

Science Shops Wales: Democratising Knowledge

Steven Robert Harris argues that Science Shops offer Welsh Universities an effective means of supporting civic participation in a democratic and progressive knowledge economy

In a rapidly changing world a “small, clever nation” needs services and institutions which put knowledge production and research expertise at the service of all sectors of society. As the Jones Report¹ points out, Welsh Higher Education Institutions (HEIs) are achieving excellence in research and have built an impressive capacity in knowledge exploitation, working with and for business at levels well above the UK average. However, even more is expected from Welsh HEIs in the future. The Assembly Government’s new strategy for Welsh Higher Education in the 21st Century, *For Our Future* offers a vision of tertiary education which “transforms lives and livelihoods across Wales” while “contributing to the reviving and sustaining of communities and the shaping of a democratic, civilised and inclusive society.”² This linking of the knowledge economy with the promotion of participatory democracy, a common theme across the European Union and beyond, arguably requires universities to renew and extend their traditional knowledge transfer activities, seeking out new means of interaction with the wider society around them.

One such pioneering initiative, Science Shops Wales (SSW), is already underway in south-east Wales. Established at the University of Glamorgan in 2006 with support from the Strategic Development Fund of the Higher Education Funding Council of Wales, Science Shops Wales is now in its fourth year of operation as one of the leading examples of “community-university partnership” in the UK. Its stated mission is “to serve and support Welsh civil society in developing and applying the knowledge and expertise needed to provide equitable, democratic and sustainable responses to the challenges facing Wales in the 21st Century.” Working in close collaboration with University of Wales, Newport, and now establishing contacts and undertaking work with colleagues in Cardiff, Swansea, Carmarthen and Bangor, SSW is providing demand-driven, participatory and user-centred research services to a wide variety of civil society organisations (CSOs) in Wales.

So what exactly is a Science Shop? First established in the USA and Netherlands in the 1970s, Science Shops are organisations that offer citizens’ groups free or low-cost access to scientific and technological knowledge, providing “independent, participatory research support in response to concerns experienced by civil society”.³ CSOs approach Science Shops - the majority of which are based in universities - with problems and issues that require research support and expertise beyond their (often limited) in-house capacity. Trained Science Shop workers help develop these requests into forms suitable for systematic investigation, and then recruit university students and/or staff to undertake the research. Working in close collaboration with the originating CSO, the student or staff researchers then generate results, an interactive process facilitated by the Science Shop which undertakes to provide whatever additional resources - e.g. transport, training or research equipment - may be required by the project. Upon completion of the research, the data and findings are reported to the client; the Science Shop then provides help with using and disseminating the results, and with formulating further research and actions arising from the project.

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Science Shops Wales has eight full-time staff based at University of Glamorgan and a network of contract researchers. During the period 2006–9 SSW has engaged with around 6500 individuals, through contacts and collaboration with over 250 Welsh local, regional and national CSOs. The SSW community research project database usually contains at least 100 individual research questions; access to the database, completed project reports, handbooks, leaflets and other publications is via a website,⁴ which, like all other SSW services, is available in both Welsh and English. At any time 10-15 short-term and three or four major projects are underway, with CSOs making contact either direct through the “hub” at Glamorgan or through one of twelve “contact points” in community buildings across SE Wales. SSW clients and collaborators include community and voluntary groups of all types and sizes, from mother and toddler groups to national NGOs; regeneration trusts and Communities First groups; schoolteachers, pupils and parents; patient groups and health initiatives; and conservation and environmental associations.

The principal activities of Science Shops Wales are service learning brokerage – that is, matching student researchers with external organisations to work on accredited research projects – and bespoke research using in-house or contract researchers. In order for SSW to work with a community organisation, their knowledge needs must meet certain clearly defined criteria. Firstly, they must be capable of translation into clear research questions that are tractable and practicable within available resources; SSW staff will support this translation process, often a useful learning exercise in itself. Secondly, the client organisation must not have the full financial means to access research expertise by other routes; Science Shops research services are intended to complement, rather than compete with, other, more conventional knowledge transfer routes. Clients must agree that the results of Science Shops research will be “open source”, that is publicly and freely available for use by all. Finally, there is an ethical dimension; priority is given to projects oriented toward the promotion of social, environmental and cognitive justice.

Many CSOs around Wales are attempting to replace or supplement their dependency on grant funding with more sustainable forms of income from community social enterprise; some are also trying to build local resilience to threats such as climate change and peak oil. SSW projects have included both theoretical and applied research with sustainable community food production initiatives across south-east Wales, including a ground-breaking feasibility study on a proposed indoor, hydroponic vertical food production centre in the Garw Valley; various permaculture design initiatives; renewable energy feasibility studies on community buildings – schools, pubs and even a whole valley; and support for a consortium of CSOs to research, plan, build and then open and run two 100% recycled biodiesel distribution points in the Cynon Valley and Rhondda Fach. Many requests from CSOs also involve a training or capacity-building element. SSW has gained considerable experience in supporting activities such as community biodiversity audits, working in partnership with wildlife and conservation experts to upskill local citizens’ groups. SSW has been working with UK Climate Impacts Programme on the WLGA-led “Changing Climate, Changing Places” project with local authority staff; with the National Museum and Gallery of Wales to produce a climate exhibition, now touring Wales; delivering a variety of workshops to housing associations and voluntary organisations; and distributing literature, including a bilingual series of specially-written, readable leaflets on a variety of scientific, technical, social and economic topics.

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The international Science Shops movement to which Science Shops Wales belongs brings together organisations in more than 34 countries around the world, all working with "science" in its broadest sense of the social, human, natural, physical, engineering and technological sciences. Strongly supported by the EU under successive framework programmes, the Science Shops process has been shown to provide an effective means of generating new, societally-relevant knowledge and of adapting and combining existing knowledge to specific social, economic and cultural contexts. The benefits to CSOs of working with Science Shops are clear; they are supported to extend their understanding of, and capacity to act upon the specific issues and problems which confront them. Experience has also demonstrated that multiple benefits accrue to those HEIs which host Science Shops. Student researchers use their community-based research to fulfil coursework commitments - typically through Honours or Masters' projects - often greatly enriching their student experience and subsequent employability. Academic staff generate data, publications, and novel research topics and directions, while gleaning a rich harvest of case studies to support their teaching. For the University as a whole, Science Shop activities simultaneously fulfil each of its three core "missions" of research, teaching and service to society, while providing a means of strengthening links and enhancing relationships with local communities.

The relatively late development of Science Shops in the UK has been ascribed to a general neglect of civil society under Conservative governments. Only with the election of New Labour in 1997 did the development of civic organizations return to the political agenda. Since devolution Wales has forged ahead in this respect, although, as Elin Royles and other commentators have pointed out, there is still a long way to go before we have a truly "pluralist political culture in post-devolution Wales".⁵ In an era of rapidly accelerating change and multiple challenges - from economic turbulence to climate change - access to knowledge is indispensable to democratic participation. The distinctive, "bottom-up" Science Shops approach supports the emergence of fully contextualised, localised and distinctively Welsh forms of knowledge and expertise, offering a model of dialogic, upstream engagement with civil society which arguably goes some way beyond other, more "top down" approaches to science-society interaction. At the national level, Science Shops can facilitate public engagement with, and shaping of, processes and policy around science, technology and innovation, allowing citizen's voices to be heard in an arena all too often dominated by state and corporate interests. Unfortunately, Science Shops can be difficult to finance, as the multi-faceted, interdisciplinary nature of their work means they do not easily fit into neat funding categories. HEFCW has shown great vision in enabling a pilot service that already far outstrips provision in other regions of the UK. Is it too much to hope that in the future Wales will emulate other advanced democracies such as the Netherlands and Canada by establishing a permanent, national network of Science Shops in our Welsh universities?

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¹ Review of Higher Education in Wales, 2009.

² WAG. (2009). For Our Future: The 21st Century Higher Education Strategy and Plan for Wales. Cardiff: Welsh Assembly Government.

³ See www.scienceshops.org

⁴ www.scienceshops.wales.org

⁵ Royles, E. Revitalizing Democracy? Devolution and Civil Society in Wales. Cardiff: University of Wales Press, p. 171.