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Higher Education, Development and Partnerships: STEM Education and Community-Based Learning in Vietnam

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The DCU in the Community Papers series addresses issues of concern to the community where a research perspective can be translated into practical action. It seeks to engage with critical thinking- from wherever it might emerge- and promote empowerment through research. The views expressed here are purely those of the authors.

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Introduction

This study addresses the changing role of higher education in the development process and the particular challenges faced in Vietnam. We explore the relationship between community-based/service learning and STEM (Science, Technology, Engineering and Maths) subjects in general and in a Vietnamese setting. We report on a collaboration/partnership between a Vietnamese and an Irish higher education institutions supported by the Vietnam Ireland Bilateral Education Exchange (VIBE) the overall objective of which was to contribute to Vietnam's socio-economic development priorities by encouraging mutually beneficial development links between the two countries, with particular reference to third-level education and research cooperation. The specific objective was to act as a catalyst to encourage and deepen third-level education and research links by supporting commencement of a number of new linkages between Irish and Vietnamese education and research institutions. We seek to learn from this collaboration about development partnerships in general and how this might feed back into development education.

Higher education and development

The role of education and higher education in particular, in the social and economic development process has been a subject of debate for many years. Higher education is generally seen as an engine of development insofar as it can enhance the skills needed to move towards an innovation economy rather than a resource-extraction model. An influential World Bank report, 'Higher Education and Developing Countries: Peril and Promise' (World Bank, 2000), argued persuasively that without more and better higher education, developing countries would find it hard to engage with the new global knowledge-based economy. If knowledge - not manufacturing or resource extraction – is to be the driver of

global development then IT, biotechnology and other innovative technologies would need to be prioritised in development plans. However, in practice international development agencies have tended to not prioritise higher education.

Given that higher education spending was in competition with the rest of education it was always going to be subject to economic and political pressures. With the average cost of educating someone at third level being anything up to 50 times greater per annum than the cost of education at primary level it was easy to see which would be deemed better 'value for money'. Internal World Bank reports of the 1980s (e.g. Colclough, 1993) fed into a widespread public policy preference for investment in basic education over higher education throughout the 1980s and 1990s. A further argument was made that those who accessed higher education in the developing world were relatively privileged. Thus, effectively, the rural poor where high levels of illiteracy prevailed, could be seen to be subsiding the urban elite. This paradigm was deficient insofar as it tended to segment education rather than see it as an integrated system where all elements were necessary and could not be played off against each other in a zero-sum type game.

Today, there has been a shift back towards prioritising higher education in development debates, not least because of the emphasis on knowledge as noted above. Francisco Marmolejo, third level education lead at the World Bank, has argued recently that 'Tertiary education is instrumental in fostering growth, development and poverty reduction. Tertiary systems play multiple roles beyond the teaching and research functions historically associated with tertiary education institutions' (Marmolejo 2016: 14). Higher education plays a role both in terms of a 'private good' (enhancing an individuals' employment opportunities) and as a 'public good' (creating the educated workforce essential for development in a globalised knowledge economy). These high level principles still face two major problems:

1. There is little evidence that post-colonial countries can compete on equal terms with the powerful nation of the world (see Arrighi et al., 2003).

2. While globalisation has led to some decline in absolute poverty worldwide, the levels of inequality between and within countries have increased since 1990 (see Milanovic, 2016).

In Vietnam, often seen as a success story for the neoliberal market oriented model, enrolment at tertiary level has grown dramatically since the start of the century. Enrolment in higher education as a proportion of the total college-age population rose from 10 percent in 1990 to 15 percent in 2005 to 25 percent in 2014 (UNESCO, 2016). This expansion of higher education attendance would inevitably place severe pressures on the system. As a World Bank report puts it: 'the fast growing Vietnamese economy and the increasing need for innovation and higher quality skills is putting demands on a higher education system that is not yet fully equipped to respond' (World Bank, 2008: xiii). The results of this pressure can be seen in many domains. The majority of academics in higher education institutions do not engage in research, governance structures are weak and quality assurance mechanisms are feeble. Above all, poverty remains

an important barrier in accessing higher education, with the World Bank recommending that 'improving the accessibility of higher education for the poor should thus be a key priority of the government as the higher education system expands' (World Bank, 2008: xxi). With access and widening participation seemingly being in contradiction with efficiency there is a risk that equity will lose out in the struggle although, of course, this depends on politics.

The role of higher education in pursuit of development needs to be set in the wider context of changing economic policies in Vietnam. Since its victory over the French colonialists in 1956 and reunification of the country following the victory over the United States in 1975, the Vietnamese Communist Party set policy in a socialist planned economy direction. This was to change in 1986 when the Party decided on a shift from a centrally planned economy to a regulated market system. Its impact was immediate and systemic: agriculture was wholly privatised, private property rights were reintroduced and control over foreign trade was eased. The policy of Doi Moi (economic renovation/open door), similar to the Deng reforms in China in the late 1970s, led to considerable economic reactivation although GDP (Gross Domestic Product) per capita increases masked increasing levels of inequality. However, Doi Moi did not have an immediate impact on higher education at least until 1993 when the government committed to the restructuring and unification of the higher education system and declared that all people in Vietnam should have the right to pursue higher education.

The current policy context for higher education in Vietnam is set by the Higher Education Reform Agenda (HERA) 2006-2020 (Government of Vietnam, 2005). It projected a higher education system four times larger than it was at the start of this period. It seeks to promote a system that is more research-oriented and more aligned with international quality benchmarks. Above all, it envisages a much greater role for the private sector in terms of research but also in terms of education provision, including international providers. In practice, as the World Bank noted 'while HERA lays out a set of goals and targets for the higher education sector, it does not address how these will be realized overtime, which will likely weaken implementation' (World Bank, 2008: xii-xiv). This may be the case but we can also question whether opening up to the global market and

promoting the involvement of the private sector is, indeed, the panacea that the World Bank sometimes (though not always) assumes that it is. There are many lessons to be learnt from Northern country experiences with privatisation.

Ireland has a relatively small overseas development aid programme but it has had considerable impact insofar as it is most often targeted in strategic countries and sectors. In the belief that investment in human capacity is a cornerstone of Vietnam's national development policy, Ireland has been supporting successive Vietnam Socio-Economic Development Plans since 2005. Vietnam has requested that, as well as financial support, Ireland would share its own development experience and expertise in areas such as third-level education and enterprise development. Ireland's own turn towards externally-oriented growth from the mid-1980s onwards has shown a strong commitment to the role of higher education in development. This is seen as a core engine for growth promoting enterprise opportunities but also the so-called 'soft skills' of communications, problem-solving and critical thinking skills. Despite setbacks caused by the 2008-09 global financial crisis, the higher education sector in Ireland continues to play an important role in the country's economic development. That is not to say that the role is unproblematic or un-contested, and it would be wrong to see any country as a model of best practice in what is, after all, a very controversial terrain.

An MOU (Memorandum of Understanding) signed in 2011 between Ireland's Department of Education and Skills and Vietnam's Ministry of Education and Trading provided an enhanced platform for collaboration between the two counties. As part of that collaboration Ireland's overseas aid department, Irish Aid, launched the VIBE (Vietnam Ireland Bilateral Exchange) programme in 2015 (Department of Foreign Affairs, 2015). Its overall objective is to contribute to Vietnam's social-economic development priorities through mutually beneficial third-level research cooperation. It is hoped to act as a catalyst for longer-term linkages aimed at capacity building and the enhancement of research for development. One of the partnerships, reported on here, is between Vietnam National University - Ho Chi Minh City University of Science and Dublin City University, to build on existing capacity in the area of STEM (Science, Technology, Engineering and Mathematics) teaching through community-based learning. This approach to STEM education - deemed critical for successful economic development - seeks to develop a strong sense of social responsibility and foster creativity and engagement. We are seeking to build on the proof of concept work done in Ireland to test and develop this approach collaboratively in a development context. It is relatively unique and there is not a huge body of work and experience to build on so inevitably our conclusions are tentative and subject to further testing. In particular, we would argue that national developments in Vietnam in terms of STEM teaching and its prioritisation in terms of the social mission advanced in the community-based learning approach would be critical in determining whether this pilot study can be generalised and rolled out on a broader terrain.

Community-Based learning and development education

Community-based (or service) learning has gained in importance over the last 25 years both in the advanced industrialised countries and in the so-called developing world. Traditional models of teaching and learning are coming into question insofar as they do not answer the needs of a complex, fast-changing and more integrated world (see McIlrath, Lyons and Munck, 2012). Community-based or engaged learning goes beyond the traditional learning model to place students in the 'real world', to understand how it works and how socially engaged knowledge can change it for the better, hence it often may explore issues of civic, social or cultural importance. It is practical and active learning, an experiential rather than purely theoretical building of knowledge. It goes beyond the narrow curriculum to encourage students to make a shift from knowing about the world, to acting in and being in the world (see Barnett, 2005) - a quality perhaps shared with development education approaches (see Gaynor 2010). While the format and purpose of community-based learning differs across countries and different types, of university, it always strives to make learning relevant and teaching engaged. CBL activities respond to the needs identified by community partners, and the community is seen as a valuable learning resource for higher education students and staff alike. The 'ivory tower' image of the university - distant from society, immune from external pressures - is no longer relevant, if it ever was.

The related concept or practice of 'community-based research' (see Munck et al., 2016) has sought to prioritise local knowledge over universal knowledge and also values experiential over abstract knowledge as community-based learning does. Instead of the commercially oriented 'knowledge transfer' model (where universities sell their self-generated knowledge) this new CBR approach advocates 'knowledge transformation', that is the university becomes enriched through engaging with communities and citizens. Campus Engage, the Irish national platform for civic and community engagement, has defined engaged research as: "a wide range of rigorous research approaches and methodologies that share a common interest in collaborative engagement with the community and aim to improve, understand or investigate an issue of public interest or concern, including societal challenges" (Campus Engage, 2016: 4).

We would argue that community-based learning and community-based research need to go hand in hand to develop more robust and sustainable knowledge for social transformation.

It is worth exploring some similarities of community-based learning/research with development education. There are ongoing debates on the nature and orientations of development education, education for human rights and education for democratic participation, and its space within the increasingly globalised and neoliberal higher education sector (see Khoo 2017; Gaynor 2010). However, in general terms, the aspects of development education most frequently highlighted are the importance of praxis, reflexivity, global solidarity, justice, change and transformation of unjust and unequal structures (see Khoo and Lehane, 2008, Gaynor 2010). Irish Aid, for instance, offer this definition:

"Development education is a lifelong educational process which aims to increase public awareness and understanding of the rapidly changing, interdependent and unequal world in which we live. By challenging stereotypes and encouraging independent thinking, development education helps people to critically explore how global justice issues interlink with their everyday lives. Informed and engaged citizens are best placed to address complex social, economic and environmental issues linked to development." (Irish Aid 2017: 6).

Other crucial elements of development education are also emphasised, e.g. critical reflection on global challenges, solidarity, linking theory with practical action, and development of global citizenship values among learners (Irish Aid, 2017)

It is clear that community-based learning/research done right shares many of these principles. CBL/CBR provide experiential learning opportunities for higher education students where they can translate theoretical classroom knowledge into practice that is not only relevant to the world outside academia, but also one that produces social good. Through CBL, higher education students are not only passively exposed to, and asked to navigate, realities and experiences that are

different from their own, but also forced to reflect on their role as individuals, students, future graduates, and citizens who will shape the future of our global communities. Similarly to development education, CBL as a pedagogical approach also encourages students to act upon their reflection, and act for change and transformation, hence emphasising praxis. Through engaging in CBL, our students are encouraged to think independently, creatively and problem-solve. There is also space for negotiated learning, and co-creation of one's learning experiences, so rare an opportunity in the current higher education sector.

As pedagogical approaches, both community-based learning/research and development education can be comfortably located under the umbrella of critical pedagogies inspired by, among others, Freire, hooks or Giroux. In both CBL/CBR and development education experiential and reflective learning is taken further by adding on a political and social justice component and awareness raising, particularly around inequalities, power and oppression in society, but also within the higher education system itself, creating "healthy spaces for critical reflection and contestation" (Khoo and Lehane, 2008) in our HEIs. In both CBL/CBR and development education, community and society are viewed as learning resources, sources of knowledge, and partners to co-produce knowledge with.

Community-Based learning and STEM education

STEM education is seen as crucial to economic development both in terms of 'catching up' and in terms of 'keeping ahead'. A report in the United States in 2013 stated that 'the United States is losing its competitive edge in math and science while the rest of the world soars ahead. Our knowledge capital, which fuels innovation and economic growth is at risk' (cited in Campus Compact, 2012: 34). Despite the growing demand for STEM jobs, employers find there is a lack of qualified candidates for which they blame government and / or teachers. In the United Kingdom, we have seen a similar discourse emerging. Sir James Dyson (of Dyson vacuum cleaners fame) has argued that there is a massive deficit of engineers today and that large projects such as power stations are being 'built by the French and owned by the Chinese' which, for him 'demonstrates the impact of Britain's skills shortage and our lack of ambition' (cited in Stassen, 2013). The shortage of skilled labour in the science, technology, engineering and mathematics sectors may or may not amount to a 'STEM crisis' but it is clearly an issue that needs to be taken into account in a project such as ours.

The role of STEM in terms of 'catching up' with the advanced industrialised countries is equally important. Historically, the post-colonial countries adopted a model based on intensive industrialisation to complement their primarily agricultural base. Science and technology were key components of the socialist and nationalist development drives. Since the onset of globalisation from the 1990s onwards this development paradigm has been replaced by one based on 'jumping' the industrial phase of development to enter directly into the new high-

tech information/communication based development model. The 'STEM crisis' in this context is cast in a different light to the US or UK. Effectively these countries are being asked to join a global market already dominated by giant transnational companies. In a world characterised by financialisation that cuts across national autonomy and ICT giants (Google, Facebook, Apple, etc) it is hard to see how greater STEM training can, in and of itself, create competitiveness.

From the perspective of our Vietnamese / Irish partnership around community based learning (CBL) and STEM education, we now need to ask how CBL/CBR could address the 'STEM crisis'. According to Campus Compact – a US civic engagement platform – 'research reveals that quality service-learning is a teaching method that increases retention, enhances learning outcomes, and improves certain workforce skills through applied learning' (Campus Compact 2004: 4). Furthermore, there is an intangible benefit in terms of increased student confidence, self-esteem and ability to work in a multi-cultural context. Projects in the STEM education area lend themselves particularly well to community participation, and create a dynamic whereby both partners - university and community – can benefit from the synergies created by new ways of engaging knowledge with social needs. Students always benefit from gaining new core competencies – in 'soft' skills for example but in other ways as well of course – that complement the technical knowledge of STEM education.

We must also be aware, however, of the obstacles faced by good quality community-based learning in the STEM subject areas. Connecting numeracy to social justice, for example, may be fascinating but it is also a challenge. More practical problems that emerge centre around the considerable time demands placed on community-based learning approaches compared to more traditional pedagogies. There is also considerably little material for the teaching of STEM education through CBL. Establishing links between theory and reality is never simple and it depends on a considerable amount of relationship building. Perhaps the main problem at an institutional level is the lack of recognition for community-based learning methods from university administrations brought up in a more traditional and hierarchical education system. Doing STEM work through CBL is thus transformative not only in terms of knowledge-society relations but also in terms of institutional transformation. Could combining STEM education with community-based learning in some way reconcile the two scenarios for higher education outlined by Khoo and Lehane (2008) - the one of market rationality and of democratic deliberation?

In Ireland, STEM education is seen as central to the ambition to be an innovation leader at the forefront of technological and scientific change. International development studies have always stressed the importance of STEM education in terms of harvesting knowledge for social development. The higher education system has increasingly stressed the importance of STEM since the opening up of the economy in the 1970s. However, over time the deficits in this area have been recognised. Not least is the overwhelming reliance on the R&D (research and development) capacity of the transnational IT and pharmaceutical companies. Furthermore, a government review of STEM education in 2016 found that:

"The overall levels of performance and engagement in STEM education are not good enough if we aim to provide the best for our nation's children, and if we wish to sustain our economic contributions for the future" (STEM Report 2016: 3).
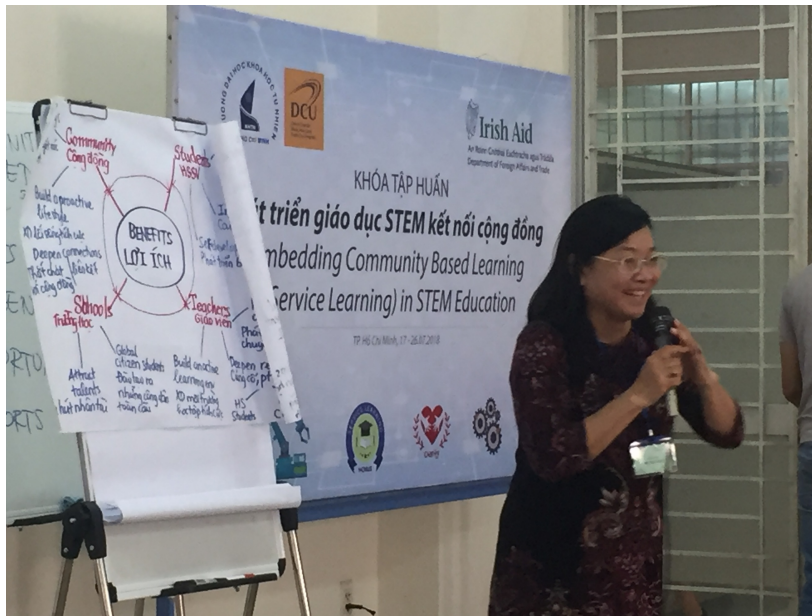
The poor take up in STEM education in schools is now a pressing problem in Ireland, a problem shared with Vietnam and other countries.

In Vietnam, STEM education is being promoted as an integral element for economic development and global competitiveness. Traditionally, R&D in Vietnam took place in research institutes rather than in universities, as in the Soviet model. This institutional separation between research and teaching has hampered the development of STEM education amongst others. One survey of research publication in Vietnam found that 'without question, the most important factor explaining the weakness of applied sciences, such as engineering, in Vietnam, is the inadequacy of government policy and a lack of investment in research and training capacity' (PD Hien, cited in World Bank, 2008: 34). Despite HERA, it is only the two national universities (Hanoi and Ho Chi Minh City) that allocate funding to research and even in those cases it is only 10 per cent and 5 per cent respectively (Crawford and Tran 2015:4). The expansion of the higher education system - and an emphasis on equity of access – has only accentuated the deficit in terms of high quality engaged research. We are not suggesting an elitist model as a politically viable alternative but we do need to be aware of the possible trade-offs between equity and efficiency.

Community-Based Learning at VNU-HCMCUoS

In July 2007, service learning (SL) was first introduced into higher education in Vietnam by the establishment of the Center for Educational Excellence (CEE), a community–university engagement facilitation unit at Vietnam National University - Ho Chi Minh City (HCMC) University of Science (VNU-HCMUoS), which is a result of a collaboration between VNU-HCMUoS and Portland State University. In the same year, the SL approach was first implemented in a Wastewater Treatment course/module by Dr Phung Thuy Phuong. This course brought a new wave of enthusiasm for studying for the third level students who participated, raising their awareness in terms of their social responsibilities through contributing to solving social problems. With limited support in terms of human resources, precarious community partnerships and overloaded curricula, the course was not repeated in the following years. In 2009, service learning approaches started to emerge at other universities and institutes in Vietnam but then gradually disappeared, with main reasons identified as the difficulty in finding appropriate community partners, overloaded and theory-focussed curricula, and the lack of funding resources.

Nevertheless, the positive impact of applying service-learning approaches in higher education has been recognised. Since 2012, Nhi Phan, a lecturer at the Faculty of Mathematics and Computer Science at VNU-HCMCUoS, continued incorporating SL into the module she has taught to support the community of visually impaired students. As a part of the module, the VNU-HCMCUoS students have been asked to design and build 'models' (or teaching aids) to enable visually impaired students in local primary and secondary schools to better grasp STEM concepts. It was noticed that third level students engaged in that module have displayed a deeper interest in studying and greater creativity when tasked with applying theory learnt in the classroom in 'real-world' practice.

Additionally, the students reported that apart from gaining this real-life experience, their learning became more meaningful through service to the community, which in turn resulted in the enhanced understanding of their social responsibilities. At the same time, the quality of education for the visually impaired pupils that VNU-HCMCUoS students have engaged with has been significantly improved. The teaching models/aids created by third level students resulted in stronger educational attainment among the visually impaired pupils, potentially opening more access opportunities into higher education and employment. Again, despite clear benefits of incorporating SL approaches in third level education - both for university students and community partners - the obstacles to embedding SL more widely across the higher education sector in Vietnam remain. The challenges of labour and time required, overloaded curricula and lack of financial and human resources need addressing.

Vietnam-Ireland cooperation

The policy context in Vietnam mentioned above - HERA and the Vietnamese government's focus on promoting STEM as an integral element for economic development and global competitiveness - coupled with the launch of the Irish Aid-funded VIBE programme, provided an opportune moment for HCMC University of Science to reach out to Irish partners with expertise in civic engagement and STEM education with a view to embed SL-STEM approaches in the wider higher education sector in Vietnam. In July 2017, Dublin City University (DCU) was identified as such a partner. DCU was one of the first higher education institutions in Ireland to develop and launch an explicit civic and community engagement policy and pursuing active engagement with surrounding communities has been a significant feature of every DCU strategic plan since. The university was also one of the founding members of Campus Engage and co-led the development of the Charter for Civic and Community Engagement which was signed in 2014 by Presidents of 27 Irish universities and institutes of technology (DCU, 2017). DCU also has a strong local presence through DCU in the Community - a dedicated community outreach centre located off-campus - which has been lauded as a best practice example in bridging the 'town-gown' divide.

The University of Science and DCU teams jointly developed a proposal 'Embedding Community Based Learning in STEM Education for Socio-Economic Development and Active Citizenship' and were successful in securing funding support from Irish Aid through the Vietnam Ireland Bilateral Education Exchange (VIBE) programme in 2017, which marked the beginning of our partnership. The key objectives for the partnership were:

1.   To identify existing SL initiatives and good practices in STEM education at both partner universities – benchmarking and scoping.

2.   To provide training in SL methodologies, principles, rationale and benefits to key staff, students and community stakeholders; and to stimulate change in STEM education curricula to incorporate SL methodologies.

3.   To implement, assess, evaluate, display and disseminate agreed student-led SL projects with selected community partners e.g. organisations working with women, persons with disabilities, older and mature learners or other groups that may be marginalised or underrepresented in STEM education.

The key activities for the partnership under the VIBE programme included the development of training resources and provision of training courses and events in Vietnam and Ireland; mutual study/training visits; the organisation of an international symposium on service learning and STEM Education, as well as an international student competition for service learning in STEM projects.

Vietnam-Ireland Cooperation - outcomes

Since the start of the project in January 2018, it has displayed a strong positive balance sheet in all of its activities. Early in 2018, the partners developed and published a suite of materials for SL-STEM training, including a brochure on best practice in service learning in Ireland and Vietnam. The two-week training course titled 'Embedding Community Based Learning (SL) in STEM Education', co-delivered by Irish and Vietnamese partners in July 2018 at VNU-HCMCUoS saw the participation of 60 lecturers, 60 student leaders, five community partners and university administrators from across the country. Subsequent two x 2-week training programmes delivered by the Vietnamese partner attracted similarly strong attendance, with overall numbers of over 600 individuals (lecturers, school teachers, students, university administrators and community partners) participating across the three iterations of the jointly designed training programme. Additionally, over 150 participants (from schools, NGOs, and third level institutions) attended the first Symposium on CBL and STEM Education organised by the Vietnamese partner at VNU-HCMCUoS in December 2018 with speakers from Ireland, Hong Kong, South Korea and Pakistan. The conference proceedings have been published. Over 130 individuals took part in the first International Service Learning competition held in August 2019 in Ho Chi Minh City, representing 29 projects (22 from Vietnam and 7 from Ireland). The competition judging panel comprised experts from Ireland and Germany. Over the course of the VIBE project duration, Vietnamese partners participated in two study visits to Ireland.

We recognise, however, that figures and numbers only tell a part of the story, and we feel it important to also give voice to those who participated and benefitted from this Irish-Vietnamese collaboration.

"Thank you very much to SL-STEAM group from VNUHCM-University of Science has built this meaningful program and the Irish Embassy in Vietnam, Irish Aid supports the cost. It's motivating us to pursue the great project – sharing music with students - in Nguyen Dinh Chieu Special School." (Ms Nguyen Thi Lan Chi, music teacher in a school for visually impaired pupils in HCMC)

"I extremely liked [participating in the projects] and I feel I had a very positive relationship with service learning. Moreover, during many times of interacting with students from high schools to trigger their interest in basic science, I feel that my motivation is getting much bigger" (Pham Nguyen Trung Nghia, student on The Optimal Teaching Methodology who took part in SL projects in a school for visually impaired pupils).

"I'm very satisfied with the activities SL-STEAM group organized in 2018 (from content to formality). I am feeling that I learned a lot of things, opened my mind. I am ready to participate in the next activities organized by SL-STEAM" (Mr Dang Le Anh Tuan, a lecturer in the Biology and Biotechnology Department, University of Science, HCMC).

With this evaluation of our Irish-Vietnamese collaboration project, we feel we have established 'proof of concept' in terms of our original objectives. It is clear that our work was effective in reaching out to teachers, students and communities to promote community-based/service learning in STEM education. What we need to consider now is what we might have learnt in terms of partnerships in North-South educational collaboration and what the relevance of these lessons might be for development education.

Reflecting on partnerships

There is now considerable reflection on the theory and practice of partnerships in a development context.   It is now recognised that these North-South partnerships 'are often characterised by a range of asymmetries between the two partners, in resources, institutional capacity and power' (Bailey and Dolan, 2011: 11). In our case the usual asymmetry in relation to control of funding did not apply insofar as finance was controlled by the Southern partner. In our partnership, we attempted not to reproduce the Northern/Western superior - Eastern/Southern inferior dynamics, and avoided the simple transfer of the Western/Northern expertise and expertise paradigm. But the uneven nature of the partnership was evident in many other ways in relation to experience, publishing contacts and so on. The current debates seem to be concluding that the power imbalances should be recognised and not be hidden under the vague feel-good language of partnership. 'Stop using the rhetoric of partnership uncritically' (Hatton and Schroeder, 2007: 161) we are advised.

Our own reflexive exercise around the nature of the Vietnamese/Irish partnership was a valuable part of our collaboration as we moved into a second phase following the work reported on here. This second phase has, inevitably, a major focus on sustainability. We were under the usual pressure as Hatton and Schroeder report that 'while most donors will require a plan for sustainability, the time frame for achieving this is arbitrarily decided by the length of the funding programme, which most often is three to five years' (Ibid: 160). Before moving forward, we needed to think through the motivations and expectations from both sides around the original partnership. Mutual learning and global solidarity, the desired objectives in theory are possible but it is by no means automatic in this type of collaboration that is geared towards donor priorities and the pragmatic meeting of these by both parties.

The original getting together had a certain random nature to it. The Vietnamese partner responded to a call by the Irish Embassy in Vietnam for collaborative work with Irish higher education institutions. The Irish Aid rationale was to assist the Vietnamese drive to gear up the higher education system to better serve the new open market-driven economy. Priorities were not dissimilar to those in Ireland at the inception of the Celtic Tiger: agribusiness, enterprise development and innovation, and Information Technology and data analytics. Climate change was then added in. What the Vietnamese team were doing was slightly outside these parameters although STEM education is obviously key in terms of economic development. But in Ireland the state had recognised the importance of civic engagement as the 'third leg' of the university alongside teaching and research. So the proposal to work with Vietnamese colleagues in an area where Ireland had a 'competitive advantage' so to speak was welcomed by Irish Aid. It is not clear yet how it is viewed by the Vietnamese government and its strategy for higher education, at present giving a priority to the involvement of the private sector.

Reflecting on the two-year collaboration we were struck by the steep nature of the learning curve on all sides. The two higher education systems were so different, we spoke a different language it seemed and taken for granted concepts meant little on 'the other side'. Even terms such as 'community based learning '(Ireland) and 'service learning' (Vietnam) meant quite different things and were based on distinctive pedagogies and politics. STEM was a term we had in common and yet we understood it in different ways. This is hardly surprising given the different development trajectories of Ireland and Vietnam even if both were now saying the same things about attracting FDI based on a highly educated workforce and a 'business friendly' state regime.

Perhaps the main underlying issue we found was the problem of things becoming 'lost in translation' that goes beyond the usual language issues as hinted at above. Two community based learning endeavours created in very different environments and very different personnel, mainly science teacher trainers in Vietnam and dedicated civic engagement staff in Ireland, were bound to create distinct styles and even understandings of what the whole collaboration was about. It probably took most of the first two-year phase of the project to 'get on the same page'. Again not surprising as both parties struggled to find a coherent, viable and sustainable way forward in their own respective work.

Our conclusions mirror those reached by another programme of co-operation some of us were involved in, namely the Irish African Partnership that brought together the nine universities on the island of Ireland and four African university partners in Uganda, Tanzania, Malawi and Mozambique in an ambitious research capacity building programme (Nakabugo et al., 2010). One of our conclusions then was that 'the challenge of nurturing long term mutual partnerships has frequently proved to be at odds with the short-term timelines of most donor-funded programmes' (Ibid: 89). Thus, that ambitious collaboration was seen by the African university leaders as 'a marathon, not a 100 metre dash' something they communicated repeatedly to the donors. However, the next round of funding precluded this type of inter-institutional collaboration to return to the more traditional research around specific topics that the donor saw as a priority at the time. The notion of a 'marathon' had not sunk in.

The Vietnamese/Irish partnership reported on here has some similarities and some differences when compared with the Irish African Partnership. For one it was based on just two universities collaborating, Dublin City University and the VNU-University of Science (Ho Chi Minh City). That made it simpler to run and reduced the number of partners that needed to be considered. Still what appeared to be a simple enough project - seeking to embed community based learning in STEM education teaching - soon became quite complex. We needed to bring in further experts on assisted technologies to work with the Vietnamese colleagues in the schools for the blind that were one of their main areas of intervention. We then needed, for the next phase, to leverage expertise on social enterprise formation to develop the sustainability of the VNU-HCMC University of Science Service Learning/STEM group through its transformation into a social enterprise. We were beginning to think in terms of replicating the experience of DCU in the Community that took ten years to come to fruition as a leading example of community based learning and research in Ireland. This was happening in a milieu that was quite different: the state did not support engaged research, the universities were not committed at leadership level to civic and community engagement and staff at the university operated under severe constraints.

These challenges quite simply cannot be met with a small grant that did not even cover salaries of the participants, never mind the overheads demanded by universities.

While the objective of the Vietnam/Ireland partnership was more restricted than that of the Irish African Partnership - a national capacity building exercise across four countries - it is no less next to impossible to achieve under the current way of operating North South higher education collaborations or partnerships. To achieve the objectives set we would need a long term support mechanism and buy-in from the state in both jurisdictions. Even then, we are reliant on the goodwill and commitment of academics on both sides of the partnership. Current emphasis on entrepreneurship, competitiveness and private profit on both sides leaves little space for mutual benefit, social engagement and citizen empowerment. It is assumed it can happen on the margins with no or little investment. Therefore, we end up relying on commitment that demands a new model or understanding of partnership more akin to that promoted by

development education at its best. A shared political understanding of global inequality and power differentials is essential as are shared values that are not often factored into partnership proposals that are couched in a development-speak that eschews real politics.

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