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Work-Based Learning; Developing Academics and Students – Opportunities for Undergraduate Programmes

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Work-Based Learning

Discovery in Controlled Environments

(with some degree of randomness)

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‘EMPLOYER – COURSE’ ENGAGEMENTS

Workplace Visits - Academics - Currency

Retention - Students - Attainment

Training - Professional Bodies - Careers

Apprenticeships - Jobs – DLHE

Tutoring - Mentoring – Peer Support

Lab Work – Field Trips – Design Offices

Creativity – Subjects - Conceptual Thinking

Case Studies – Group Projects – Problem Solving

Knowledge – Skills - Behaviours

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Enhancing and Assessing your plan

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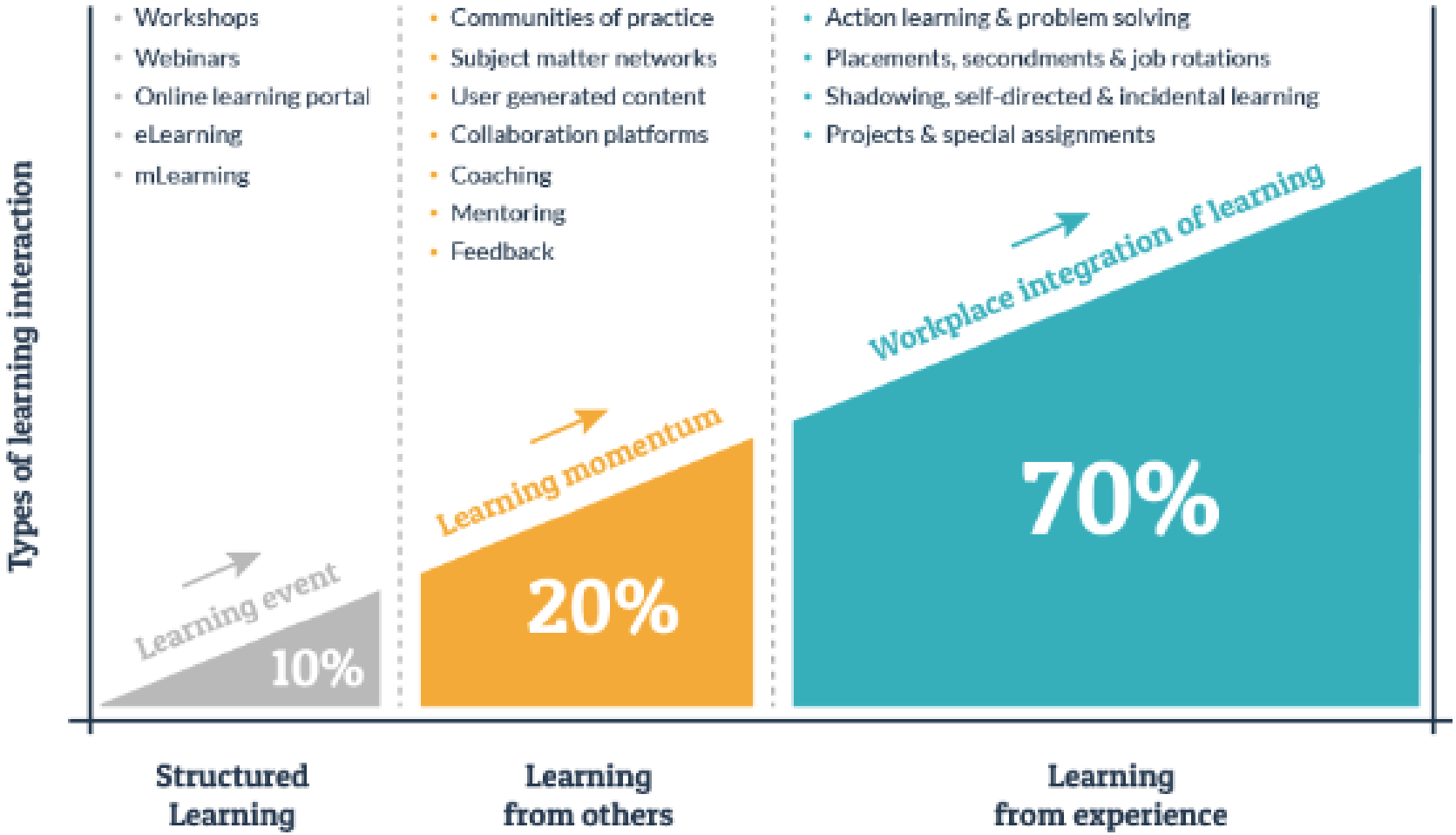

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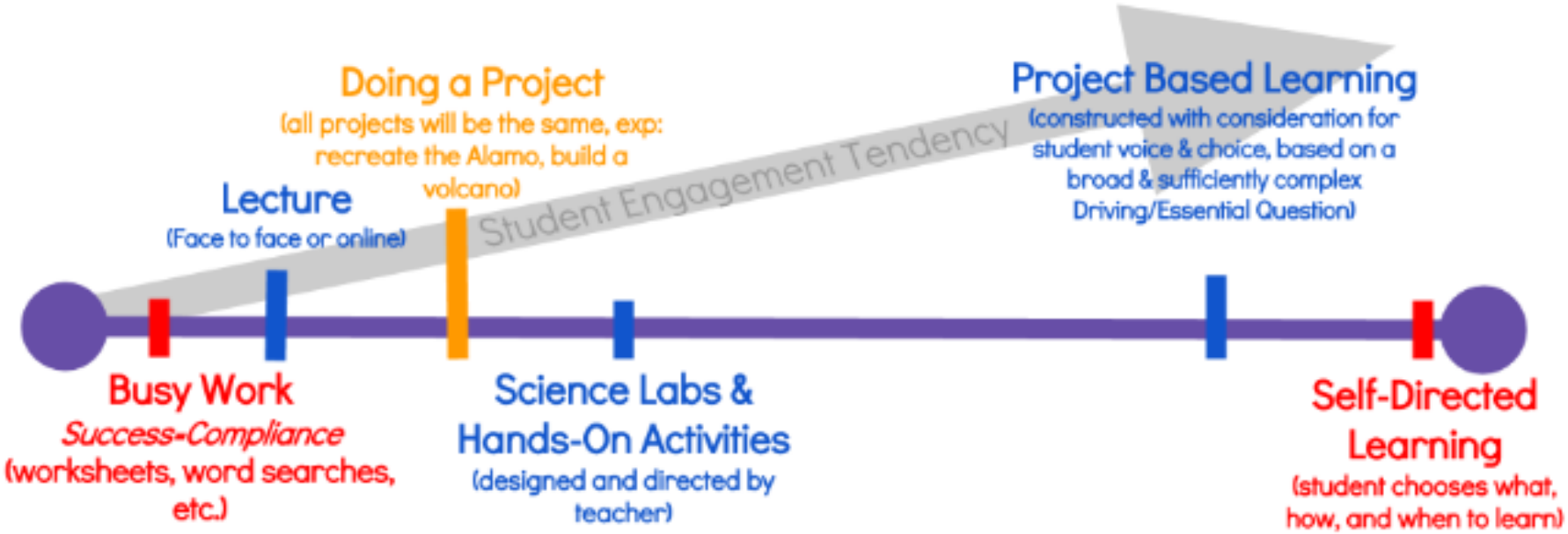
Student Choice Continuum



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Constructivism

Relevant Information

- Learning is a growth process that comes from the development of individual constructs
- Learning arises from encounters with conflicts and challenge
- Learning assessment and feedback should be naturally embedded within instruction
- Curriculum emphasizes big concepts, beginning with the whole and expanding to include the parts.
- Learning is gained through real world experiences
- Learning task and environment should reflect complexity of environment student should function in

Key Theorists

John Dewey, Lev Vygotsky, Jean Piaget, Jerome Bruner

Key Terms

problem solving, learner guided, situated cognition, discovery learning, inquiry based learning, real world learning, psychological constructivism

Brain-Based Learning

Relevant Information

- The search for meaning is innate
- The search for meaning occurs through patterning
- Emotions are critical to patterning
- The brain/mind process parts and wholes simultaneously.
- Learning involves both focused attention and peripheral perception
- Complex learning is enhanced by challenge and inhibited by threat
- Learning assessments are monitored by students
- Curriculum is designed to display the importance and meaning of the smaller concepts, which eventually expand into the big concept

Key Theorists

Renate Caine, Geoffry Caine, Eric Jensen, Don Campbell, David Sousa

Key Terms

relaxed alertness, patterning, emotions, multiple intelligences, orchestrated immersion, active processing

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- Learning is a process which builds knowledge based on previous knowledge
- Learning is seen as beneficial when it is made relevant to learner
- Student-Centered
- Instructor plays role of coach or facilitator
- Emphasis on cognition
- Learning should attend to the social needs of the learner
- Deviates from traditional classroom learning environments
- Multiple intelligences

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Future Influences and Needs

ICE200 Australasia Conference, Sydney,

6th and 7th September 2018

"A consistent theme among speakers was 'the future', and there was a lot of talk around digital, cities of the future, robots, self-repairing buildings, virtual world and mobility as a service."

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Project Principles

ICE website : 11th October 2018

“Plans are nothing; planning is everything”

former US President Dwight D Eisenhower (1890-1969)

Damian Bucke, Aphex and Costain Skanska JV, discusses the importance of communication, collaboration and simplicity when planning construction projects.

ICE Forensic Engineering Journal (8th Nov 2017)

4 degrees of warming by 2040

'Should engineers be allowing for a potential 4°C rise by 2040 and how?'' Parry argues that civil engineers can no longer ignore the evidence that climate change is more drastic and faster than predicted. He suggests that civil engineers need to prepare for 4 degrees of warming by 2040.

The ICE's themed Forensic engineering journal show a compelling need for engineers to be kept informed of current and predicted changes in the climate. Such forensic information is needed to allow for resilient design but also to guard against liability associated with use of outdated codes of practice.

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Greater Manchester Local Enterprise Partnership

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Employer Engagement (GM – LEP)

Priority 1: Businesses engage with schools and colleges inspiring young people and adults to raise aspirations, explore careers and gain meaningful experience of the world of work

Priority 2: Employers are able to invest in developing their workforce (including via Apprenticeships) and work with GM to ensure the skills offer meets their needs

Priority 3: Businesses are supported to connect unemployed GM residents (particularly those with long-term health conditions) to the job opportunities they create and support them to stay in work

Priority 4: Businesses are able to create and maintain healthy GM workplaces which support workers to thrive, reduce sickness absence and improve productivity

Priority 5: Businesses will use their procurement power and supply chains to deliver social value

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WBL and/or WBPL (as published at University of Ulster)

Supports student mobility and internationalisation.

University graduates have the skills, qualities and attributes that employers want.

Learning gain important because of TEF supporting the University in measuring impact of employability provision and WBPL.

Informs policy and practice.

Engaging all academic staff with DLHE directly as they need to analyse and use this data to inform strategies and approaches to WBPL within their courses.

Review of professional support services which may lead to reconfigured/ additional resources for employability and WBPL.

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Who Benefits from WBPL ?

Student ?

Employer

Profession

Related Professions

Academic Staff

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Duration of Work Based Engagements

Video or Guest Talk (1-hr)

Site Visit (1-day)

Field Trip (1-week, not necessarily Employer connected)

Work Placement (1-week)

Work Placement (1-month)

Work Placement (1-year – Sandwich Degree?)

Further - Embed in strategic or every Module on Course or be adopted as a Separate Course Module?

Part-Time Course / Apprenticeship Course (if linked to structured, recorded and assessed On-the Job Training)

Extrapolation to U/G Programmes

Recent work on delivering our new Masters level provision has ramped up emphasis on Employer Engagement at a time coinciding with development of U/G Apprenticeship Courses across our School of Engineering

Academic Staff have been divided to look after groups of between 8 to 10 students in each Employer providing placements

Networking with Employers has huge benefit for U/G as well as the MRes students

The whole ethos is of Problem Solving with students producing a portfolio and presenting their findings

Regular visits to monitor and receive Employer Reports, plus student self-assessment summaries uploaded to VLE

Relevance to JBM Accreditation Process

Using WBPL our Academics are 'put' into the workplace

The workplace is the learning vessel, with students confronting many practical and technical problems …. BUT the Academic Staff member subtly sees first hand what techniques ARE being used, not what USED to be !! So a huge staff development exercise.

Employer relationships with academic staff foster all the standard range of engagements (dissertation topics, research, consultancy, practical v blue-skies research, work based dissertations)

JBM 50% professionally qualified staff guidance - potentially does 'staff development' offer more than encouraging academics to become CEng (ideal World both achieved!)

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Opportunities

WBPL strengthens Employer relationships for our academic staff and so fosters all the usual range of engagements (dissertation topics, research, consultancy, practical exposure, work based dissertations, real-life project working, fast-track into Employment)

Practical skills and creativity can be significantly enhanced and students relate more from industry than traditional lectures

Research shows that some Universities have mandatory Work Placements at HE4 and HE5 with these being credit-bearing - such Universities have much better DLHE Employability statistics as well as attainment levels (1st and 2:1s)

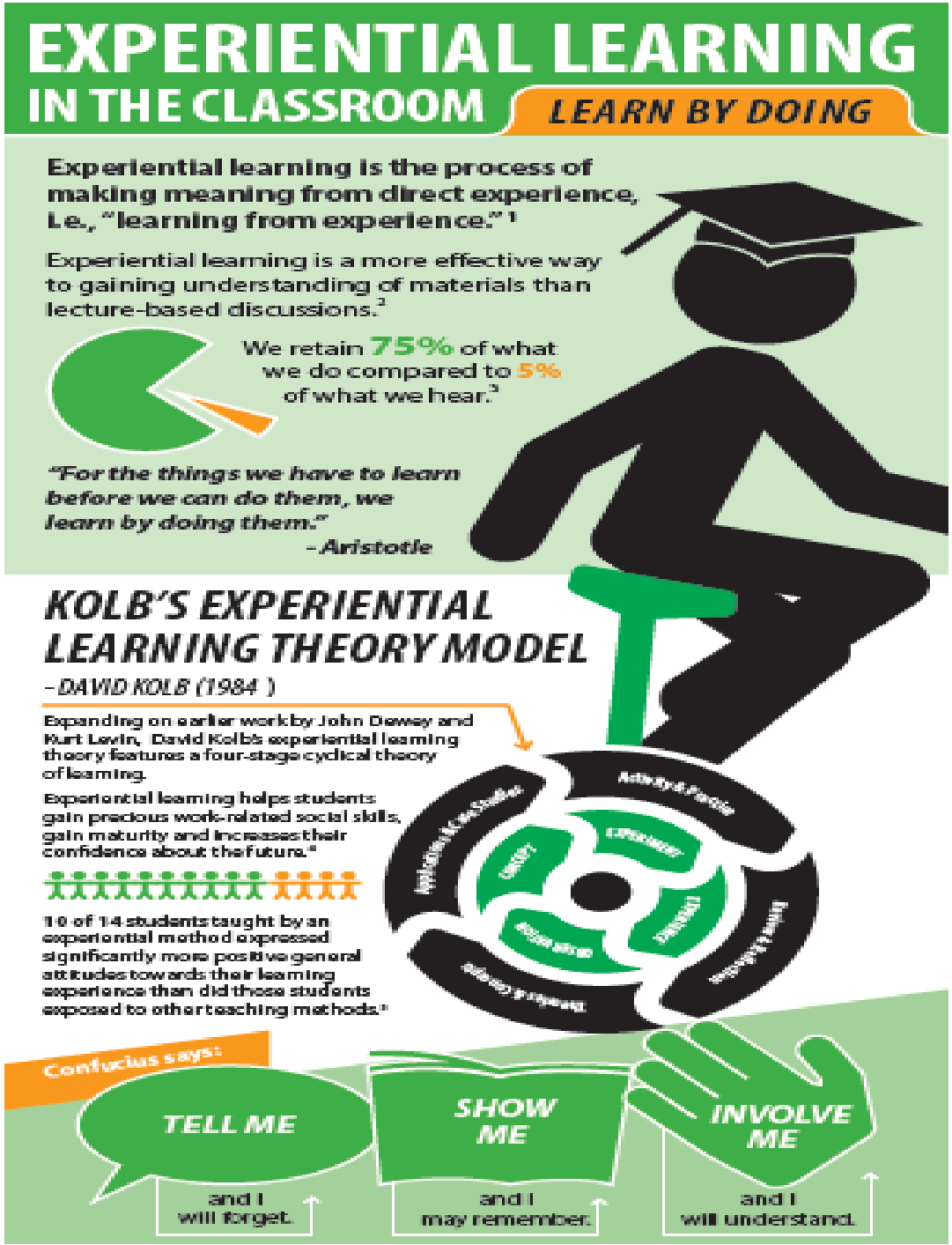
QUESTIONS and THE FUTURE

Payment for placement? Small % of Tuition Fee?

Compulsory placement for all full-time undergraduates?

Credit bearing placement modules?

Counting towards degree classification?



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The principles of active learning are very well understood

Show and involve rather than tell and subdue