



**Advance  
Centre**

Professional Education  
for Digital Transformation

NATIONAL  
**MANUFACTURING  
& SUPPLY CHAIN**  
CONFERENCE & EXHIBITION



In Partnership With



**Engineering  
Industries Ireland**  
Ibec

Learning  
Without  
Limits

# The skills transformation required for Digital Transformation

Barry Twomey – Centre Director ([barry.twomey@ucd.ie](mailto:barry.twomey@ucd.ie))

Stand L10

28<sup>th</sup> May 2024

Provided by



University College Dublin  
Ireland's Global University



Atlantic  
Technological  
University



HEA | HIGHER EDUCATION AUTHORITY  
AN BÚDARÁS um ARD-OIDEACHAS

HCI | Human  
Capital  
Initiative

# Skills and Digital Transformation

- “Every 5 years an employee’s skill set will only be half as valuable as it was previously” - Douglas Thomas and John Seely Brown: 'The New Culture of Learning'
- Amárach Report September 2023 indicated that 9 in 10 want to learn a new skill in the near future
- “We can no longer treat knowledge as a fixed asset – nor can we assume that what we learned in three or four years of study is sufficient to last a lifetime. Today is about telling people of all ages and all backgrounds that there are countless opportunities available in this country to learn a new skill.” \*

\* Release from Department of Higher Education, Research, Innovation and Science, Sep-23

# OECD Report findings

- In Ireland, the share of young adults with a tertiary degree is significantly above the OECD average
- However, many adults are at risk of falling behind as they do not have the right skills to thrive in their current employment and are unprepared for changes in the world of work
- Participation in lifelong learning to facilitate essential reskilling and upskilling, while above average, falls far behind top EU performers
- Irish employers express significant concern about labour and skills gaps
- Investment in skills and supports for management capabilities are the essential ingredients to ensure that SMEs across Ireland can increase productivity, innovation and competitiveness

OECD Skills Strategy Ireland: Assessment and Recommendations  
<https://assets.gov.ie/256184/c6e02dad-0790-4a53-8fda-cfe74cd0a7f4.pdf>



**Advance  
Centre**

Professional Education  
for Digital Transformation

# Where the confusion starts

- What is the specific skill need?
- When do I need it addressed by?
- Where can I go to get the skills? Hire or Train?
- How much will training cost in both time and money?
- What is the right course for what I need and how do I distinguish between multiple offerings ranging from 1 hour to 12 months in duration?

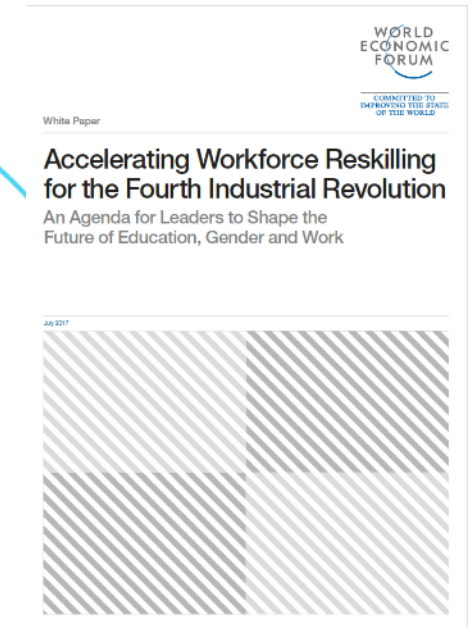


**Advance  
Centre**

Professional Education  
for Digital Transformation

# Where to start

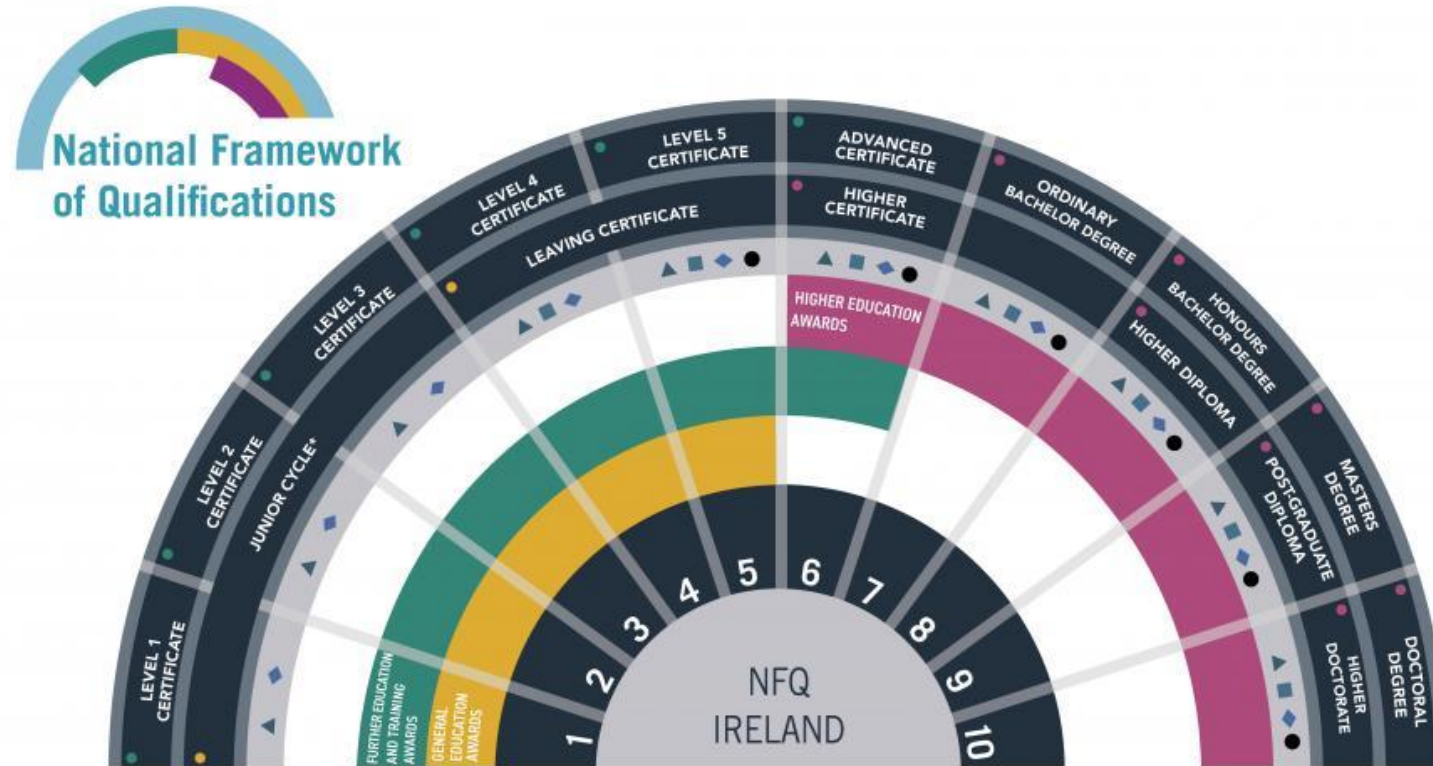
	Pathway	Employer Action
1	Take stock and recognise existing skills	Move to skills-based recruitment and develop skills assessments
2	Understand skills demand	Participate in 'skills councils' and data sharing with companies in similar sectors
3	Build and sustain motivation for learning	Build learning into performance assessment but incorporate guidance and incentives for learning
4	Recognise on-the-job training	Put rotation programmes in place as a way to socialise expertise and decentralise it. Reward individual innovation and learning
5	Reach those that need it most: SMEs, Low skilled and older workers	Provide clear pathways and regular reviews. Empower socialisation and mentorship and provide opportunities to share outside of the department/company



<https://www.weforum.org/whitepapers/accelerating-workforce-reskilling-for-the-fourth-industrial-revolution>



# Where to go?



## CLASSES OF AWARD

- Major Awards:** named in the outer rings, are the principal class of awards made at a level
- Minor Awards:** are for partial completion of the outcomes for a Major Award
- Supplemental Awards:** are for learning that is additional to a Major Award
- Special Purpose Awards:** are for relatively narrow or purpose-specific achievement
- Professional Awards:** are for occupation-orientated qualifications including apprenticeships

\*Please refer to NCCA website, [ncca.ie/en/junior-cycle/](http://ncca.ie/en/junior-cycle/)

## IRISH REGISTER OF QUALIFICATIONS

For more information on

- Qualifications
- Providers
- Courses

visit [www.irq.ie](http://www.irq.ie)



Supported by the Erasmus+ Programme of the European Union

©QQI 2021

<https://www.qqi.ie/>

# Below the Surface

## Knowledge

- Breadth
- Kind

## Know-How & Skill

- Range
- Selectivity

## Competence

- Context
- Role
- Learning to Learn
- Insight

<https://www.qqi.ie/sites/default/files/2022-09/NFQ%20Grid%20Level%20Indicators.pdf>

	LEVEL 6	LEVEL 7	LEVEL 8	LEVEL 9	
KNOWLEDGE BREADTH	Specialised knowledge of a broad area	Specialised knowledge across a variety of areas	An understanding of the theory, concepts and methods pertaining to a field (or fields) of learning	A systematic understanding of knowledge, at, or informed by, the forefront of a field of learning	KNOWLEDGE BREADTH
KNOWLEDGE KIND	Some theoretical concepts and abstract thinking, with significant underpinning theory	Recognition of limitations of current knowledge and familiarity with sources of new knowledge; integration of concepts across a variety of areas	Detailed knowledge and understanding in one or more specialised areas, some of it at the current boundaries of the field(s)	A critical awareness of current problems and/or new insights, generally informed by the forefront of a field of learning	KNOWLEDGE KIND
KNOW-HOW & SKILL RANGE	Demonstrate comprehensive range of specialised skills and tools	Demonstrate specialised technical, creative or conceptual skills and tools across an area of study	Demonstrate mastery of a complex and specialised area of skills and tools; use and modify advanced skills and tools to conduct closely guided research, professional or advanced technical activity	Demonstrate a range of standard and specialised research or equivalent tools and techniques of enquiry	KNOW-HOW & SKILL RANGE
KNOW-HOW & SKILL SELECTIVITY	Formulate responses to well-defined abstract problems	Exercise appropriate judgement in planning, design, technical and/or supervisory functions related to products, services, operations or processes	Exercise appropriate judgement in a number of complex planning, design, technical and/or management functions related to products, services, operations or processes, including resourcing	Select from complex and advanced skills across a field of learning; develop new skills to a high level, including novel and emerging techniques	KNOW-HOW & SKILL SELECTIVITY
COMPETENCE CONTEXT	Act in a range of varied and specific contexts involving creative and non-routine activities; transfer and apply theoretical concepts and/or technical or creative skills to a range of contexts	Utilise diagnostic and creative skills in a range of functions in a wide variety of contexts	Use advanced skills to conduct research, or advanced technical or professional activity, accepting accountability for all related decision making; transfer and apply diagnostic and creative skills in a range of contexts	Act in a wide and often unpredictable variety of professional levels and ill defined contexts	COMPETENCE CONTEXT
COMPETENCE ROLE	Exercise substantial personal autonomy and often take responsibility for the work of others and/or for the allocation of resources; form, and function within, multiple, complex and heterogeneous groups	Accept accountability for determining and achieving personal and/or group outcomes; take significant or supervisory responsibility for the work of others in defined areas of work	Act effectively under guidance in a peer relationship with qualified practitioners; lead multiple, complex and heterogeneous groups	Take significant responsibility for the work of individuals and groups; lead and initiate activity	COMPETENCE ROLE
COMPETENCE LEARNING TO LEARN	Learn to evaluate own learning and identify needs within a structured learning environment; assist others in identifying learning needs	Take initiative to identify and address learning needs and interact effectively in a learning group	Learn to act in variable and unfamiliar learning contexts; learn to manage learning tasks independently, professionally and ethically	Learn to self-evaluate and take responsibility for continuing academic/professional development	COMPETENCE LEARNING TO LEARN
COMPETENCE INSIGHT	Express an internalised, personal world view, reflecting engagement with others	Express an internalised, personal world view, manifesting solidarity with others	Express a comprehensive, internalised, personal world view manifesting solidarity with others	Scrutinise and reflect on social norms and relationships and act to change them	COMPETENCE INSIGHT

# Below the Surface

	LEVEL 6	LEVEL 7	LEVEL 8	LEVEL 9
KNOWLEDGE BREADTH	Specialised knowledge of a broad area	Specialised knowledge across a variety of areas	An understanding of the theory, concepts and methods pertaining to a field (or fields) of learning	A systematic understanding of knowledge, at, or informed by, the forefront of a field of learning
KNOWLEDGE KIND	Some theoretical concepts and abstract thinking, with significant underpinning theory	Recognition of limitations of current knowledge and familiarity with sources of new knowledge; integration of concepts across a variety of areas	Detailed knowledge and understanding in one or more specialised areas, some of it at the current boundaries of the field(s)	A critical awareness of current problems and/or new insights, generally informed by the forefront of a field of learning



# People Centric Approach

- What if I train them and they leave?... What if you don't and they stay?
- “Train people well enough so they can leave, treat them well enough so they don’t want to” – Richard Branson
- Small versus Medium versus Multi-National environments are unique
- Upskilling people in line with the company goals goes a long way to making them feel valued



**Advance  
Centre**

Professional Education  
for Digital Transformation

# Training Opportunities

- All levels needed and all levels catered for
- Push for new apprenticeship programmes
- Local ETBs (Education and Training Boards) work with SOLAS (Further Education and Training - FET) offer Level 1 to Level 6 awards
- HEIs (Higher Education Institutes) offer Level 6 to 10 Micro-Credentials and awards
- Skillnet Ireland acts as a conduit between business and education providers

## CPD or Micro-Credentials?

Micro-credentials are short, accredited, flexible, industry-aligned courses, that give learners the opportunity to upskill in highly-specialised areas. Micro-credentials offer a highly flexible, bite sized and accessible way of upskilling and reskilling.



**Advance  
Centre**

Professional Education  
for Digital Transformation

# Advance Centre

- Founded in 2020 by UCD, ATU and TU Dublin to offer flexible up-skilling and re-skilling options to learners through HCI Pillar 3 funding, one of 24 projects nationally
- QQI Accredited courses (Levels 6-9): Modules to Masters
- 11 Thematic Areas under the Digital Transformation umbrella



**Adv. Electronic System Design**



**A.I. for Medicine**



**Cyber Security**



**Data in Context**



**Data Science**



**Digital Agriculture**



**Digital Manufacturing**



**Financial Mathematics**



**Health Data Analytics**



**Quantum Engineering**



**Software Engineering**

# Project Aims and Objectives

- Support the National and International Skill Strategies<sup>[1]</sup>:
  - Cybersecurity
  - Recognition of Industry certifications
  - Compulsory computer science in education
- Promote and Increase Academic-Industry collaboration for the purpose of future proofing graduates and upskilling existing staff
- Offer flexible and Agile learning options to incentivise continuous learning
- Promote interdisciplinary learning across Centre themes

<https://www.digitaleurope.org/news/digitaleurope-sets-three-areas-of-priority-for-european-digital-skills/>



**Advance  
Centre**

Professional Education  
for Digital Transformation

# Flexible Learning Pathway

- Individual accredited modules or 'micro-credentials' (>5 credits)
- Flexible Study Options
- Future Proofing of Skills
- Choice: mixed theme modules count towards an award (Cert., Dip., Masters)
- Award Progression on part- and full-time basis
- Recognised, skills-based award centred on learning outcomes

Single  
Module  
(5 credits)

Certificate  
(15 credits)

Diploma (30 credits)

Masters  
(90 credits)



**Advance  
Centre**  
Professional Education  
for Digital Transformation



# Discussion

- Understand the skills need and what skills are already in-house. Understand the skill level as well i.e. short/medium CPD training or Level 6 – 9 training required
- Engage with your supports (EI, IDA) and join your local and sectoral groups (Regional Skills, Skillnet, ETBs etc.) to keep up with training and funded training activities
- Talk to Universities and Technical Universities in your area to understand the courses available and what RPL (Recognition of Prior Learning) opportunities are there for access or exemption to programmes
- Start small, but start! Like any change, bring people with you, and demonstrate small but tangible results. Like any change, the plan has to include time, budget and clear outcomes

# Learning Opportunities

50-80% subsidies available on certain accredited programmes through the Advance Centre in Digital Transformation

- Advance Centre: <https://www.advancecentre.ie/courses/learnerfeesubsidy/>

Further details on subsidised courses nationally through the other HCI Pillar 3 projects is available here

- HCI Pillar 3: <https://hea.ie/skills-engagement/hci-pillar-3-micro-credentials-learner-fee-subsidy/>

Scholarship opportunities through the 30% Club, aiming to improve female representation in Senior company roles

- 30% Club Ireland: <https://30percentclub.org/wp-content/uploads/2024/03/2024-30-Club-Scholarship-Brochure-FINAL-v2-1.pdf>

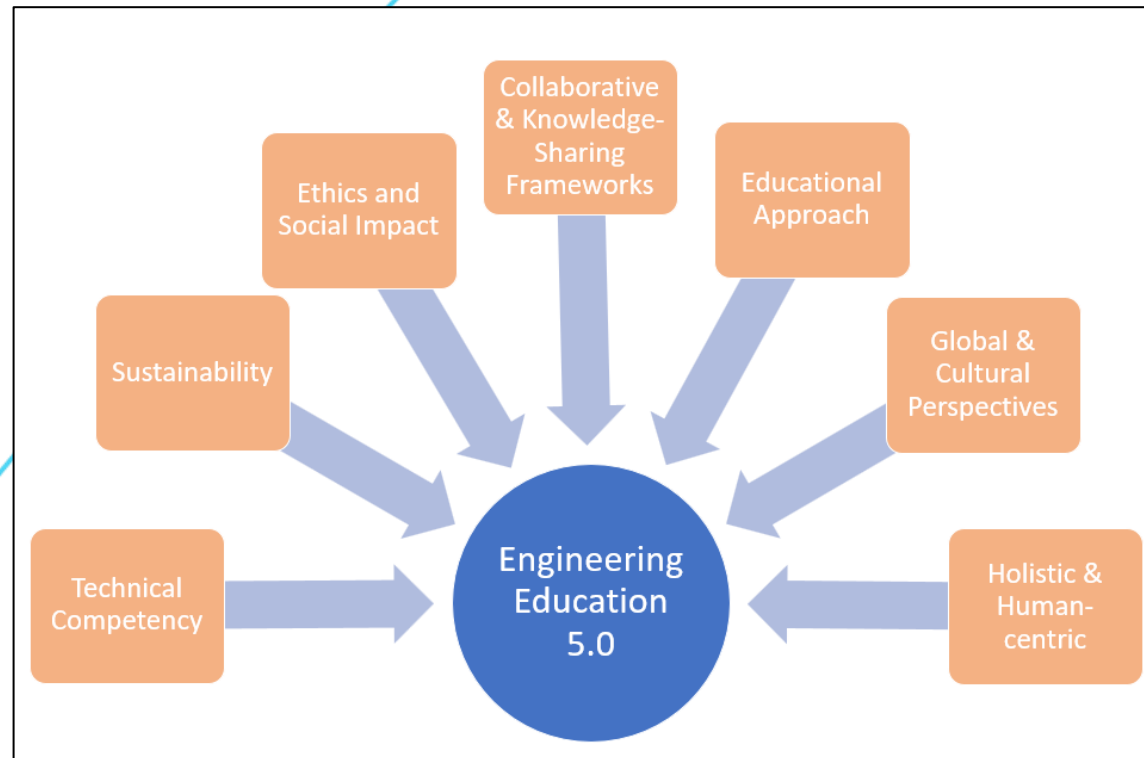
# Support Information

- RPL: <https://www.priorlearning.ie/>
- Micro-Credentials: <https://microcreds.ie/>
- Springboard: <https://springboardcourses.ie/> (subsidised courses)
- Skillnet: <https://www.skillnetireland.ie/> (find your sectoral Skillnet)
- HCI Pillar 3: <https://hea.ie/skills-engagement/hci-pillar-3-projects-hub/> (overview of Pillar 3 projects)
- Regional Skills Network: <https://www.regionalskills.ie/>
- Local Enterprise Office: <https://www.localenterprise.ie/>



# Further Information Tomorrow

- “Engineering Education 5.0: how to make manufacturing fit for the future” presented by Louise O’Gorman during tomorrow’s session in ‘Future of Work’ at 12.30 on the 29<sup>th</sup> of May



**Advance  
Centre**  
Professional Education  
for Digital Transformation



**Advance  
Centre**

Professional Education  
for Digital Transformation

NATIONAL  
**MANUFACTURING  
& SUPPLY CHAIN**  
CONFERENCE & EXHIBITION



In Partnership With



**Engineering  
Industries Ireland**  
Ibec

Learning  
Without  
Limits

For more information:

[info@advancecentre.ie](mailto:info@advancecentre.ie)

[www.advancecentre.ie](http://www.advancecentre.ie)

Or talk to us at  
Stand L10

Provided by



University College Dublin  
Ireland's Global University



Atlantic  
Technological  
University



HEA | HIGHER EDUCATION AUTHORITY  
AN BÚDARÁS um ARD-OIDEACHAS

HCI | Human  
Capital  
Initiative