Team role theory in higher education

In the second of three articles, **Gillian Smith** and **Pat Yates** present the results of their research into increasing students' employability skills

This article builds upon our previous research "to investigate whether knowledge of team role theory could be used as a means to support HE students in academic group work and the development of soft skills required by industry". Preliminary findings created a paradigm shift that moved the research away from the construction of Belbin's "perfect team" where the Belbin[1] Team Role Self-Perception Inventory became the vehicle for imparting knowledge of TRT.

To evaluate soft-skill development, sometimes referred to as transferable skills, we have reviewed the literature, drawing upon case studies of group work within educational settings, and presented the primary research findings. We have also taken into account the needs of the various stakeholders involved within the development of soft skills, which include students, employers, academics, educational practitioners and governing bodies.

A key finding of our research is that group work *does* enhance the development of the softer transferable skills. This was not surprising as our experience and observation of working with students over time indicated that this would be the case. However, a significant finding of this study is that the development of softer TS is magnified when students have prior knowledge of TRT.

A key finding of our research is that group work does enhance the development of the softer transferable skills

CASE STUDIES

Skills for Industry

Edmond[2], referring to foundation degrees, cites Keep's 2004 analysis, noting a "profound shift in the nature of the skill sets that many employers are seeking…" arguing that a shift from "manual skills… [And] hard technical knowledge, towards a growing prioritisation of 'softer' social skills and personal attributes…" is in line with employers' requirements of HE.

Semeijin *et al* focused upon *narrow field studies* and *generic field studies* when considering employability[3]. Where students with 'wider' study remits embrace generic skills such as teamwork, employability chances were improved; however this must be set in the context of the labour market. Interestingly, a tight labour market favours generic skill sets such as transferability and multi-skill sets, enhancing capability across a range of career paths.

The East of England Development Agency further supports this research, noting that "employers are increasingly seeking evidence of skills and competencies rather than just qualifications"[4]. The current instability of the economic environment, discussed by Moreau and Leatherwood[5], is in accord with Fallows and Steven[6], who assert that students need "to be flexible and prepared for a lifetime of change…", concurring with Keep's belief of a *shift*, "with employers stressing the priority they give to personal transferable skills".

In contrast, a study by Jones-Evans *et al*[7] "acknowledges the need for the development of **both** *hard* and *soft* skills simultaneously throughout the period of education and beyond" and reflects the delivery in most higher education establishments today.

The development of soft skills arguably poses a challenge for HE, with Petrova and Ujma[8] highlighting the lack of appreciation that students have of the soft skills that make them employable. Although, according to Ehiyazaryan and Barraclough[9], when students are exposed to challenges it enables them to develop the soft skills needed for employment. A suggested causal effect is that "too often, 'passivity' still dominates learning… therefore limiting the development of highly valued transferability skills"[10]. The policy and research report *Key Competencies: Some International Comparisons* notes that a "key driver [for soft skills] has been business industry needs"[11].

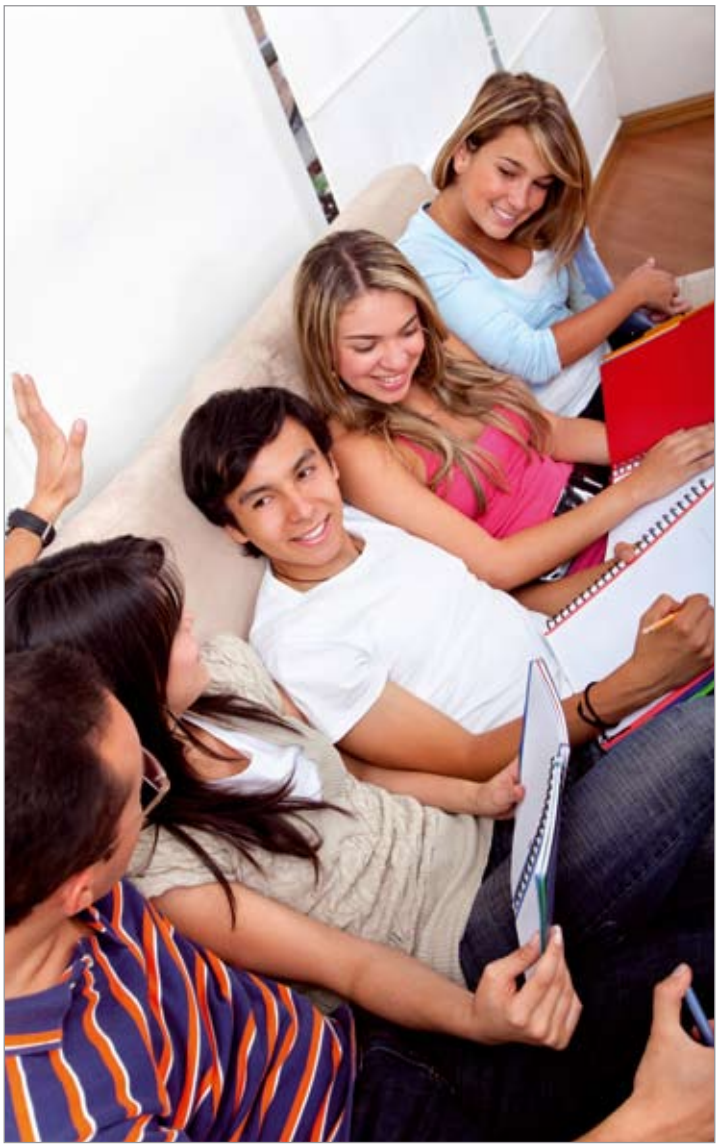
A synergy between educational environments and industry requirements, acknowledged by previous and current government policy, is therefore essential. Indeed, Sutherland[12] notes the changing ethos and expansion, endorsed by Robbins through to Dearing, suggesting that "higher education was to be seen as a form of human capital investment, equipping individuals for more productive participation in the [service] labour market…" Nonetheless, skills shortages are still a key issue today.

Learning

A case study by Siebert *et al*[13] found that those students returning to education after exposure to industry actually preferred group work as it enhanced their learning. The students valued *learning as participation* as opposed to *learning as acquisition*. However, it could be argued that this cohort already had (soft) 'employability' skills as they were studying part-time while working in industry. Mutch[14] refers to the maturity of the learner, while extolling the benefits of 'action learning' and their ability to self-discipline.

In support of action learning, Rossin and Hyland's research[15] concluded that group-based activities are essential for personal and social development and the enhancement of 'deeper learning'. Dickinson[16] takes this a stage further, suggesting a journey of discovery, similar to Kolb's *experiential learning*, where a student travels through a "passage from detached observer to involved performer…" According to Dickinson, skills development has a formula in which:

→



training/support, plus relevant experience, plus time to reflect, plus feedback, over sustained motivation, will be equal to development.

Signifying for the acquisition of learning, students travel through a rite of passage over a period of time that, when completed, will give the necessary skill sets to perform effectively in industry. Discussing skill development, Bell[17] sees soft skills as essential, arguing that "if graduates are expected to change careers several times over during their working life, these generic features [skills] become even more important". Disturbingly, The UK Commission for Employment and Skills[18] found "too many young people in the UK fail to gain the basic employability and lower-level skills needed to progress in work".

The role of self-reflection in student development

While Sancho-Thomas[19] indicates that, within the HE sector, group work is used extensively, he also argues that, to develop students' ability, they will need to understand self. Self-reflection is a critical life skill within both education and the workplace; in an educational setting this is encouraged through TS, particularly the TS of *improve your own learning and performance*, and in a workplace setting through self-appraisal. Additionally, Petrova and Ujma agree that TS enhance employment capabilities, arguing that self-awareness is critical.

Working with post-graduate students, Greenan *et al* developed a learning strategy encompassing five phases, requiring students to carry out ongoing peer- and self-assessment. However, their results show that students found the self-assessment aspect difficult, feeling that this particular responsibility lay outside of their remit and preferring tutors to take responsibility for assessment.

While the findings show reluctance to self-assess, it is interesting to note that an industry requirement is to have employees with the skills that enable self-reflection, thus suggesting students need to be challenged and taken out of their comfort zones in order to further develop TS.

Referring back to Jones-Evans *et al*'s research on learning sets, in particular soft skills, students developed an understanding of their own skills, providing them with the capability to 'self-select' into teams based upon complementary skills. The students' ability to self-select into teams (groups) appears to indicate a level of self-understanding, placing them in a much stronger position to perform collaboratively.

Supporting the development of TS

A number of case studies would appear to support the assertion that students need to make a transition from *passive* to *active* learners, whereby group work is the vehicle for this development of soft skills. However, arguably, development will not take place unless facilitation and guidance are given, systems are in place to support the process and an opportunity exists to strengthen the experience through reflection.

Mutch's research found that students needed to be "properly prepared for the roles which they may play…" Drummond[20] concurs, arguing that "opportunities for effective skill development require support [and] guidance which encourages… constructive reflection… [and] strategies for improvement…" Where

appropriate support for group work is provided, "students develop the attributes and skills relevant to teamwork in the real world…"[21]

Time frames

Arguably, the plethora of group work in HE is driven by the desire to engage students in their learning while also meeting the needs of industry. A key finding from our review of the case studies has been the time frames involved. Case studies by Kotey and Mutch involved a three-month period, considered to be a reasonable time frame. Similarly, over a nine-month period, Jones-Evans *et al* believe that learning sets (groups) gained skills and knowledge about self and others that place the student in a much stronger position to perform cohesively.

Ehiyazaryan and Barraclough's Venture Matrix model facilitates teamwork through the delivery of a business model and creates interdependence of teams over the duration of their three-year course, reinforcing the notion that deeper knowledge of self and others facilitates group work. Again, the importance of self-reflection is argued, along with the need to engage students in active learning: time frames would appear to be a critical factor.

In contrast to the case studies discussed above, University College Birmingham students undertake group work in much shorter time frames, of between six and seven weeks. Arguably, this reflects the fast pace of the workplace today.

Findings of primary research

This longitudinal study took place over two years and collected data comprising 116 completed questionnaires from Level 5 undergraduate students. These students participated in a group assignment and had previously studied team role theory, including completing a BTRSPI. This cohort will be referred to as Group A.

Additionally, a questionnaire was issued to 191 Level 5 undergraduate students who had participated in a group assignment, but had *not* previously studied TRT or completed BTRSPIs. This cohort will be referred to as Group B.

Both groups answered questions 1-19 but only Group A were able to answer question 20 *(Do you feel that knowledge/understanding of the Belbin team roles improved the performance of the group?)*.

The 116 questionnaires issued to Group A gave a return rate of 73 per cent. The 191 questionnaires issued to Group B gave a return rate of 62 per cent. Statistical analysis in the form of a t-test was then applied to questions 1-19 to determine whether there is a degree of significance between the independent data sets of Group A and Group B. The results revealed with 95 per cent confidence a **significant** difference between the two groups.

Group A indicates a higher level of transferable skill development than Group B

As we identified in our first article last month, our students were able to give responses by circling one of five different categories *(very poor, poor, average, good, very good)*. To find out how many students have improved their perception of working with others (ultimately raising their performance through the development of transferable skills), we had to analyse how many found the experience *good* to *very good*. Consequently, *average, poor* and *very poor* responses were purposefully discounted to set a high benchmark and to ascertain improvement of TS.

The percentage responses to questions 1-19, to indicate TS development, from Group A ranged between 60 and 78 per cent, while the percentage responses from Group B ranged between 39 and 63 per cent. Figure 1 presents further analysis of questions 1-19, combining the responses into the four TS components.

% responses to indicate transferable skill development
Q1-19 (Good/very good responses only)

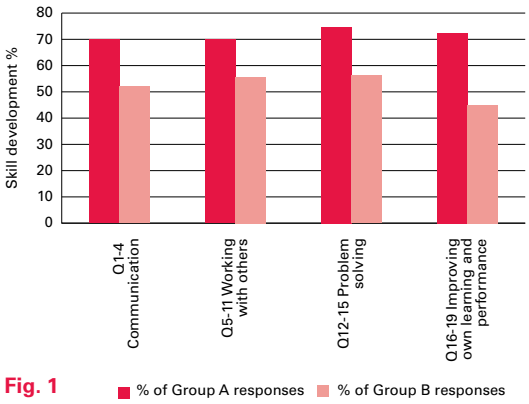


Fig. 1

The responses to questions 1-19 from both groups reveal a consistent level (Group A 70 to 74 per cent and Group B 45 to 55 per cent). However, in all categories, Group A indicates a higher level of transferable skill development than Group B.

In this case, study knowledge of TRT has contributed to improved performance of HE students working in groups

Gillian Smith and Pat Yates
are lecturers at University College Birmingham. They can be contacted on +44 (0)121 604 1000 or at p.yates@ucb.ac.uk and g.smith@ucb.ac.uk

As stated earlier, an additional question was included in the questionnaire issued to Group A to try to ascertain if the students felt that having knowledge of the Belbin TRT helped improve the performance of the group. In response to this question, 80 per cent of students felt knowledge of TRT had improved their performance.

To support this quantitative data, qualitative responses were also requested and 41 per cent of students gave reasons for the qualitative response. The *rationale* for separation of the responses under the headings of the four TS was to determine whether it was possible to make a clear link between the transferable skill and the response of the student. All responses indicated this to be the case (see Figure 2 below).

Q20. Group A (qualitative responses)

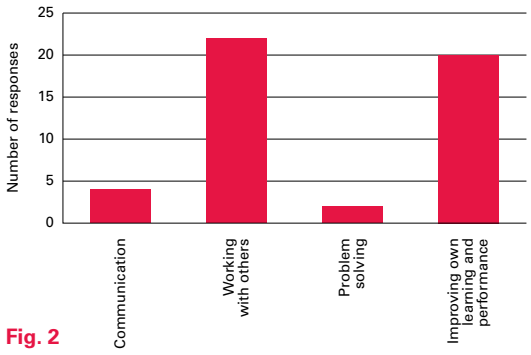


Fig. 2

Both groups were given a question referring directly to their individual skill development. Figure 3, right, shows that, in all areas, Group A (44 to 85 per cent) indicates a higher level of transferable skill development than Group B (24 to 71 per cent).

The "others" category has not been counted as the students did not identify what "other" skill they felt they had developed. "Communication" is the highest-ranked skill development by both groups. The biggest difference in terms of skill development responses between groups A and B is evident within the "confidence" category: Group A

is significantly 32 per cent higher than Group B. The research evidence shows that this is attributed to giving them a dialogue to play to their strengths and develop their weaknesses. This is further supported by the significantly improved levels of Group A in respect of "trust" (25 per cent higher than Group B) and "interpersonal skills" (28 per cent higher than Group B).

Skill Development

Q21. What skills do you feel you have developed as a result of working in a team?

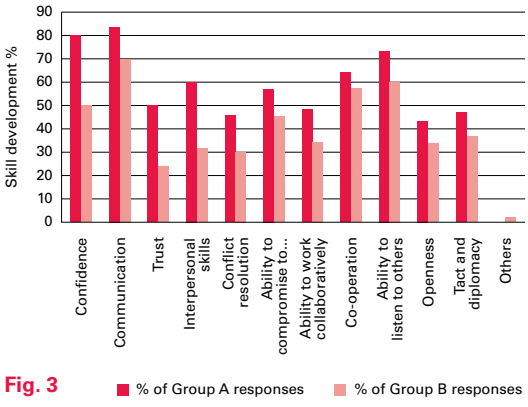


Fig. 3

Conclusion

The fact that students may learn from group activities is not in itself questioned. Inferences from

the case studies suggest that, to develop cohesive group work, a longer-term relationship is advantageous.

However, in contrast, this study argues, based upon the improved skill development of Group A, that knowledge of TRT provides an appropriate toolkit to develop TS *(communication, working with others, problem-solving, improve own learning and performance)* and enables students to be fast-tracked through the various stages of group work development.

Interestingly, this improvement took place over very short time frames, which may be useful to other stakeholders working with groups of people interchangeably. In this case, study knowledge of TRT has contributed to improved performance of HE students working in groups.

Future research

Moving away from the quantitative data presented within this article, our third article next month will review qualitative data obtained from a focus group comprising final-year degree students, thus completing triangulation of three different data sets. Where the questionnaires revealed factual data, a focus group has been used to explore the attitudes and feelings of students who have, arguably, in respect of their skill development travelled through a "passage from detached observer to involved performer…" (Dickinson, p.164 citing Benner). **TJ**

References

1 Belbin M *Management Teams: Why They Succeed or Fail* Elsevier (2007)

2 Edmond N, Hillier Y, Price M "Between a rock and a hard place: The role of HE and foundation degrees in workforce development" *Education & Training Journal* Vol 49, No 3, pp170-181 (2007)

3 Semeijin J, van der Velden R, Heijke H, van der Vleuten C, Boshuizen H "Competence indicators in academic education and early labour market success of graduates in health sciences" *Journal of Education and Work* Vol 19, No 4, pp 383-413 (2006)

4 East of England Development Agency *East of England Skills Analysis: The graduate labour market, Higher Education participation and the knowledge economy* (2003)

5 Moreau M, Leatherwood C "Graduates' employment and the discourse of employability: a critical analysis" *Journal of Education and Work* Vol 19, No 4, pp 305-324 (2006)

6 Fallows S, Steven C "Building employability skills into the higher education curriculum: a university wide initiative" *Education & Training* Vol 42, No 2, pp 75-83 (2000)

7 Jones-Evans D, Williams W, Deacon J "Developing entrepreneurial graduates: an action learning approach" *Education & Training* Vol 42, No 4/5 (2000)

8 Petrova P, Ujma D *Students' Awareness of the Importance of Transferable Skills for Employability* The Higher Education Academy Hospitality, Leisure, Sport and Tourism Network pp 1-9 (2006)

9 Ehiyazaryan E, Barraclough N "Enhancing employability: integrating real world experience in the curriculum" *Education & Training* Vol 51, No 4, pp 292-308 (2009)

10 Greenan K, Humphreys P, McIlveen H "Developing transferable personal skills: part of the graduate toolkit" *Education & Training* Vol 39, No 2, pp 71-78 (1997)

11 SQA "Key competencies – some international comparisons" *Policy and Research Bulletin* no 2 (2003)

12 Sutherland J "Higher Education, the graduate and the labour market: from Robbins to Dearing" *Education & Training* Vol 50, No 1, pp 47-51 (2008)

13 Siebert S, Mills V, Tuff C "Pedagogy of work-based learning: the role of the learning group" *Journal of Workplace Learning* Vol 21, No 6, pp 443-454 (2009)

14 Mutch A "Employability or learning? Group work in higher education" *Education & Training Journal* Vol 40, No 2 (1998)

15 Rossin D, Hyland T "Group Work-based learning within Higher Education: an integral ingredient for the personal and social development of students" *Mentoring and Tutoring* Vol 11, No 2, pp 153-162 (2003)

16 Dickinson M "Giving undergraduates managerial experience" *Education & Training Journal* Vol 42, No 3, pp 159-169 (2000)

17 Bell J *Graduateness: some early thoughts* http://www.leeds.ac.uk/educol/documents/000000068.htm downloaded 12/01/2010 (1996)

18 UK Commission for Employment and Skills *Towards Ambition: skills, jobs, growth: Expert advice from the UK Commission for Employment and Skills* (2009)

19 Sancho-Thomas "Learning teamwork in university programming courses" *Computers & Education* No 53, pp 517-531 (2009)

20 Drummond I "Personal transferable skills in higher education: the problem of implementing good practice" *Quality Assurance in Education* Vol 6, No 1, pp19-27 (1998)

21 Kotey B "Teaching the attributes of venture teamwork in tertiary entrepreneurship programmes" *Education & Training Journal* Vol 49, No 8/9, pp 634-655 (2007)