Living Knowledge
The International Science Shop Network

PERARES
Public engagement with research and research engagement with society

EMBEDDING PUBLIC ENGAGEMENT IN THE CURRICULUM

A discussion paper from the PERARES project[1]

Responsible Research and Innovation (RRI) is a key driver in European research policy, with the European Commission (EC) utilising it as a way of addressing the grand societal challenges by bridging the gap between the scientific community and society at large. This approach focuses on the involvement of all stakeholders, including researchers, industry, policymakers and civil society organisations (CSOs).[2]

This discussion paper argues that earlier stage exposure to the concept of responsible research through the undergraduate and postgraduate curriculum can contribute to this goal. It offers a means to involve CSOs with research, to encourage culture change within university research and to prepare students for a knowledge society. This paper is based on information gathered as part of the EC-funded Public Engagement with Research and Research Engagement with Society (PERARES) project as well as on existing literature.

Whilst there are many examples of good practice involving students in research with CSOs in European universities, this often happens in a fragmented way and is not strategically embedded.[3] The full benefits are not therefore realised either for civil society or for research infrastructure. ***Community Knowledge Exchanges*** or ***Science Shops*** are one model that should be explored further in European universities as a mechanism for creating a cohesive approach to responsible research and exposing both CSOs and students to the concept of RRI at a grassroots level. Science Shops and Community Knowledge Exchanges are small organisations that enable students to carry out social and scientific research in a wide range of disciplines on behalf of citizens and local CSOs. This approach focuses on research *with and for* society rather than research on society. The fact that Science Shops **respond** to civil society's needs for expertise and knowledge is a key element that distinguishes them from other knowledge transfer mechanisms. Most Science Shops are based in universities, where students conduct the research as part of the curriculum. This method utilises resources which already exist in terms of academic supervision time for dissertation and research projects, therefore costs are low.

Community Knowledge Exchanges and Science Shops:

- respond to and develop research needs as expressed by civil society
- negotiate between partners to develop a question which meets the learning needs of the students and the research needs of CSOs
- produce agreed outcomes which contribute to student learning and civil society knowledge
- support research across all academic disciplines in response to many of the challenges in society today, both scientific and social.

These types of mechanisms help to ensure mutual benefit for all parties in the research process. They bring community knowledge into university research whilst offering students a chance to build stronger skills in research and partnership working. They offer a front door for CSOs to universities and support them to participate in the shaping of university research agendas. Over the longer term this can build a body of evidence which allows CSOs to engage with and influence public policy debates more effectively.

The danger is that in delivering on so many different policy agendas, such initiatives can fail to become a priority in terms of policy development.[4] This paper sets out the need for policy, practice and research to support the development of such intermediary mechanisms in European universities.

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1 The Public Engagement with Research and Research Engagement with Society Project aims to strengthen public engagement in research (PER) by involving researchers and Civil Society Organisations (CSOs) in the formulation of research agendas and the research process. or further information on the PERARES project see http://www.livingknowledge.org/livingknowledge/perares

2 According to the World Bank, "Civil Society Organizations (CSOs) therefore refer to a wide of array of organizations: community groups, non-governmental organizations (NGOs), labor unions, indigenous groups, charitable organizations, faith-based organizations, professional associations, and foundations". http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/CSO/0,,contentMDK:20101499~menuPK:244752~pagePK:220503~piPK:220476~theSitePK:228717,00.html Accessed 8/10/13

3 McEwen l and Mason O'Connor, K (2013) Building Staff/Faculty Capacity for University-Public/Community Engagement. UWE/University of Gloucester.

4 Martin, E., and McKenna, E., with Treasure, K. (2011) Embedding Community and Public Engagement Within Regional and National Policy and Higher Education Institutions. Unpublished report for the PERARES PROJECT

Policy Brief

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SCIENCE SHOPS ADDING VALUE TO EUROPEAN RESEARCH AGENDAS

Involving Stakeholders in Research

Given that many CSOs lack the skills, time or funding to gather evidence to influence policy debates[5] this approach offers them an opportunity to put their research needs on student research agendas.[6] This partnership approach means that completed research is much more likely to be of use to CSOs and is in contrast to the 'hit and run' model that some have experienced with university research. Science Shops can give CSOs access to information specific to their region or context and this can enhance the building of evidence based policy. Through Science Shops, CSOs can also influence the formulation of research agendas.[7] This can also enhance the capacity of CSOs to challenge and scrutinise and critically challenge policy proposals and over time can enhance the capacity of such organisations to become involved in research.

Addressing Societal Needs and Challenges

If society is to work to address the grand societal challenges, it needs graduates who are skilled at partnership working, drawing on different kinds of knowledge from multiple sources, thinking flexibly and creatively and applying knowledge and skills. RRI through the curriculum helps undergraduate and taught postgraduate students understand the concept of engaged research and develop the skills and knowledge to carry it out.[8] This gives both students and their academic supervisors a better appreciation of the potential impact, scope and public use of their work which may help them frame future research proposals. Students come to understand that there are many kinds of knowledge and expertise, and that there are diverse and plural ways to address issues within academic research and in society.[9] This outcome of the Science Shop process benefits not only students, but also CSOs. By working with students on research issues, CSOs are informing future professionals about their issues from a grassroots perspective.[10]

Developing Student Skills and Innovative Curricula

According to the EC, students need to comprehend how to apply their knowledge and understanding, make judgements and interpret data, communicate conclusions to different types of audience and develop skills needed to conduct further study in an autonomous way.[11] The Dublin descriptors indicate learning outcomes relevant to qualifications at Bachelor's, Master's or Doctoral level. At all three levels, the ability to communicate to specialist and non-specialist is a prerequisite for achieving a degree.[12] Undertaking independent research helps students to develop critical thinking skills and personal and professional skills which are important assets in the job market.[13] Collaborative research projects offer students real, demand driven and participatory cases to work on, helping them to develop graduate attributes and contributing to graduate employability.[14] The priority of higher education has become teaching students how to continue to acquire new knowledge and, specifically, to *apply this knowledge in a societal context*. It is therefore extremely important to offer this type of experience through the curriculum[15] if students are to acquire the kinds of knowledge, skills and experiences to equip them to play a role in helping to tackle the European Commission's grand societal challenges which are at the heart of Horizon 2020.[16]

Enhancing Student Motivation to Engage with Society

Student engagement with CSOs adds another dimension to the university experience, in addition to the pursuit of knowledge and understanding of an academic subject.[17] The knowledge that the results will be made publicly available can have a galvanising effect on students and encourage them to produce higher quality work.[18] Making work public is also a way of acknowledging the effort put into it.[19]

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5 Gall, E., Millot, G. and Neubauer, C., (2009) Participation of Civil Society Organisations in Research http://www.livingknowledge.org/livingknowledge/wp-content/uploads/2011/12/STACS_Final_Report-Partic.research.pdf Accessed 24/5/13 p.87

6 Stoecker, R. and Tryon, E. with Holgendorf, A. (2009) The Unheard Voices Temple University Press, US

7 ibid p.78

8 Steinhaus, N (2013) Experiences and attitudes of Research Funding Organisations towards public engagement with research with and for civil society and its organisations. Unpublished report for the PERARES PROJECT

9 Martin, E., and McKenna, E., (2012) 'The Science Shop at Queen's University Belfast: Embedding Community Engagement within the Curriculum' pp27-31 in Mason O'Connor, K and McEwen, L (Eds) Developing Community Engagement. SEDA Special 32

10 Ibid

11 These qualities are identified by the European Commission as part of the Bologna Process, known as the Dublin Descriptors. See http://www.ehea.info/Uploads/Documents/QF-EHEA-May2005.pdf for more details. Accessed 27/3/2014

12 For more detail on Dublin Descriptors see appendix Joint Quality Initiative _Reports_Complete Dublin Descriptors 18 October 2004_1999-2003.doc accessed 1/12/13

13 Healey et al (2013) op cit

14 Mason O'Connor, K.,, McEwen, L., Owen, D., Lynch, K., and Hill, S. (2011) Literature Review: Embedding Community Engagement in the Curriculum: An Example of University-Public Engagement. https://www.publicengagement.ac.uk/sites/default/files/CBL%20literature%20review.pdf Accessed 1/8/2013 P.27

15 Mulder, H., (2004) Curriculum Development through Science Shops Paper presented at ICEEM2, Iasi, Romania, Sep 2004 Reprinted (2004) in Environmental Management and Engineering Journal 3 (3), pp. 549-560

16 European Commission EU Research and Innovation: Tackling Societal Challenges https://ec.europa.eu/programmes/horizon2020/sites/horizon2020/files/InfoKit_UK_240214_Final.pdf Accessed 26/3/2014

17 Millican, J. and Bourner, T. (Guest editors) (2011) Special Issue: Student learning from community engagement, Education and Training, Volume 53 issue 2/3

18 Eppink, H., and Wals, A., (2011) Science Shop Activities Embedded into Curricula of Higher Education. Milestone 7.3, unpublished report from the PERARES project P7

19 Healy, M., Lannin, L., Stibbe, A. and Derounian, J. (2013) Developing and Enhancing Undergraduate Final Year Projects and Dissertations http://www.heacademy.ac.uk/assets/documents/ntfs/projects/NTFS_Project_Gloucestershire_2010_final.pdf Accessed 26/7/13 p.74

SCIENCE SHOPS IN EUROPE

European Commission Support

Science Shops have benefited from considerable support through DG Research and in particular Science with and for Society. As a result of programmes funded through Framework Programmes 5, 6 and 7 there are now Science Shops in many European universities. For example, under the FP7 PERARES project (of which this paper forms a part) ten new Science Shop type organisations have been established across Europe.

Examples of Science Shop Projects in European Universities

In response to requests from CSOs to local authorities, the Science Shop at the University of Groningen worked with an Ecology student to study the behaviour of bats when lighting was placed along a bicycle lane in a natural area. The student examined the impact of regular white TL lighting, green LED lighting compared to no lighting. Based on the findings, the municipality chose to use green LED lighting so that bat colonies were disturbed as little as possible.

In Queen's University Belfast, a Social Research Methods student worked with a Gaelic football team to examine the role of positive coaching within the organisation. Her recommendations have been used by the organisation to help develop their coaching strategy which will further enhance the experiences of young people involved in the sport and help them with their goal of retaining players post-age 16.

KEY CHALLENGES

Lack of Embedding

Experience in this field suggests that engaged courses often rely on the commitment of a relatively small number of academic staff. This can lead to courses ceasing to exist when key staff members move on or retire. For engagement to become embedded in the curriculum, it needs to move beyond one or two committed members of staff and become core within academic programmes.

Competing Demands

Universities face multiple challenges, including attracting research funding, recruiting and retaining students, widening participation, providing high-quality education, developing income-generating initiatives and responding to research opportunities with business and public sector organisations. Whilst there are supportive academics and institutions, it can be difficult for leaders and academics to create and nurture opportunities for RRI through the curriculum given the above list of imperatives. There is also no systemic provision of support or continuing professional development in many universities in this field of work.[20]

Recognition

At present, many academics feel they are not sufficiently recognised for their work supporting community engaged learning. Engaged learning can be time intensive and require initial set up as well as ongoing monitoring.[21] In addition, many institutions do not value or reward community engagement through the curriculum in staff promotions or student assessment criteria, nor do they have mechanisms in place to support it. [22]

20 McEwen, L., and Mason O'Connor, K., (2013) op cit
21 Healey and op cit p49
22 Stoecker, R., Tryon, E. with Holgendorf, A. op cit

CONCLUSION

Embedding engaged learning opportunities which combine the pursuit of excellence in education with high-quality public engagement will take time, energy and commitment from leaders and academics in universities and policymakers in the field of higher education at local, national and international levels. Good practice should be developed in this area if students are to engage with issues beyond the boundaries of the university, and to acquire the broad range of skills, knowledge and experience needed for a knowledge economy and knowledge society to flourish.

We need to develop the opportunity to expose future researchers to research impact and engagement at an early stage. The practice of co-creating learning opportunities for students in response to community need takes specialist skills and knowledge. Community knowledge exchanges and science shops can offer effective ways of sharing good practice between disciplines and departments, and supporting engaged learning. The opportunity exists to envision an engaged university system which offers opportunities to undergraduates, postgraduates and staff to take a strategic and systematic partnership approach to research issues. Focusing on building research with CSOs into the curriculum as a policy priority will encourage all groups to move forward towards the vision of RRI.

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Policy Brief

KEY DISCUSSION POINTS

Synergy
How best to harmonise and synergise the different policy agendas to create a context where responsible research and innovation can thrive from undergraduate research onwards?

Support
How universities can be incentivised to set up, value and appropriately resource support mechanisms such as Science Shops and Community Knowledge Exchanges?

Recognition
How universities and academics can be incentivised to develop and support responsible research through student curricula?

Research
What types of research are needed to investigate the benefits and challenges for universities, students and CSOs working on community research issues?

"The aim is to ensure that higher education institutions have the necessary resources to continue to fulfil their full range of purposes such as preparing students for life as active citizens in a democratic society" Leuven Communique, 2009.

'We can only find the right answers to the challenges we face by involving as many stakeholders as possible in the research and innovation process. Research and innovation must respond to the needs and ambitions of society, reflect its values, and be responsible.' [23]

http://ec.europa.eu/research/science-society/document_library/pdf_06/responsible-research-and-innovation-leaflet_en.pdf

"(Universities) must increase their attractiveness; actively promote international mobility of students and staff; provide world-class innovative curricula as well as excellence in teaching and research opportunities; and enter into cooperation and strategic partnerships with other HEIs, government institutions, the private sector and civil society around the world."

European Commission (2013) Communication from the Commisison to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions' http://ec.europa.eu/education/higher-education/doc/com499_en.pdf Accessed 8/10/13

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