academic regulatory frameworks: governance and quality
Expanding the players in the ecosystem	EdTechs providing e-solutions to surface skills in metadata; Government – policy levers to support working learners
Defining skills, knowledge & dispositions	Skills frameworks to support development of Rich Skill Descriptors

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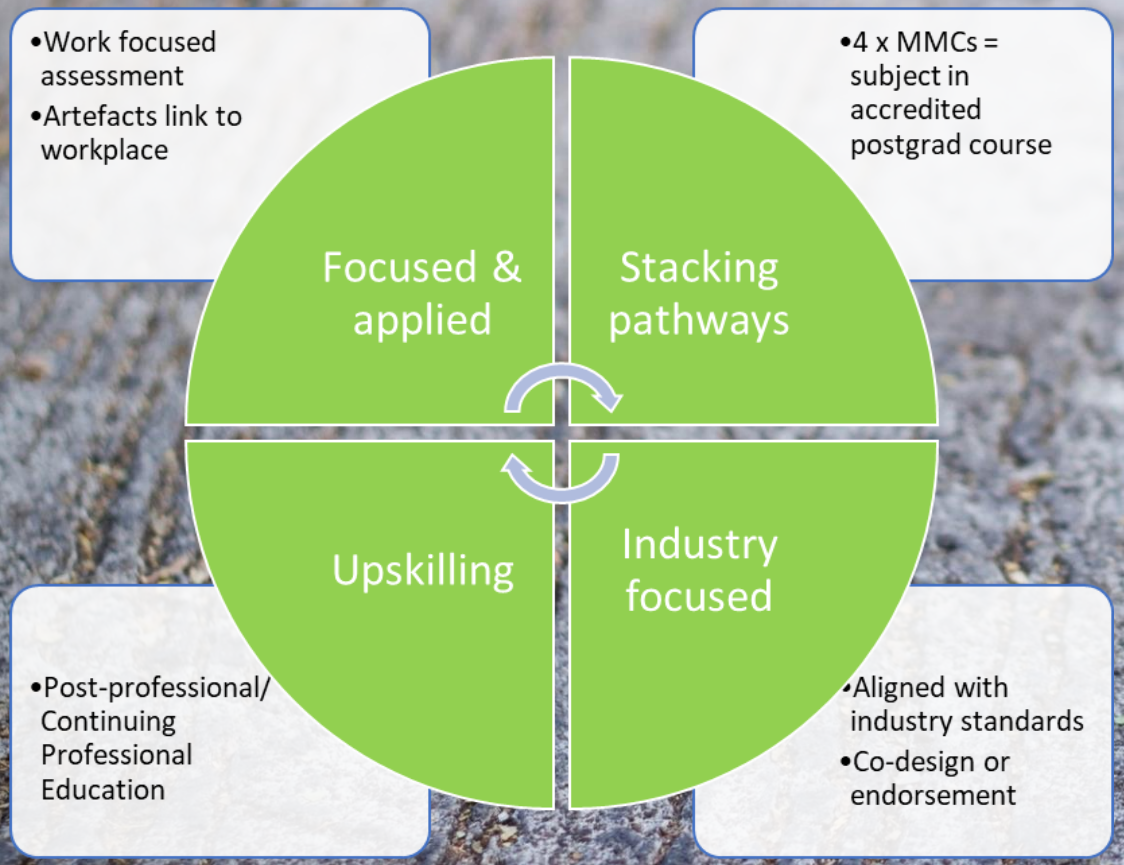
Case Study: Melbourne MicroCerts

Key design principles shaping assessment



Strategic Social and Sustainable Procurement Melbourne MicroCert

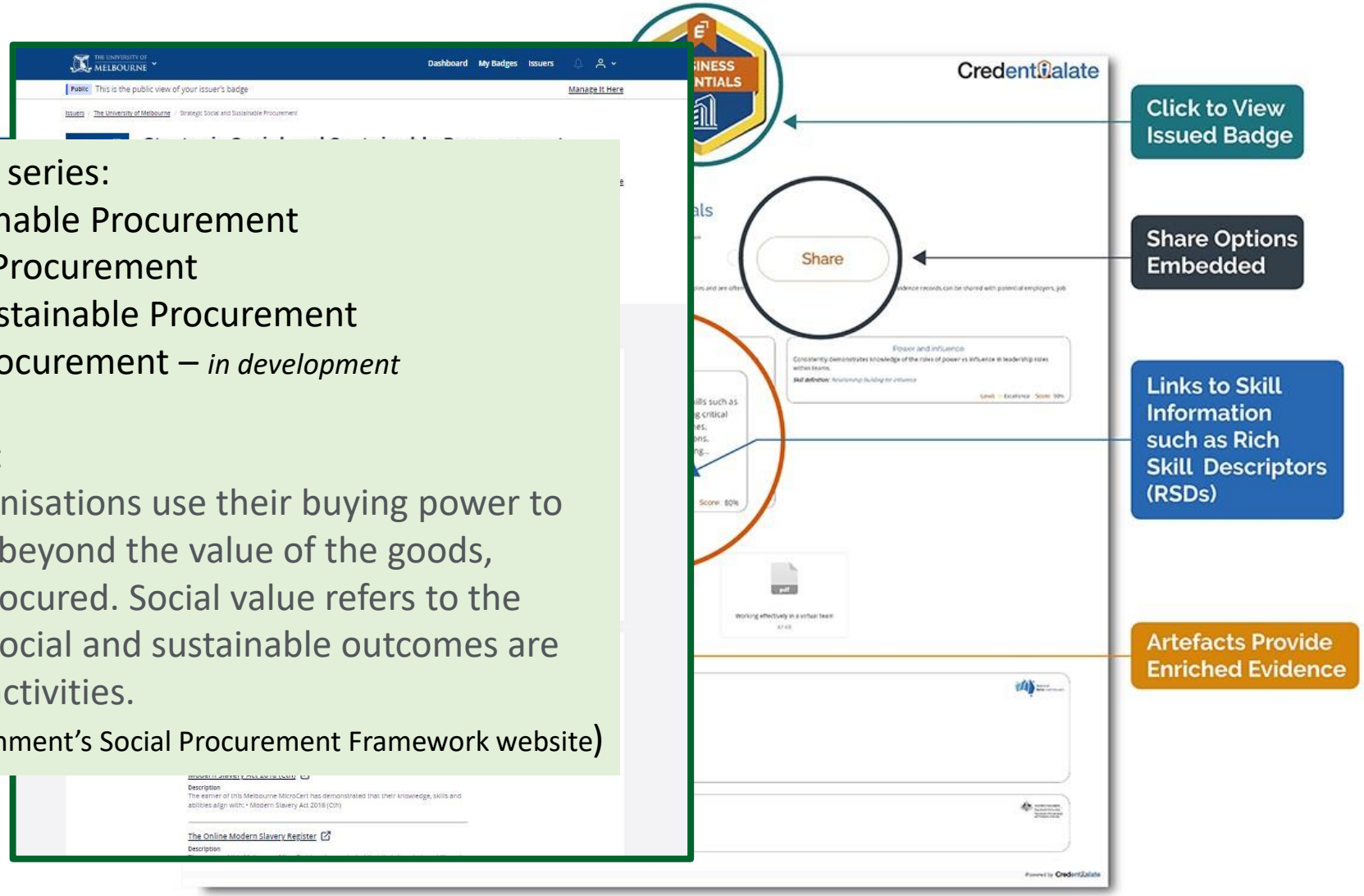
Social and Sustainable Procurement series:

- Foundations of Social and Sustainable Procurement
- Strategic Social and Sustainable Procurement
- Implementation of Social and Sustainable Procurement
- Creating Value through Public Procurement – *in development*

Aligned with Industry framework(s):

Social procurement is when organisations use their buying power to generate social value above and beyond the value of the goods, services or construction being procured. Social value refers to the benefits for all Victorians when social and sustainable outcomes are achieved through procurement activities.

(Victorian Government's Social Procurement Framework website)



Edalex – Credentialate

Building our knowledge & practice: micro-credential assessment

2015-2022 period

622 entries (micro-credentials)

49 entries (+assessment)

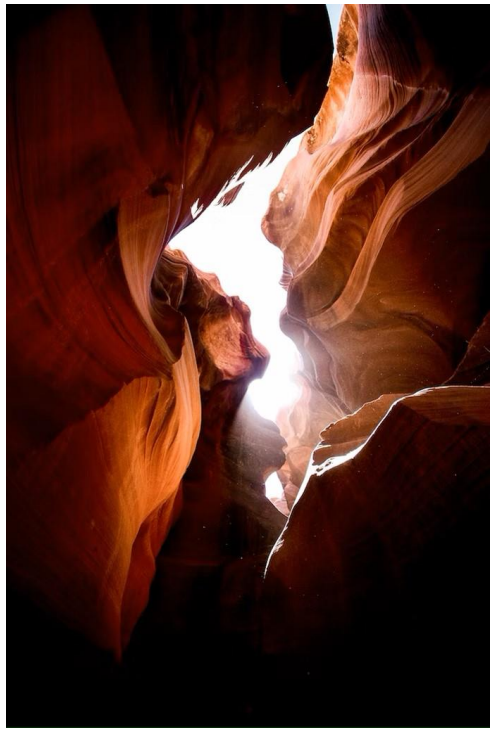


Image: Jeremy Bishop published on Unsplash, 11 Oct 2017

The main deficiencies identified in university courses were not related to teaching and learning, but to assessment practices.

(Boud & Falchikov, 2006, p. 402)

Braxton (2022)'s call for a micro-credential taxonomy>shared meaning

- Bloom's cognitive taxonomy; Dreyfus model of skills stages; and workplace's KSA

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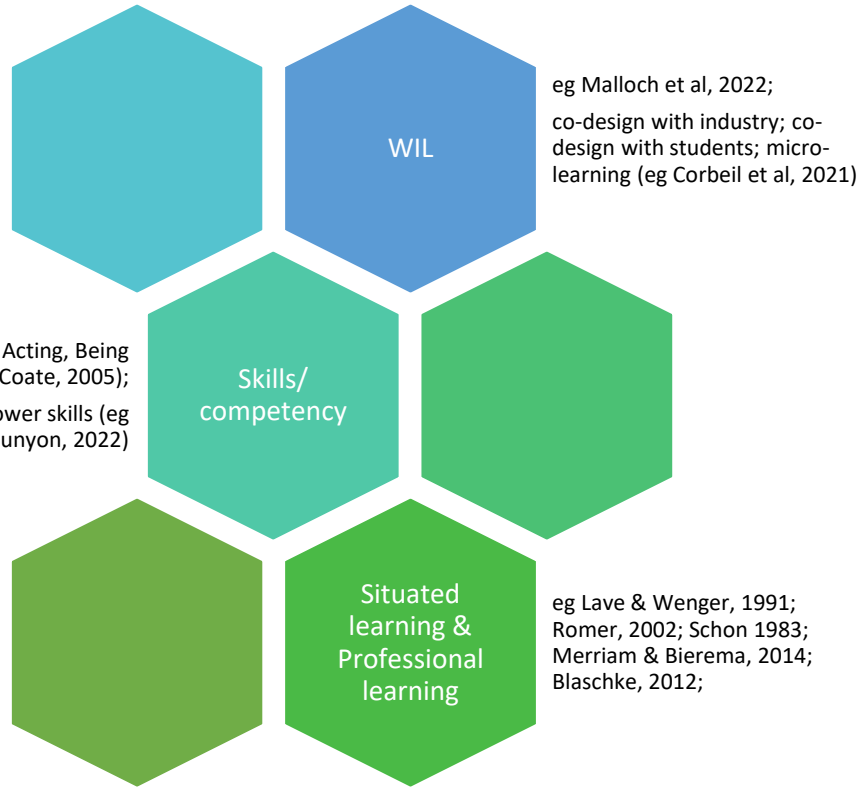
Building our knowledge & practice: micro-credential assessment

shaping our assessment

knowledge

practice

Image: ThisisEngineering RAE
published on Unsplash, 8 Feb 2020



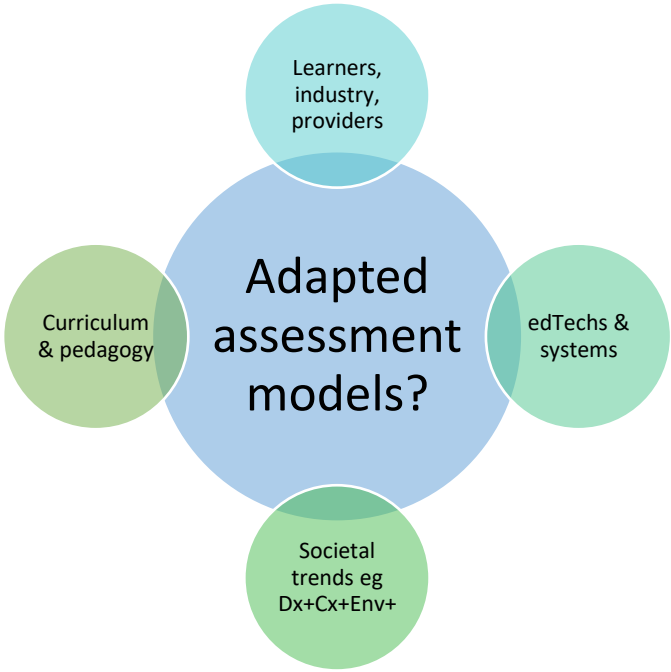
eg Malloch et al, 2022;

co-design with industry; co-design with students; micro-learning (eg Corbeil et al, 2021)

Knowing, Acting, Being (Barnett & Coate, 2005);

technical & power skills (eg Runyon, 2022)

eg Lave & Wenger, 1991; Romer, 2002; Schon 1983; Merriam & Bierema, 2014; Blaschke, 2012;



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University of Melbourne's micro-credential offering - Melbourne MicroCerts portfolio

- *Strategic Social and Sustainable Procurement* Melbourne MicroCert – study information

Parliament of Victoria (Australia) Legislative Assembly, Economy and Infrastructure Committee: *Inquiry into Victorian universities' investment in skills* (1 Sept 2022)

Social Procurement Framework, Victorian Government (Australia) website; *Victoria's social procurement framework: Building a fair, inclusive and sustainable Victoria through procurement* (2018)

Edalex an EdTech company whose platforms surface skills; Credentialate platform: for more information on *Learner Evidence Records*

- If you're interested in learning more about Students as Partners (SaP) a good place to start may be: *International Journal for Students as Partners* hosted by McMaster University's (Ontario, Canada) Paul R. MacPherson Institute for Leadership, Innovation and Excellence in Teaching.
- images are from Unsplash (as cited) or Microsoft PowerPoint's library of images

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Professional Development at Scale and the Role of Modern Public University: *Towards the Future of Traditional Universities*

UNIVERSITY of LOUISIANA LAFAYETTE®

School of Computing and Informatics

Prof.-Dr. Martin Margala, Director

Professional Development at Scale and the Role of Modern Public University:

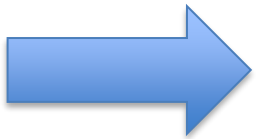
Towards the Future of Traditional Universities

Motivation

- Meeting the Societal Needs
- Increasing Social Mobility across the entire population spectrum
- Meeting the Labour Market Needs across Many Industries
- Building a Sustainable Society

•Louisiana's annual gross domestic product is $257 billion. (2021 population 4.624 mil)
•A quarter of all seafood consumed in the United States is fished from Louisiana waters.
•Louisiana is home to the highest number of oil refineries per capita in the United States.

Agriculture and Forestry
Natural Resources and Energy
Manufacturing
Transportation



Health Care (Hospital Systems and Insurance Industry)
Education
Infrastructure

https://www.britannica.com/place/Louisiana-state/Economy

Professional Development at Scale and the Role of Modern Public University:

Towards the Future of Traditional Universities

Challenges

- 39 million people in US with some college level credits but no recognition of learning (National Clearinghouse 2022)
- 60%+ dropout within the first two years of college education in LA
- Traditional Institutions of Higher Education are Degree-centric (reward system based on degree completion: state funding, ranking)
- Siloed traditions in Higher Education and Industry create continued disconnect

Professional Development at Scale and the Role of Modern Public University:

Towards the Future of Traditional Universities

Solutions

- Establish a model that supports continuous learning (online degrees, certificates, bootcamps, badges, microcredentials, microinternships, competency-based education
- Streamline transfer credit policies within the state (unified template)
- Flexible access to educational tools, resources and opportunities (hybrid all year round, after-hours classes, summer programs
- Develop close relationships with industrial partners in your region (your gateways: industrial chamber of commerce, industry associations, alumni network)
- New Learning Ecosystem: Educational opportunities for everybody, Learning everywhere and anytime (midcareer professionals, entry level professionals, late bloomers)

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Towards the Future of Traditional Universities

Examples of solutions that worked:

1. Created multiple certificate programs with several major companies that upskilled internal engineers and scientists with new abilities
   A: Benefits for the companies – high retention of skilled labor, reduced cost for new searches, more vibrant company response to project R&D;
   B: Benefits for the University – new income stream to support new programs, deeper relationship that can have multiplier effect, enhanced programmatic and institutional reputation;
2. Multi-institutional agreements on credit transfer and course mapping;
3. Full Summer semester for degree and non-degree learners;
4. Fully developed 6month coop program for credit;
5. 3. + 4. = faster pathway to degree completion/professional achievement;
6. Apprenticeships for freshmen/sophomore students lead to company benefits (tuition subsidy credits)

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Professional Development at Scale and the Role of Modern Public University:

Towards the Future of Traditional Universities

UMASS LOWELL

A Leader in Corporate Education and Training

BAE SYSTEMS

The Benefits of Earning a Graduate Certificate from UMass Lowell

- An accredited certificate from one of the nation's top-ranked research universities
- A public, nonprofit university and a leader in workforce innovation
- World-class faculty with real-world expertise
- Courses are taught by full-time UMass Lowell faculty who are authorities in their fields, and by highly qualified BAE experts
- One-on-one advisors available to guide you and answer your questions
- One of the fastest rising universities in the nation in the *U.S. News & World Report* rankings

Graduate Certificate Program in Microwave Engineering

Count This Certificate Towards UMass Lowell's Master's Degree in Electrical Engineering

BAE Systems, in partnership with the University of Massachusetts Lowell, has created an Microwave Graduate Certificate Program to develop critical skills that are needed to support the expanding portfolio of programs across the electronic systems enterprise. This certificate program consists of four 3-credit courses taught onsite at BAE Systems. Each course will be accompanied by a 1-credit lab utilizing state-of-the-art test equipment designed to reinforce the classroom learning.

This 16-credit graduate certificate program makes it more convenient than ever for employees to advance their education with a top-ranked research university. Courses are taught by full-time UMass Lowell faculty who are authorities in their fields, and by highly qualified BAE experts.

Count This Certificate Towards Your Master's Degree
All courses in this certificate program can be counted towards UMass Lowell's Master's Degree in Electrical Engineering. Since the certificate totals 16 credits, graduates of the program will have completed half of the credits required for earning their master's degree at UMass Lowell. Students must have a GPA of 3.0 or higher for acceptance into the master's degree program. Moreover, students must apply into the master's degree before completing 12 credits in the certificate. Full admission requirements for the master's degree are available at www.uml.edu/grad.

Curriculum Outline
8 courses / 16 Credits

REQUIRED COURSES

EECE.5330	Microwave Engineering (3 credits)
EECE.5340	Microwave Engineering Lab (1 credit)
EECE.5350	Microwave Metrology (3 credits)
EECE.5360	Microwave Metrology Lab (1 credit)
EECE.5370	Microwave Systems Engineering (3 credits)
EECE.5380	Microwave Systems Engineering Lab (1 credit)
EECE.5710	Radar Systems (3 credits)
EECE.5700	Radar Systems Lab (1 credit)

For more information, please visit
https://gps.uml.edu/bae-microwave-engineering.cfm

- Created multiple certificate programs specifically tailored to company's professional development needs to address specific skill shortages;
- Trained new group of instructors from among the company's professional practitioners;
- Trained hundred's of engineers and scientists over a 4 year period across multiple sites

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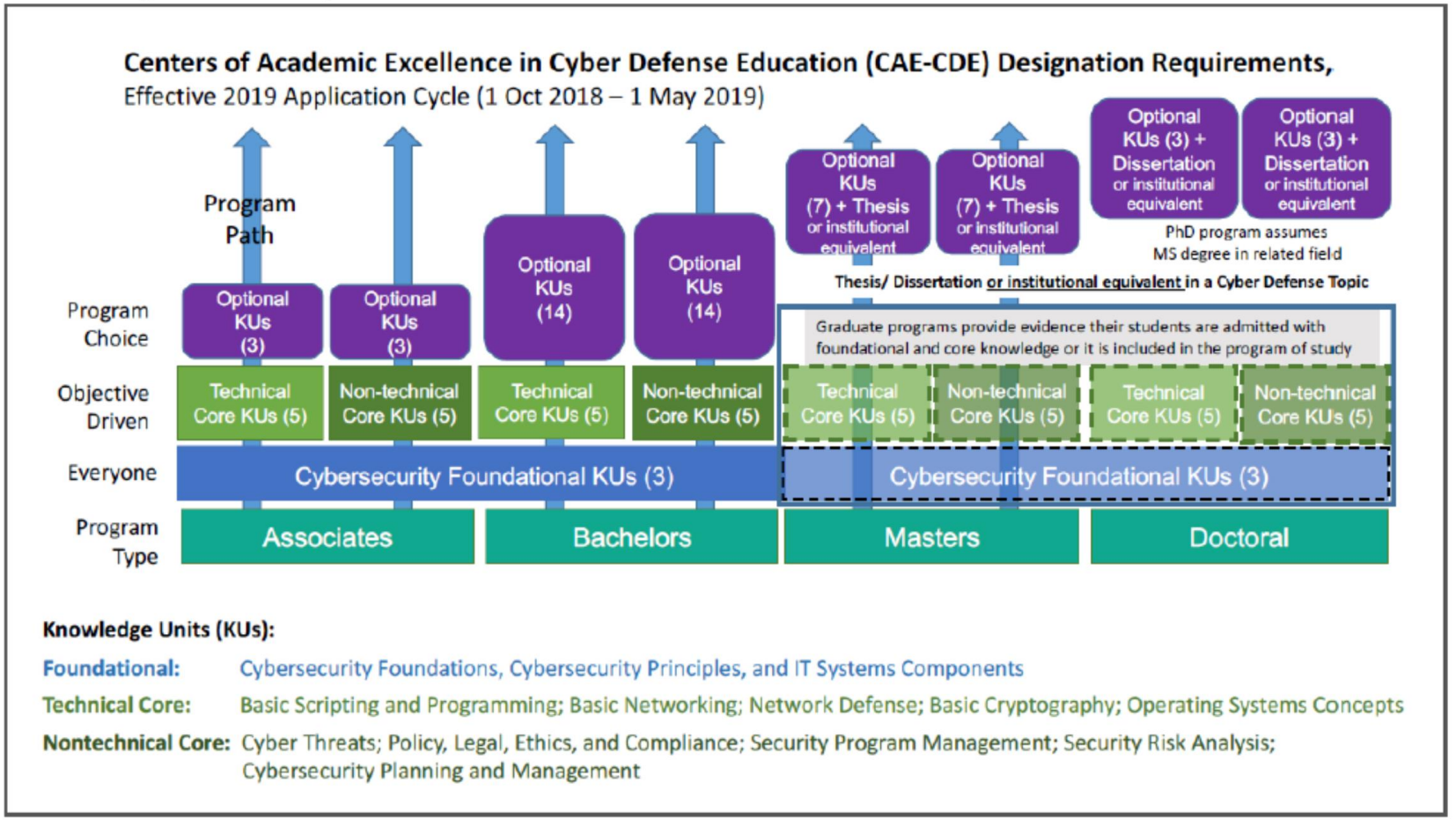
Professional Development at Scale and the Role of Modern Public University:

Towards the Future of Traditional Universities

How Do We Scale Up?



Professional Development at Scale and the Role of Modern Public University:

Towards the Future of Traditional Universities

How Do We Scale Up?

Many Tools in a Toolbox:

- In Louisiana state-wide effort to achieve universal transfer pathway in 41 major subjects within a year (mandated by legislation)
- Statewide partnerships with the government-industry sector representatives
- Development of a potfolio of professional development programs based on specific needs (Local and State Economic Development Authorities)
- Establish “Teach the Teacher” training program for recruitment of future Professors of Practice (qualified professionals with extensive practical experience)
- Need to establish new merit-based system to recognize contributions of individuals among faculty and staff that invest time, their knowledge and experience into the creation, maintenance and growth of these new programs;

https://www.cyberseek.org/

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Professional Development at Scale and the Role of Modern Public University:

Towards the Future of Traditional Universities

University System of Georgia Announces New Nexus Degree

Atlanta — February 13, 2018

With approval today by the Board of Regents, the University System of Georgia announced the creation of a new college education credential.

The nexus degree will emphasize the connections between industry, skilled knowledge and hands-on experience in high-demand career fields such as cybersecurity and financial technology. This new, short-term college credential expands on an educational portfolio that already includes associate, bachelor's, master's and doctoral degrees.

Chancellor Steve Wrigley: "The credential enables campuses to nimbly address workforce needs in their community and offer an adaptive degree structure, while helping people expand their knowledge base over time and different careers. It is offering modern skills in the essential fields of today's industry."

https://www.usg.edu/news/release/university_system_of_georgia_announces_new_nexus_degree

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Thank you for attending today's presentation.

Closing debate: This house believes that the Traditional University Degree is a relic of a bygone age

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Thank you!

Let's collaborate email ULatWork@UL.ie

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