

Innovation in Internationalised Problem-based Learning: the Case of SPARC

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Abstract

SPARC (Spatial Planning and Regional Competitiveness) is an internationalised distance learning Module which arises from a trans-national collaborative project funded by the European Union's INTERACT Programme and the Governments of the UK and Luxembourg. It provides a common EU-wide learning platform to enhance skills and knowledge in relation to territorial development, and applies a problem-based learning approach.

Key words: Sustainable Development, Problem Based Learning, Internationalisation

Key points of good practice

- Use of trans-national consortium for curriculum development
- Internationalisation of curriculum content
- Problem-based learning approach relevant to practice

Development and Implementation of the SPARC Module

Reasons for developing SPARC

Requirements for skills and knowledge in relation to spatial planning and territorial development in Europe are currently increasing, because of increasing levels of complexity of policy at the EU level (for instance with respect to concepts such as territorial cohesion), and this has been compounded by European Union (EU) enlargement (Adams *et al.*, 2006). More urgently, there is a need to develop the capacities of spatial planning and regional development practitioners, particularly in newer member states, to participate in structural funding programmes such as INTERREG, for cross-border, trans-national and inter-regional co-operation, and the equivalents in the new structural funding period from 2007-2013, including Objective 3 (for European co-operation).

The SPARC Module seeks to address these needs, by enhancing knowledge, skills and understanding in relation to relevant concepts and principles. In addition, it seeks to enhance appreciation of the linkages between sectorial policies and activities at the EU, member state, regional and sub-regional levels, and their impacts in terms of territorial development. In broader terms, this is intended to assist in the vertical and horizontal integration of EU policies, in order to help achieve EU aims for regional competitiveness, cohesion and balanced territorial development. The Module also seeks to enhance skills relevant to delivering sustainable communities, since the UK's Academy for Sustainable Communities (ASC) asserts that 'Creating great places and strong communities which are prosperous, competitive and cohesive is one of the biggest single challenges facing governments across the EU today' (ASC, 2006, p.1). The ASC also suggests that sustainable communities are necessary to realise broader aims for economic competitiveness and cohesion. This implies the need for enhancement of generic skills aspects such as partnership-building and communication, as well as technical skills, for instance in relation to applying for funding, and project evaluation.

The SPARC project to develop and deliver the Module was initiated in 2004 as a result of the increasing recognition of the above needs for enhanced knowledge and skills, with a particular focus on spatial planning and regional or territorial development practitioners. While it is intended to be equally available, accessible and relevant with respect for all EU member states, the Module has a particular focus on the needs of newer member states in terms of developing their capacity to access and implement EU funding programmes.

Funding of SPARC

Funding for the SPARC project was provided by the Governments of the UK (Department for Communities and Local Government) and Luxembourg (the Ministry of the Interior), as well as the EU's INTERACT Programme. The latter is part of the EU's INTERREG Community Initiative, and it aims to support INTERREG Programme activities. INTERACT is financed by the European Regional Development Fund (ERDF). Funding of approximately £280,000 is allocated to the SPARC project in total. A nominal Module fee to cover additional teaching costs is applied, though reductions, as well as a limited number of bursaries offering free places, are available to encourage participants from newer member states.

Developing the materials

The SPARC Module is delivered via distance learning, with the content provided on CD-Rom. The distance learning mode of delivery provides a flexible, lifelong learning approach that is appropriate to the needs of geographically remote participants in full time employment who are seeking to enhance their professional skills and knowledge (Peters, 2001). It may therefore be seen as a form of continuing professional development, but it also involves associated coursework and a formal Module Award on successful completion. The Module was developed by a trans-national collaborative consortium of partners comprising the Universities of Ljubljana and Luxembourg, the Politecnico di Milano, and Heriot-Watt University (the Lead Partner). Following a tender process, Helsinki University of Technology was contracted by the SPARC partners to provide the Module's 'core units', with the partners themselves providing the Module's 'case studies' (see below). In addition, development of the Module was informed by an 'international advisory group' comprising key academic and practitioner experts from across the EU. An international workshop for invited experts and employer representatives was also held in Edinburgh in May 2006 in order to discuss the draft content of the core units and case studies, and the results were instrumental in framing the final content of the Module.

The SPARC Module was finalised, and made available to students throughout Europe, in November 2006. By March 2007, 29 students across the EU had been enrolled, mainly comprising full-time practitioners in spatial planning and regional and local economic development, with 17 based in the UK, but with others from Belgium, Denmark, Norway, the Netherlands and the Czech Republic. This reflects the anticipated orientation of participants, since the Module is aimed particularly at territorial development practitioners taking part in INTERREG and related programmes for trans-national co-operation. While the project to develop and deliver the SPARC Module ends in 2008, the

project consortium is considering options to allow the delivery of the Module to be continued and possibly extended after 2008.

Content

The SPARC Module consists of two parts, namely (A) a set of 8 'core units', and (B) a 'case study' (chosen by the student from a set of four). More specifically, the structure of the Module is as follows:

A) Core Units:

- Unit 1: 'Introducing Key Concepts'
- Unit 2: 'Competitiveness and Sustainable Development'
- Unit 3: 'Polycentric Urban Development'
- Unit 4: 'Urban-Rural Relations'
- Unit 5: 'Governance'
- Unit 6: 'Regional Co-operation'
- Unit 7: 'Methods and Techniques for Territorial Analysis'
- Unit 8: 'The New Map of Europe'

B) Case Studies (student chooses one of these):

- Regional Competitiveness (case study of east of Scotland regional innovation strategy, produced by Heriot-Watt University).
- Cross-border Management (case study of cross-border [Luxembourg-Germany] management of regional nature parks, produced by the University of Luxembourg).
- Polycentric Urban Development and Competitiveness (case study of Milan city-region development, produced by the Politecnico di Milano).
- Environmental Impact Assessment (case study of trans-national [Slovenia-Italy] development of an overhead electricity transmission line, produced by the University of Ljubljana).

The core units are designed to ensure internationalisation of content, so that this is of equal relevance across the EU. These units introduce generic concepts and principles for instance in relation to balanced territorial development, regional competitiveness, territorial cohesion, sustainable development, and the theory and practice of trans-national co-operation and partnership. They are intended to explore core concepts and principles that are not context-dependent. This reflects the view that it is possible to develop common core principles which apply trans-nationally, for instance in relation to spatial planning, as indicated for instance by the European Council of Town

Planners (ECTP) in its *New Charter of Athens* (ECTP, 2003). These units also introduce core skills and techniques for instance in relation to scenario-building, project management, development evaluation and environmental assessment.

The core units make use of material arising from the European Spatial Planning Observation Network (ESPON), an EU-funded network which aims to increase knowledge concerning territorial development, trends and policy impacts across the EU. ESPON has produced a comprehensive set of trans-national research projects which draw together data on a wide range of trans-European issues such as migration, polycentric development and the achievement of objectives in relation to competitiveness and cohesion. The use of such material within the SPARC Module addresses the need for data that is comparable across all EU member states.

As indicated above, the Module's core units are supplemented by a case study, chosen by the student from a set of four, from summaries provided on the SPARC website (www.sparcmodule.org). The set of case studies offers a range of scenarios and development issues, so that students can choose the case which best aligns with their interests. These case studies are real life and project-based, and they apply a problem-based learning paradigm, with each focusing on a particular problem or issue. Each case study includes an assignment, and the Module Award is dependent on satisfactory completion of this. Typically, assignments require the development of a strategy or action plan in relation to the specific scenario. Essentially, the case studies are designed to test the application of the generic concepts, principles, skills and techniques introduced in the core units, though students can also apply their prior experience. The case studies therefore encourage situated and tacit learning, which are particularly appropriate for professional development (Kolb, 1984). A full range of rich contextual material is provided for each case, to enable students to develop solutions that are sensitive to the local context. The case studies were developed in collaboration by consortium partners, with each partner taking responsibility for developing one case study.

An example of the case studies may be provided by the Regional Competitiveness case study of the east of Scotland. The content of this case study includes an introduction to the notion of innovation strategies, as well as their potential application to the case study area. An array of contextual information in relation to the case study area is also set out, with weblinks providing access to further information on the area. The assignment requires students to:

- a) review and analyse the position of the east of Scotland as an innovative urban region; and

- b) develop an innovation strategy for the region in the wider context of neighbouring regions, as well as other parts of Europe.

The case study allows students to apply many of the principles and concepts introduced in Unit 2 – for instance in relation to regional competitiveness, as well as techniques introduced in Unit 7 – for instance in relation to SWOT analysis (Strengths, Weaknesses, Opportunities and Threats). It encourages the generation of creative responses that are nevertheless realistic and feasible, and which are derived from investigation and analysis of relevant data. They are required to use research and appraisal skills, and to present appropriate data and information to support their argument. Students are required to produce an analysis, a regional innovation strategy and an action plan for implementation of the strategy.

Teaching and Assessment

The Module comprises twelve credits and it is currently validated as an elective (optional) Module as part of Heriot-Watt University's MSc/PG Diploma in Property Investment and Finance Programme. Successful completion of the case study assignment is followed by the conferral of a Module Award by Heriot-Watt University. Students are registered for a period of six months, starting with delivery of the Module materials, and ending with submission, assessment and feedback in relation to the relevant case study assignment. By June 2007, one 'pilot' phase of the Module (November 2006-April 2007) was completed, and a further phase runs from June 2007 – November 2007. Tutorial support (via email or telephone) is available from the project team for the duration of the Module period in which the student is involved.

While final assignments are completed on an individual basis, the Module offers the possibility of optional (subject to demand) locally-based 'workshops' to facilitate collaborative and peer group learning and interaction, with tutor support and facilitation. This is intended to allow deep learning; integration of prior experience, concepts and principles; and understanding of local contextual circumstances. In the second SPARC phase (July-November 2007), such workshops are to be offered (again subject to demand) at each partner location.

Evaluative Comments

Perceived benefits

For students:

The Module seems to meet a clear need in terms of enhanced skills and knowledge to enable more effective application of structural funding for territorial development via European trans-national and cross-border initiatives. This has been confirmed by advice provided by the international

advisory group for the SPARC project, as well as by feedback from other experts at the Edinburgh workshop mentioned above. Email responses to a questionnaire for SPARC participants in the pilot phase indicated that the Module's approach and content was interesting and relevant to the professional context of participants.

For teaching/support staff

The experience of the Module has shown that the use of trans-national consortia for curriculum development can facilitate effective internationalisation of curriculum content, ensuring relevance across different contexts.

Issues/challenges

For students:

The use of English as the language of delivery has led to some problems for students for whom English is a second language. In addition, the geographical dispersion of students sometimes makes the organisation of peer group support, as well as attendance at (voluntary) workshops, problematic.

For teaching support staff:

The original intention of the SPARC project (to develop an extensive, decentralised, polycentric network of deliverers with one in each EU member state, potentially also with teaching in the local language) was not possible in the initial pilot phase because of institutional and administrative constraints. Such constraints included differential requirements within partner institutions in relation to quality assurance, and capacity limits. In this context, there has had to be a trade-off between pragmatic Module delivery, and decentralised delivery. Consequently, to 'operationalise' the Module within the timescale specified, the network of partners has had to be maintained rather than expanded, though the consortium is considering options for expansion, particularly in terms of the range of case studies.

Moreover, while the Module contains generic core units, their development required many iterations and edits in order to ensure accessibility to, and relevance for, all contexts within the EU. However, the clear template provided at the outset, in relation to the content of the core units, substantially assisted in framing the final versions. In addition, the early establishment of a broadly-based, EU-wide network of expert advisers (the 'international advisory group') was helpful in this respect, and this group continues to monitor and advise on the developmental trajectory of the Module, including in relation to detailed issues of content. For instance, the group has highlighted some

areas where additional enhanced content on the European context could usefully be provided, particularly in relation to transport and connectivity.

Furthermore, the provision of case studies by each partner, based in different universities in different member states, meant that different approaches and assumptions were often applied in draft versions. This related for instance to what was to be expected of students in terms of interaction with material, as well as to the appropriate level of support and advice for the assignment that is given within the case studies. This necessitated additional iterations of the case studies. Nevertheless, this is perhaps an inevitable issue within a trans-national collaborative project, and problems in this respect were minimised by the provision of templates for the content and structure of case studies.

Enablers that helped the project to work

The operation of the project has been assisted by the strong and supportive partnership provided by the network of partners. In addition, the valuable external advice provided by participants in the Edinburgh Module workshop in May 2006, as well as the ongoing advice provided by the international advisory group of experts, have also been enabling factors.

Details of project evaluation

An email questionnaire was sent to all (29) SPARC participants in January 2007, and five responses were received, representing a 17% response rate. The issues raised in the responses are referred to above, and substantive comments are also summarised below:

1) Scope of Module

All respondents found the scope of the Module appropriate to their expectations.

2) Content of Module

All respondents found the content of the Module to be appropriate and to meet their needs, and one indicated the content to be 'very interesting and relevant' in relation to their professional work. However, one respondent suggested the content was overly academic in nature.

3) Improvements required to the Module

One respondent suggested the need for a glossary of terms within the Module, and two respondents indicated the need for greater interactivity within the core units, via more use of self-assessed exercises. In addition, one respondent suggested that the language within the core units should be simplified, and another suggested the use of a broader range of illustrative examples from across Europe.

In addition, peer review of the draft content of the Module, provided at the Edinburgh workshop in May 2006, as well as subsequently by the international advisory group, provided positive feedback in terms of the appropriate coverage of principles and concepts, and the use of case studies to enable problem-based learning.

Further feedback on their experience of the Module from all students has been invited as part of the normal, regulatory student feedback process within Heriot-Watt University, since the Module is formally delivered as an elective component of the MSc/PG Diploma in Property Investment and Finance Programme. By July 2007, six responses had been received, representing a 21% response rate. Four respondents indicated that the Module content was interesting, though four also suggested the need for more interactivity within the Module, and two suggested the need for content to be more cohesive.

Advice to Others

Possible improvements/enhancements

The development and application of the SPARC Module suggests the lessons set out below, in terms of possible improvements and enhancements.

1) Academic delivery and administration

Problems arose from unanticipated difficulties with respect to differential requirements in terms of quality assurance within different EU member states and institutions. This affected the participation of SPARC partner institutions as well as the possible engagement of new partners and case study providers in other parts of the EU, and in particular in new member states. Hence earlier consideration of such differential requirements and the implications for the Module (for instance in terms of timescales for academic approval, and the practicality of options for the delivery of teaching and assessment, as well as certification) would have been beneficial.

2) Workshop organisation and delivery

It was not possible to hold a student workshop during the 'pilot' phase of the SPARC Module, as a consequence of the geographical dispersion of the student participants, as well as the need to rely on voluntary (and non-subsidised) attendance, since the workshops do not form part of the assessment and attendance must be self-financing. Improvements in this respect could derive from clearer communication of the benefits of interpersonal or face-to-face components, via the workshops (to encourage attendance), together with greater flexibility in the choice of venue.

3) *Student engagement*

In the pilot phase of the Module, the majority of registered students were UK-based, with relatively few from newer EU member states, though it was a priority of the SPARC project to engage students in such areas. This was in part a consequence of the problems identified in (1) above, in relation to academic delivery and administration, which meant that it was particularly difficult to engage academic deliverers in newer member states. Hence additional case studies were not able to be provided, with consequential difficulty in engaging students in such areas. These problems were compounded by language difficulties, since it may be assumed that the provision (and teaching) of the Module only in English acts as a disincentive for students in many new member states, and the original aim of engagement of a more broadly-based network of academic deliverers was intended in part to enable teaching support in local languages. Improvements in this respect could therefore derive from a more pro-active approach to the engagement of deliverers and case study providers in newer member states.

Points of advice to others who may wish to replicate the techniques used

The approach of the SPARC Module in many respects can be applied in other contexts and fields, and specific advice in this context relate to the issues considered below.

1) *Internationalisation of content*

The problems of internationalisation of content should not be underestimated, with potential difficulties arising from language (for instance with respect to concepts such as space, territory, strategy and planning), and context-dependency of content (this must be addressed and acknowledged where appropriate). This may lead to higher than average resource requirements in terms of staff time, in relation to developing teaching material and associated project work. However, the Module shows that generic concepts, principles and techniques can be developed, as long as these are tightly-focused so as to minimise context dependency. Moreover, the experience of the Module suggests that issues of context-dependency can be addressed in part via the application of a problem-based approach using real-life, locally-embedded and richly-textured case studies and associated assignments. These can facilitate understanding of how solutions must reflect contextual circumstances, as well as provide a valuable means of encouraging creative and innovative problem-solving.

3) The use of trans-national consortia for internationalised curriculum (and project) development and delivery

This is valuable as a means of developing generic, internationalised core content, as well as locally-derived and varied case study projects. Such trans-national consortia are also helpful in offering potential equal access across a wide and varied geographical area covering multiple nation states. The experience of the Module shows that the use of such consortia, particularly when supplemented by other contracted material providers, can enable effective development of internationalised teaching content. However, it also indicates that development and delivery of such teaching materials may be constrained by cultural and administrative factors. Consequently, it is advisable to establish at the outset exactly what barriers (particularly administrative) exist to the achievement of the learning vision, and to set in place agreed protocols and strategies to overcome such problems.

4) Cultural problems in developing and delivering learning materials and project case studies across different national contexts

Development of teaching materials and project-based learning may be constrained by the following:

- language (though local support in host languages can be helpful in this respect);
- differential expectations in relation to student work (protocols in relation to expectations of students, student support, and peer group development, should be made available at the outset); and
- geographical dispersion of students (access to workshops may be difficult, though a wide choice of venues can be helpful in this respect).

Similarly, the development of locally-derived case studies may be constrained by culturally-derived and differential expectations of form, content, and accessibility of project and case study material. Again, the development of a clear protocol and template for such materials can assist in this respect, and these should be set out for all providers at the outset.

5) Supporting international students in project work via distance learning

There is a specific need to support students undertaking problem-based learning and associated project work:

- where they are remote from the project location;
- they are constrained in peer group formation (with for instance no other students enrolled on that project/case); and/or

- they experience constraints due to language.

In such circumstances, enhanced support is needed, though this of course requires additional resources.

Further reading

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www.interact-eu.net

This website provides information on the European Union INTERACT Programme.

www.sparcmodule.org

This website provides information on the SPARC Module.

www.espon.eu

This website provides information on the European Spatial Planning Observation Programme (ESPON).