GEES Small Project on Team-Based Learning – Staff Development Materials

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Introduction

The success of a wide variety of learning contexts has promoted interest in strategies that encourage independent learning, in particular team-based learning to promote learning of subject content and transferable skills. At Kingston University collaborative research is ongoing that examines team selection, operation, training and assessment, the results of which have been published (Livingstone & Lynch, in press; 2000; Lynch & Livingstone 1999; 1998).

As a result of this work we propose a typology of four team-based learning exercises, involving progressive lessening of support and structuring.

1. Training on generic team skills as a study technique.
2. Presentation of team skill materials and selection of roles before the exercise.
3. Presentation of team skill materials before the exercise, followed by self-selection of roles.
4. Sink or swim.

(Livingstone & Lynch, 2000, p.343)

This typology arose from reviewing the literature and comparing our own and colleagues' experiences of using team-based learning at a range of levels from first year to postgraduate. We realised that almost all of the research we had reviewed was focused on a single team-based exercise. We found no research that examined the way of embedding the team experience into the curriculum and explicitly ensuring progression in the development of team skills. The proposal for this project was that this should form the basis for integrating progressive team-based learning into undergraduate programmes. This project therefore had 3 aims:-

1. Review research on the issue of team-based skills in the undergraduate curricula across a range of disciplines, including GDN, TLTP, SEDA and other HEI sector initiatives.
2. Raise issues for discussion among course teams, and School and University bodies charged with Learning & Teaching development, with a view to exploring strategies for ensuring progression.
3. Dissemination of results and experiences at Kingston for wider GEES participants.

The Demand for Team Skill in HE

The arguments in favour of team-based learning emphasise that they provide students with experience close to the type of work environments they are likely to find when entering professional work place. This is also emphasised by the CVCP report on skills, which makes particular reference to team and related skills (Committee of Vice-Chancellors and Principals, 1998). The Government's White Paper on Competitiveness emphasises that the following three foci are important for what it calls the 'knowledge driven economy:-

- "capabilities to adapt and to embrace change encompassing the exploitation of science and technology, enterprise and innovation, capital markets, people and skills
- "collaboration, both within firms in the way they organise themselves and their employees, and between firms in the way they interact in networks and in clusters
- "competition and how increased competitive pressures from more open markets and the growth in foreign direct investment are interacting with the forces driving innovation and increased consumer choice."

(DTI, 1998, Para. 1.2)

It is clear from these three foci that being able to effectively work with other people was seen, by the government at least, as important to the future economy of the country. A recent report commissioned by a large human resource consultancy argued that the future of work will increasingly move from hierarchical structures towards project-based teams (Hewitt, 2001), suggesting that such skills will be increasingly important in the future workplace.

A recent DfES survey of employers' perceptions of skills shortages found that 26 per cent identified team skills as being in shortage. The survey identified a range of other skills including technical, such as IT and languages, however, these are more likely to be provided as part of specialist degrees or on-the-job training. In each of the eight main occupational areas categorised by the DfES either teamworking or management skills were identified as being deficient (DfES, 1999).

Evidence from Employers (CBI, AGR), students (through feedback), the government (DfEE, HEFCE - Benchmarking Statements for *Geography* (QAAb, 2000) and *Earth Sciences, Environmental Sciences and Environmental Studies* (ES^3) (QAAa, 2000)) all point to the need for improving the quality of graduates' skills. Key to the portfolio of skills required, is that of being able to work with others.

This suggests that whatever academics view of team-based learning, there is an expectation among employers that graduates have some level of teamskills. Anecdotal evidence among employers of field-based disciplines, such as the GEES disciplines suggest that employers perceive graduates of these disciplines may have good teamskills because of their fieldwork and similar experiences.

Table 1 Team and Related Skills Shortages Identified by Employers

Skills	% Employers
Team Working Skills	26
Communication Skills	32
Management Skills	16

Source: Adapted from Hogarth *et al* (2001)

This kind of issue may or may not be an argument for the development of teamskills, but the team at Kingston became interested because of two main reasons. Firstly, their own positive experience of team-based learning as learners, which we wanted to replicate for our students. Secondly, because of the nature of our discipline students are learning in teams anyway, we therefore were keen to ensure that we understood the dynamics of this learning experience in order to more effectively manage them. This led us to realise that most of the literature addresses the issue of isolated team-based learning exercises. We could find nothing that explored the issue of how to ensure the development of these skills as students progress through their programme of study.

Previous Work on Team Skills

Geographers have been in the forefront of developing approaches to the development of transferable skills (Gold *et al*, 1991; Healey, & Jenkins, 2000; Jenkins & Ward 1995). Geography and the 'field sciences' have strong traditions of students working in teams. However, the issue of formal progression in a degree programme is rarely discussed. The School of Geography completed an audit of transferable and study skills taught in all elements of the undergraduate programmes shortly before our merger. The evidence from this showed that Geographers and Environmental Scientists teach team skills widely in both field and classroom situations, as well group skills in tutorials, seminars, simulation projects, 'break off' groups and so on. This exercise also raised the issue of identifying and developing progression in a rigorous way across the curriculum. This

research, together with discussions with employers of graduates, has confirmed the importance of students having a team and other skills integrated into, and developed through, their curriculum.

My research (and that of others) demonstrates that team-based learning experiences in class and field contexts have advantages and pitfalls. Most forms of work are carried out in a team and most professional achievements are measured in teams. Graduates, who are not aware of their responses to team-based work situations and not equipped with the skills to enhance their contribution to teams, are therefore not well prepared for most working environments. The body of empirical research clearly identifies teams progressing through a series of identifiable stages. I have suggested elsewhere that there is evidence that the early stages of teamwork present the greatest challenge and that unless students have experienced negotiating these various stages of team building, they will be hampered in their ability to develop team skills.

Theories of learning emphasise differences in learning styles among students. There is an element of theoretical research which can assist the development and improvement of teaching and learning, however, the reflection-in-action model (Schön, 1996) emphasises that there is an element of good practice that cannot be articulated. The starting point for this project was the belief that a well designed team-based learning project ensures teams are made up of students with a range of learning styles (Ramsden, 1992; Raaheim *et al*, 1991). It should ensure that there is appropriate training and support for team formation and management (Radford, 1991) and that the teams progress through the earlier and more difficult stages (Tuckman & Jensen's (1965) 'forming' and 'storming' stages). The intended result is that students have a positive experience of teams (Tuckman & Jensen's later 'norming' and 'performing' stages).

A reflection-in-action approach (Schön, 1996) to teaching and learning, involves seeking feedback from students, views of colleagues, and discussing experiences of learning in retrospect with graduates has influenced much teaching and learning facilitation. The aim of the outputs from this project were therefore intended to provide a structure within which a teaching team could reflect on the way students experience team-based learning and how this could be more effectively structured.

This project set out in particular to facilitate the development of a framework for ensuring progression in team skills teaching and learning within Geography and Earth & Environmental Sciences curricula. The recent launch of a School of Earth Sciences & Geography at Kingston University that includes geography, earth sciences, environmental sciences and related disciplines into one School, put this project in a strong position to contribute to the activities of GEES across the three disciplines.

I have argued in my research that team-based projects can be placed on a continuum that relates to the level of structure and support provided. The suitability these various approaches is influenced by the students prior experiences of such exercises. Generally, the more familiar and comfortable the students are with team skills, the less likely they are to have a bad experience in the team exercise. (Livingstone & Lynch, 2000) However, there is considerable scope for further research, including, how to most effectively integrate progressive team-based learning into a curriculum. Most educational research is based on analysis of single team-based projects, with limited discussion of how they relate to other elements in the curriculum, or indeed other team-based elements. This project addresses the issue of integrating team skills in the curriculum at appropriate levels to ensure teaching and embedding. The aim is therefore to examine how these skills are taught and acquired, and how the conclusions of previous research at Kingston and elsewhere can most appropriately be introduced at all levels in the curriculum.

Outputs

The result was a set of materials that is intended to enable a facilitator to prepare a workshop on team-based learning. This workshop is intended to be run with a course teaching team. The aim is to give the team experience of three contrasting methods of team selection as the method of

selecting varying 'break-out' groups to discuss key issues. The key issues are presented as those relating to the way that team-based learning is delivered in the existing curriculum and how this can be enhanced to ensure progression. This format has been run successfully in the School of Earth Sciences & Geography at Kingston. I hope to refine the materials after running similar sessions elsewhere or based on feedback from those who use the materials elsewhere. These materials include:-

- a short guide discussing the key issues
- A workshop outline guide
- MS Powerpoint presentation, including notes
- guidelines on a workshop format
- reading materials (including a copy of our award-winning paper[i] in which many of these issues are discussed)
- list of additional reading materials, including research, reports and websites.

Conclusion

Among the key arguments in the educational research literature there is a strand that emphasises a strong need to develop high quality team-based learning experiences. Geography's extensive use of teams and groups in field and laboratory work, as well as seminars and outside the class room, makes it well-placed to develop a strategy of integrating progressive team-based learning into the curriculum in a way that is transferable to other disciplines. Missing from previous work is the way different elements of team skills relate to each other and to the curriculum. This project involved the development of a pack of materials to facilitate the discussion of team-skills.

List of References

CVCP (1998) *Skills Development in Higher Education.* Committee of Vice-Chancellors and Principals.

DTI (1998) *Our Competitive Future; Building the Knowledge Driven Economy.* Department of Trade and Industry White Paper, London. http://www.dti.gov.uk/comp/competitive/main.htm

DfES (1999) Skills Task Force Employer Skills Survey, 1999. Department for Education and Skills, London. http://skillsbase.dfes.gov.uk/Narrative/Narrative.asp?sect=7

Gold, J.R., Jenkins, A., Lee, R., Monk, J., Riley, J., Shepherd, I. & Unwin, D. (1991) *Teaching Geography in Higher Education: a manual of good practice.* Institute of British Geographers Special Publications Series; No 24 Blackwell, Oxford.

Healey, M. & Jenkins, A. (2000) Kolb's experiential learning theory and its application in Geography in Higher Education. *Journal of Geography*, vol. 99: 185-195.

Hewitt (2001) *21st Century Corporations.* Hewitt Associates, Lincolnshire, IL.

Hogarth, Terrence *et al* (2001) *Employers Skill Survey 2001.* Department for Education and Skills, London.

Jenkins, A. & Ward, A. (ed) (1995) *Developing Skills Based Curricula Through the Disciplines: Case Studies of Good Practice in Geography.* Staff Educational Development Association (SEDA), Birmingham.

Livingstone, D & Lynch K. (in press) Reflections on 'Group project work and student-centred active learning.' *Journal of Geography in Higher Education.* Vol. 26, No. 2.

Livingstone, D. & Lynch, K. (2000) Group project work and student-centred active learning: Two different experiences. *Studies in Higher Education.* Vol. 25, No. 3. To be republished in 2002 with commentary in *Journal of Geography in Higher Education.* Vol. 26, No. 2.

Lynch, K & Livingstone D (1999) An Analysis of factors in the design of Team-based learning projects. Poster presented at the National Launch of Institute for Learning and Teaching in Higher Education, Queen Elizabeth Conference Centre, London. With D Livingstone (Portsmouth). 6th January

Lynch, K & Livingstone D. (1998) 'Towards implementing small group work and resource based learning: putting Dearing into practice.' 1st *Annual GeographyCAL Conference*, University of Surrey. With David Livingstone.

Tuckman, B. W. & Jensen, 1965 Developmental Sequence in Small Groups. *Psychological Bulletin,* Vol 63 (6), pp384-399.

QAAa (2000) *Earth Sciences, Environmental Sciences and Environmental Studies.* Benchmarking Statement. Quality Assurance Agency for Higher Education, Gloucester.

QAAb (2000) *Geography.* Benchmarking Statement. Quality Assurance Agency for Higher Education, Gloucester.

Raaheim,Kjell, Wankowski, Janek, & Radford, John (Eds) (1991) *Helping students to learn :teaching, counselling, research.* Society for Research into Higher Education and Open University Press, Milton Keynes Second Edition.

Ramsden,Paul (1992) *Learning to teach in higher education.* Routledge, London.

Schon, D.A. (1991) *The Reflective Practitioner: How Professionals think in practice.* Avebury, Aldershot.

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[i] The paper won the 2002 *Journal of Geography in Higher Education* Biennial Award for Promoting Excellence in Teaching and Learning for best academic paper.