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Citation for published version:

MacLaren, AJW & Chrisp, TM 2017, 'Practising Collaborative Practice', IABSE Conference 2017, Bath, United Kingdom, 19/04/17 - 20/04/17.

Link:

[Link to publication record in Heriot-Watt Research Portal](#)

Document Version:

Peer reviewed version

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Practising Collaborative Practice

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Abstract

This paper builds on previous research into collaborative education in the built environment, presenting analysis of three case studies in multidisciplinary construction education at undergraduate level. The authors apply key observations, drawn from a review of relevant literature on construction education and teamworking, to case studies of different scope, context and scale. The resulting discussion contributes to developing a taxonomy of collaborative practice in built environment education.

Keywords: education, multidisciplinary collaboration, pedagogy, communication, future skills, engineering, construction.

1 Background

Construction has been identified consistently as a poor performer in terms of efficiency, digital adoption and innovation. In addition, the ‘performance gap’- that is, the difference between the designed performance of buildings (high) and the actual performance of built assets (generally much lower), particularly in terms of energy efficiency, has been highlighted as a major challenge. The effective delivery of sustainable buildings and assets ‘requires collaborative learning to avoid isolated decision making’ [1], an essential skill for future professionals in the future construction industry.

In 2012 the UK Royal Academy of Engineering (RAEng), recommended the establishment of four ‘Centres of Excellence in Sustainable Building Design’, ‘to support the construction industry through a period of rapid and unprecedented change’ [2]. The report identified the primary aim of these centres as being “to enhance the education of building designers, within a multidisciplinary environment” (ibid, p.7).

1.1 Case Studies in Undergraduate (UG) Curricula

Heriot Watt University, as one of these Centres of Excellence, has established and continues to develop multiple approaches to delivering multidisciplinary educational experiences for students. The authors consider three instances of collaborative education, delivered within UG criteria in the academic year 2016-17.:

- A 12-week multidisciplinary collaborative design project at SCQF Level 9 (UG Year 3).
- A 5-day multidisciplinary design project at SCQF Level 10 (UG Year 4).
- A 2-semester final-year UG dissertation course, addressing a real client brief and engaging stakeholders, student colleagues and co-professionals.

2 Collaborative Education

“collaboration occurs when a group of autonomous stakeholders of a problem domain engage in an act or decide on issues related to that domain” Wood & Gray, 1991 [3]

The above definition of ‘collaboration’ defines parameters which can be applied to test for

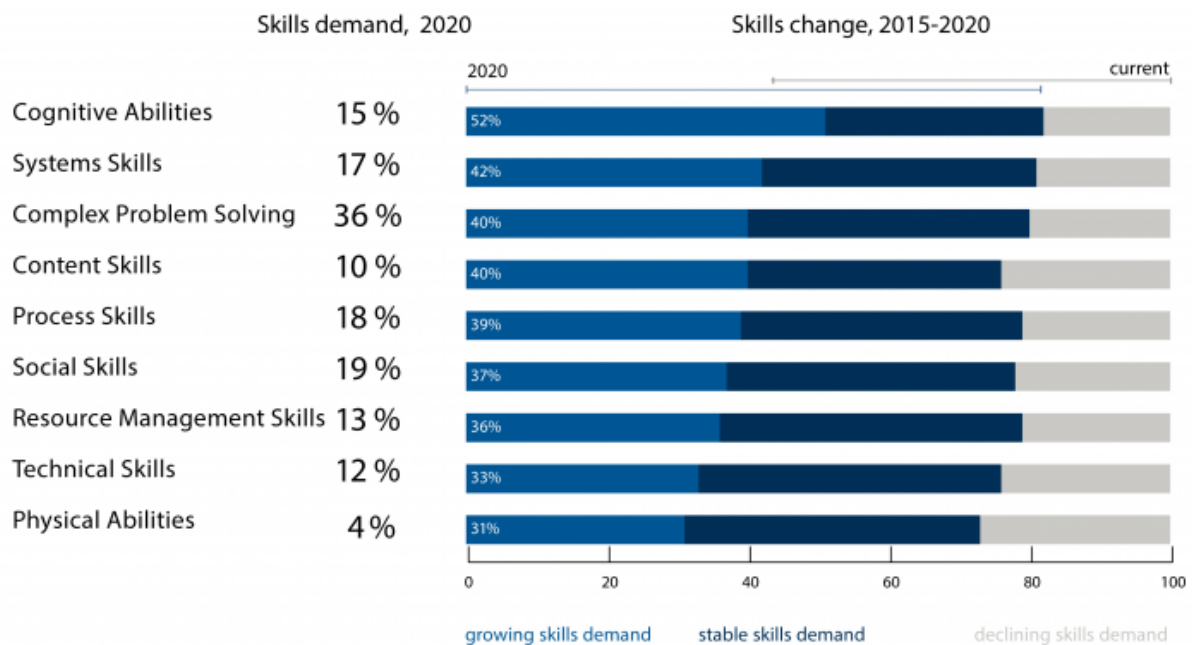
successful delivery of this mode of learning in higher education institutions (HEIs). In order to create an effective forum for learning collaborative skills, the project or course must establish ‘autonomous stakeholders’ as participants; define a ‘problem domain’, and set a brief requiring the participants to together ‘act or decide on issues’. These demands are additionally challenging when addressed within the necessary constraints imposed by the timeframes of HEI semesters, academic quality requirements, institutional accreditation and staff expertise, The three case studies address these parameters in

diverse ways, devised by the authors and their colleagues through a combination of theory and iterative experiment, providing empirical evidence.

2.1 Collaborative Behaviours

The World Economic Forum projects that the skills demand for current undergraduates, when they enter the jobs market on completion of their degrees, will place the greatest value in skills in complex problem solving, social skills and resource management skills. These are behaviours best learned through collaborative practice.

Table 1. Change in skills demand and composition, World Economic Forum [4]



3 Conclusions

Successfully providing an effective forum for Collaborative practise within HEIs requires pedagogic innovation and imagination, and collaboration between faculty to devise briefs, mentor students and assess achievement.

4 References

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