

Connecting Museums: a case study in leadership, innovation and education in university science museums leading internationalisation projects

Connecting Museums: um estudo de caso sobre liderança, inovação e educação em museus de ciências universitários liderando projetos de internacionalização

Connecting Museums: un estudio de caso sobre liderazgo, innovación y educación en museos de ciencias universitarios liderando de proyectos de internacionalización

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ABSTRACT

This article reports on *Connecting Museums: leadership, innovation and education in Science Museums*, an international conference involving three university museums: Museu de Ciências e Tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul (MCT-PUCRS), the Great North Museum: Hancock (GNM), at Newcastle University (NU), and the Oxford University Museum of Natural History (OUMNH). The partnership started with a project to develop a joint exhibition on the theme of evolution organised by MCT-PUCRS and GNM, supported by the British Council's Newton Fund (*Institutional Skills 2016*). The two museums shared the project at the UK University Museums Group (UMG) conference in 2016, where it came to the attention of colleagues at OUMNH. Following the UMG conference, the leadership and education teams of the three museums opened a dialogue to exchange knowledge and experience on leadership, innovation and education in science museums. This culminated in the first *Connecting Museums* conference in Porto Alegre, Brazil in October 2017. The conference was attended by 81 professionals, researchers, undergraduate and graduate students with interests in museology, the natural sciences and related areas.

Keywords Science. Museums. Leadership. Innovation. Science education. Internationalisation.

RESUMO

Este artigo constitui-se de um relato sobre o *Connecting Museums: liderança, inovação e educação em Museus de Ciências*, uma conferência internacional envolvendo três museus universitários: o Museu de Ciências e Tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul (MCT-PUCRS), o Great North Museum: Hancock (GNM), da Newcastle University (NU) e o Oxford University Museum of Natural History (OUMNH). A parceria entre as instituições iniciou-se a partir de um projeto para o desenvolvimento de uma exposição conjunta, organizada pelo MCT-PUCRS e pelo GNM financiada pelo Newton Fund por meio do edital Institutional Skills 2016 promovido pelo British Council. Os dois museus apresentaram o projeto na conferência do University Museum Group (UMG) em 2016 no Reino Unido, despertando a atenção de colegas do OUMNH. Após a conferência, as equipes de gestão e de educação dos três museus iniciaram um diálogo que culminou na troca de conhecimentos e experiências nas áreas de liderança, inovação e educação em museus de ciências. Este diálogo resultou na primeira edição da conferência *Connecting Museums* em Porto Alegre, Brasil, em outubro de 2017. Participaram do evento 81 profissionais, entre pesquisadores e alunos de graduação e pós-graduação, cujo interesse estava relacionado à museologia, ciências naturais e áreas correlatas.

Palavras-chave: Museus de ciência. Liderança. Inovação. Educação em ciências. Internacionalização.



RESUMEN

Este artículo se constituye como un relato sobre la conferencia *Connecting Museums: liderazgo, innovación y educación en Museos de Ciencias*, una conferencia internacional involucrando tres museos universitarios: el Museu de Ciências e Tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul (MCT-PUCRS), el Great North Museum: Hancock (GNM), de la Newcastle University (NU) y el Oxford University Museum of Natural History (OUMNH). La colaboración entre las instituciones empezó con el proyecto de una exposición conjunta organizada por el MCT-PUCRS y por el GNM, financiada por el Newton Fund a través de la convocatoria *Institutional Skills 2016* del British Council. Los dos museos presentaron su proyecto en la conferencia University Museum Group (UMG) de 2016 en Reino Unido, que llamó la atención de los compañeros del OUMNH. Después de la conferencia, los equipos directivos y de educación de los tres museos empezaron un diálogo que culminó en un intercambio de conocimiento y experiencias en las áreas de liderazgo, innovación y educación en museos de ciencias. Ese diálogo resultó en la primera edición del *Connecting Museums* en Porto Alegre, Brasil, en octubre de 2017. Participaron de la conferencia 81 profesionales, investigadores y alumnos de grado y posgrado cuyos intereses estaban relacionados a la museología, a las ciencias naturales y áreas correlacionadas.

Palavras clave: Museos de ciencias. Liderazgo. Innovación. Educación en ciencias. Internacionalización.

UNIVERSITY MUSEUMS AS STRATEGIC PARTNERS FOR INTERNATIONALISATION

There are few studies investigating the role of museums in university internationalisation programmes, but considering the way that university museums are positioned within universities and how they combine teaching, research and social engagement, they offer compelling opportunities for interdisciplinary collaboration across national boundaries. The case is perhaps particularly strong for science museums, which already have strong international connections and networks through the use of collections in research projects, and also have a core mission of disseminating science to the public and fostering scientific literacy and interest.

There are many ways that university museums can help their universities' international programmes in terms of teaching, research and social engagement. Before suggesting how a university museum could be useful to internationalisation programmes, it is necessary to define the meaning of internationalisation in the higher education context. Marília Morosini (2006) observed that internationalisation is one of the hallmarks of universities. It can be explained by the knowledge production that characterises the essence of universities. Morosini considered internationalisation linked to research to be of primary importance, because of how researchers seek partnerships, highlighting their autonomy in their investigations (MOROSINI, 2006). Secondly, Morosini identified internationalisation linked to teaching – involving undergraduate and graduate students – which relies on international curriculum validation that certifies a foreign university can accept a student to develop a plan of work or course specific disciplines. In this case, it depends on specific grant programmes that result from

national education policies and agreements with other countries (MOROSINI, 2006; 2017).

Dias Sobrinho (2005) emphasised the importance of well-structured processes within universities to identify, coordinate and consolidate possible internationalisation initiatives. This works well when dealing with traditional, well established ways that universities work internationally, through research projects. However, museums can offer possibilities outside these established frameworks: museums are a world apart.

But what kind of world do museums function in? A world where knowledge is everywhere. Santos and De Almeida Filho (2012) commented that globalisation demands a new relationship between humanity and knowledge; not only in terms of its production, but also dissemination. The authors highlight the influence of this scenario on universities (SANTOS; DE ALMEIDA FILHO, 2012). If we consider university museums as extensions of what is produced within the academic departments of the university – and also playing a significant role in how knowledge is produced – we could argue that a museum's structure and possible interventions practices reflect what Held et al (1999) describe as the “widening, deepening and speeding up of worldwide interconnectedness”.

We think that the word that defines this globalised world is *connection*. Making connections provides the opportunity to exchange knowledge and expertise, provides training and develop skills. If we think about higher education, we first have to consider that production of knowledge – scientific production – as situated in graduate programmes. According to Morosini (2011) there are two types of cooperation that characterise internationalisation: traditional international cooperation (CIT) and the Horizontal International Model (CIH). While the first is based on a competitive model between

institutions of higher education that aims to catch subjects to boost research activities, the second is based on solidarity and aims to develop local skills attending specific local demands (MOROSINI, 2011; DIDRIKSSON, 1997).

Of these two types of internationalisation models, the second is the one that best explains the partnership that was established between MCT-PUCRS and GNM (FERRARO; PIRES; SHINKAY, 2016; FERRARO; PIRES, 2017), which was later extended to OUMNH. Considering the context of the three museums and how they fit within their higher education institutions, the partnership focussed on specific shared challenges. In addition, knowledge exchange centred on how innovation could be achieved within higher education structures, and the challenges and opportunities presented by internationalisation.

This paper aims to share ideas on how university museums can support the internationalisation activities of universities, with a particular focus on science museums and the opportunities opened up by scientific collections and related research activity.

Scientific collections are an important academic resource for activity such as specimen biodiversity conservation, genome preservation and tracking infectious diseases, their history, and potentially identifying sources and/or reservoirs (SUAREZ; TSUTSUI, 2004). The scientific collections already work internationally to support research in several disciplines – such as zoology, botany, archaeology, palaeontology, etc.. These collections are safeguarded and managed by the university museums, giving these museums a historical role in internationalisation in higher education.

This paper argues that in addition to this traditional area of international exchange, activities based around exhibitions and public engagement also offer strategic opportunities for internationalisation.

CONTEXTUALIZING THE BEGINNING OF THE PARTNERSHIP

In 2016, MCT-PUCRS and GNM: Hancock submitted a joint proposal to work collaboratively to research, curate and deliver two parallel, linked exhibitions on the theme of evolution, and to share knowledge and skills between the two organisations around social and community engagement with science. The proposal was awarded funding from the British Council's Newton Fund, which aims to build research and innovation partnerships between the UK and partner countries to support economic development and social welfare, and to develop research and innovation capacity for long-term sustainable growth (BRITISH COUNCIL, 2017a).

The project, which was funded from the Institutional Skills 2015-16 strand of the Newton Fund, was supported by the British Council in Brazil. It supported the development and curation of the exhibitions *Traces of Evolution*, at MCT-PUCRS in Porto Alegre (Brazil), and *Bones: skeletons secrets of the animal world* at GNM in Newcastle (UK), and aimed to provide training and promote bilateral engagement between university researchers, professors and others museum professionals, and the local population, in particular low income households (BRITISH COUNCIL, 2017a). The total value of the project was £120,000 of which £60,000 was matched funding from the Brazilian partner. This fund was used to support exchange trips to collaborate on the exhibitions, and allow the partners to better understand the working environment of the other, and how they are embedded within their respective universities.

Over the 12 month period in which the exhibitions were being developed, a series of lectures were organised at MCT-PUCRS in Porto Alegre, Brazil. Talks were given by staff from the School of Arts and Cultures and Faculty of Humanities and Social Sciences at NU and from Tyne & Wear Archives & Museums (TWAM), a UK Local Authority service that oversees the museum management side of GNM: Hancock. The series of events focussed on science museum management, education, teacher training and the place and role of university museums within their academic institution and the wider community. A total of 127 people attended the lecture series, including professors, researchers, museum curators, and undergraduate and graduate students of museology, science and related subjects.

These knowledge exchange activities, both the in-depth interactions between staff developing the exhibitions and the broader open knowledge exchange through the lecture series, were an important outcome of the exchange trips. Researchers from NU shared and debated methodologies, concepts, perceptions and lines of investigation based on pioneering teacher training programmes and science education activities that are being piloted at GNM. Staff from PUCRS, demonstrated and discussed how they effectively engage large numbers of university professors and their students to develop and participate in social engagement activities in the museum space. The aim of the project was to foster skills and knowledge exchange around social and community engagement has been demonstrably met. The high level of engagement between PUCRS and GNM staff supported several additional, unexpected benefits.

Traces of Evolution was inspired by the tree of life, a phylogenetic tree that shows the evolutionary relationship between various biological species. The tree was redesigned and adapted – respecting the relationships

between biologic groups – to provide a structure for the museological project. The tree was recreated using LED lights, leading the visitor to different groups of living organisms represented by specimens from the scientific collections of MCT-PUCRS and the Fundação Zoobotânica do Rio Grande do Sul (FZB). Moving along the branches of the tree, the visitors can interact with deep content made available via touch screens (FERRARO; PIRES, 2017).

In the seven months since *Traces of Evolution* opened in March 2017, 70,101 people have visited the exhibition at MCT-PUCRS. The majority of visitors are students and teachers from local public and private schools. *Traces of Evolution* became a resource for teaching evolution, combining technology with the real specimens from the scientific collection. The main content of the exhibition was delivered to the public through specially designed didactic material – for school students this content was augmented by worksheets – and deeper information could be accessed via a number of touch screens integrated into the displays. Since opening, 367 teachers have been trained to deliver evolution-focussed informal¹ learning activities in the museum.

UNIVERSITY MUSEUMS GROUP CONFERENCE, 2016

The University Museums Group (UMG) is a UK organization that represents the interests of university museums to funders and stakeholders and advocates for the important role of university museums within both universities and the cultural sector. UMG works closely with UMIS (University Museums in Scotland) and with UMAC (University Museums and Collections), the international body for university museums. Since its formation, UMG has established an international reputation for its leadership in advocacy of the sector (UNIVERSITY MUSEUMS GROUP, 2017).

In 2016, the UMG annual conference was held at the University of Reading. Called “*Better together?*” the theme of the conference was the benefits, costs and challenges of working collaboratively. Several case studies involving UK university museums and international partners were presented and the results of these partnerships analysed. The case studies presented provoked debate on the role of leadership, partner expectations and the practical realities of ensuring positive and sustainable outcomes (UNIVERSITY MUSEUMS GROUP, 2017).

GNM, as a member of UMG, invited a representative from MCT-PUCRS to participate in the event. It was at

this conference that the leadership team at OUMNH became aware of the MCT-PUCRS and GNM partnership. The two main panels at the conference were “*Civic and University Partnerships*”, involving representatives from Arts Council England, Hunterian Museum, University of Reading, and Brighton Museums and Royal Pavilion, and “*Working with international partners*”, with representatives from the University of Reading, University College London, University of Cambridge and University of East Anglia. The closing keynote for the conference was made by the Rt Hon Matt Hancock, Minister of State for Digital and Culture, who reiterated the importance of university museums to research, learning and social engagement.

Paul Smith, Director of OUMNH and at that time Co-Chair of UMG, who chaired the second panel on working with international partners, was introduced to the representative from MCT-PUCRS by GNM at the conference. The MCT-PUCRS representative was subsequently invited to visit the university museums in Oxford, and led to the expansion of the international partnership. Subsequent to the UMG conference there have been three knowledge exchange trips, two to the UK and one to Brazil. The purpose of all of these trips was to explore potential possibilities for further collaborative activity. As part of the last of the most recent of these trips, to MCT-PUCRS in Porto Alegre, Brazil, a conference was organised to open up debate around the themes of leadership, innovation and education in university science museums

CONNECTING MUSEUMS: LEADERSHIP, INNOVATION AND EDUCATION IN SCIENCE MUSEUMS

The theme of *connection* was chosen for the conference in Porto Alegre, acknowledging the shared opportunities, and shared challenges, open to the three museums. The conference was divided in two parts. The first part addressed management, leadership and innovation in science museums. The second part focussed on education practices in science museums and training teachers in science education. The conference was attended by 81 museum professionals, researchers, and undergraduate and graduate students from museology, natural sciences and related areas.

As the conference host Melissa Guerra Simoes Pires, the Director of MCT-PUCRS, was the first to speak. She shared the history, mission and values of the organisation, talked about the infrastructure, administrative and technical organisation of the museum, about the history and breadth of the scientific collections held by the museum, and the role of the museum within the wider

¹ The expressions “informal learning” or “informal education”, used in English, have the same meaning of “non-formal learning” or “non-formal education” used in Portuguese.

university. She explored how the museum connects with both the academic and general community to achieve the generation, preservation and diffusion of scientific knowledge to support educational and cultural priorities.

The director emphasised the importance of the museum being deeply integrated into the university's teaching, research and social engagement activities. In the case of teaching, she focussed on the museum's role in developing science education activities and training science teachers, and how they work with undergraduate and graduate students, and how they work with teachers from both private and public schools, as well as academics from other universities, to use the exhibition as a teaching resource and space.

With regard to the *research* perspective, the association between MCT-PUCRS and the university's graduate programmes was presented to show how museums can be converted into spaces of knowledge dissemination, about contemporary science, and the importance of museums, scientific collecting and collections preservation (for example, supported by the graduate programme in Zoology). In this way museums can act as a connecting hub, bringing together scientific research, and the dissemination and popularisation of science in society.

MCT-PUCRS delivers social engagement through its education activities. The museum's education programmes have engaged an impressive number of people in its 16 years of operation PROESC (Science-School Programme) and PROMUSIT (Mobile Museum Programme). PROESC brings students from public schools and their teachers to the museum for free. The programme guarantees transportation, lunch and the ticket to visit the museum. By the end of 2016 this programme had reached 165,000 public schools students from the south of Brazil. PROMUSIT, the mobile museum, takes experiments developed by the museum to other cities around the country providing science education interventions. By the end of 2016, PROMUSIT had visited 172 different cities, reaching almost 3 million members of the public.

Also in the morning, Caroline McDonald, the Manager of GNM, addressed the conference. McDonald explained how the museum is both part of Newcastle University, but is managed by TWAM, a Local Authority Service, as part of a partnership of nine museums and art galleries. She further discussed how the relationship between the museum and the university is managed and nurtured, a topic that was debated further at the end of the session as the participating museums discussed the different ways they engage with their universities. McDonald explained how the museum works to disseminate cutting edge research being conducted within the university, and

work with research academics to inspire curiosity and be provocative and innovative in engaging with the public.

The GNM Manager also discussed the core values that steer the museum's activities: accessibility, inclusion, collaboration and change. The museum aims to be a welcoming, inclusive and accessible environment, stimulating a culture of collaboration and acting as an agent for change, inspiring and challenging people to create a better future. McDonald emphasized the social role of the museums in changing societies. GNM considered strong partnerships essential to tackling this mission.

The final morning lecture was given by Paul Smith, Director of OUMNH. Smith explained that Oxford has a number of museums and cultural venues, which work together within the Gardens, Libraries and Museums (GLAM) division. Alongside the Museum of Natural History, these include: the Ashmolean Museum of Art and Archaeology, Museum of the History of Science, Pitt Rivers Museum of Anthropology and World Archaeology, Oxford's Botanic Garden and the Bodleian Libraries.

The Museum of Natural History received over 750,000 visitors in 2016-17, and collectively more than 3 million members of the public visit these venues each year, making them important centres of public engagement for the university, and some of the most visited museums in the UK outside the London nationals. Collectively the museums also deliver formal learning sessions to more than 100,000 school students each year. Smith also highlighted the academic outputs of researchers embedded within the museum or using its collections, and discussed how the museum works with academics across the university to engage the public with cutting edge science. This has led to the creation of an exhibition programme dedicated to 'Contemporary Science and Society'; the exhibitions are developed to engage the public with cutting edge academic research in a way that highlights how it relates to day-to-day life.

Smith also addressed the theme of innovation and risk taking within the context of university science museums. He suggested that there was a distinctive difference between innovation and risk taking, positing the existence of a multidimensional *risk envelope* with well-defined boundaries that includes museums typical activities, but also empty activity spaces, suggesting that moving into this vacant area provided space for innovation, with minimal risk. He also discussed the need for museum leadership to have a strategic vision that looks outside the organisation, evaluating the broader context in which the museum site in order to identify new trends and approaching change to shape the museum's risk envelope.

The second part of the conference looked at museum education practices and the role of museums in educating

young people. In these lectures, each museum presented what it is doing in terms of science education activities involving students and young people, providing teacher training, and how they are using technology to support this activity.

The opening lecture was delivered by José Luis Ferraro, Head of Educational Programmes at MCT-PUCRS. He opened his talk by explaining the Referential Framework of the university, associating the museum with learning, researching and social engagement activities of the university. Next he presented the structure of the museum management team: a board of coordinators (Educational, Administrative, Scientific Collections and Museological Projects), led by the museum's director.

It was important to explain the strong relationship that MCT-PUCRS has with the university's educational activities, graduate research programmes, and social engagement activities. PUCRS' Educational Team is a structure that works inside the Educational Coordination and its function is to articulate academic activities (involving undergraduate and graduate students, professors and researchers) to the public.

To demonstrate the importance in having a specialised structure to develop educational activities, Ferraro shared the numbers engaged since the team was created. To the end of 2016, 2194 educational activities have been led by the Educational Team, providing training to 5,162 teachers. Ferraro concluded with an explanation of how the three museums were able to connect with the support of the British Council/Newton Fund (BRITISH COUNCIL, 2017a; 2017b), and the role of participation in UMG Conference (2016) (UNIVERSITY MUSEUMS GROUP, 2017).

The next lecture was given by Janet Stott, the Deputy Director and Head of Public Engagement of OUMNH. She focussed on the importance of informal learning to young people's development, and the informal learning opportunities offered by OUMNH. The concept of informal learning was associated with the concept of *science capital*, a conceptual tool for understanding levels of engagement and confidence with science, particularly in young people. There are four aspects of science capital: *what you know* about science (science literacy), *how you think and your attitudes towards science* (attitudes and dispositions), *what you do* (science related activities and behaviours) and *who you know* (social contacts and networks). Science Capital is being used by schools and museums in the UK to inform science learning strategies (ARCHER; DEWIT; WILLIS, 2014).

Stott explained how workshops organised by museums are helpful not only to develop science literacy, but also their attitude to science and their social networks – as activities often give young people the opportunity

to meet young scientists that they can identify with – influencing aspirations around future engagement with science.

The learning activities programmed by OUMNH are developed with key attributes in mind: *authenticity, curiosity, creativity* and *questioning skills*. For example, at OUMNH *authenticity* teaching happens with authentic, and often rare specimens, such as those collected by Darwin, creating an emotional connection.

Next Adam Goldwater, Learning Officer from GNM and a doctoral researcher at NU addressed the meeting about his research around how museums can work with teachers to increase the impact of museum engagement of student attainment.

Goldwater addressed the question of how to transform a school group's engagement with the museum from a visit, to an extraordinary experience that complements classroom learning. In response to this he addressed four topics: *co-creation, adaptation, redefinition* and *re-imagination*.

Co-creation was about the challenge of working collaboratively with teachers to develop museum activities that meet the needs of their specific student groups, rather than offering a pre-designed set of sessions. *Adaptation*, in this situation, is about ways to enhance and support enquiry and deep learning, often by immersion in the museum space. *Redefinition* concerns the redefinition of museum learning and pushes its boundaries, maximising its potential. And, finally, *Re-imagination*, demands the redeployment of a current programme – the curriculum as an example – and involves a co-production movement involving teachers and university researchers.

One question that arises is whether we are maximising learning in museums? – directed as a kind of reflection to professionals in science museum education – was explored from *flexibility, dialogue, collaboration* and *interaction*. It is important that attitudes and skills are used to guide the planning of educational activities. We should also consider that these dimensions are essential when it comes to thinking about teacher training as an important role within museums.

Through funding via the Real World Science programme, headed up by the Natural History Museum, London, GNM is investing in teacher training programmes that aim to support teachers in using museum galleries to develop an over-arching question. This programme includes interdisciplinary collaboration, with teachers working with colleagues across different subject areas to challenge their normal approaches. During the training the teachers are encouraged to interact, to be flexible and to have fun. The museum is used as a training space in order to disrupt attitudes around traditional modes of teaching.

GNM's teacher training experience is ongoing and is currently being evaluated. So far participants have affirmed that they feel more confident about bringing their students into the museum space and delivering an engaging session. They also related greater enthusiasm for museum learning, and began to suggest their own strategies for engaging students in the museum space.

The closing lecture was given by Jessica Suess, Digital Partnership Manager for Oxford University Museums. She talked about how Oxford is using mobile technology to facilitate and deepen public engagement across all its museums. Suess shared examples of mobile products developed to facilitate formal education sessions for schools, and to allow independent adult visitors to dig deeper into the displays.

FUTURE PERSPECTIVES

The *Connecting Museum* conference was an important milestone in the relationship between these three science museums.

The museums involved have much in common in terms of their role within their higher education institutions, and their missions to deliver social engagement together with the dissemination, literacy and popularisation of science. As university museums, there are significant opportunities for connections in the areas of research, teaching and public engagement, involving not only museum staff, but extending to other parts of the academy.

One immediate outcome of the partnership is the establishment of an international working group to share best practice in relation to science learning in university meetings (Science in University Museums – SUMs). The three partners involved in this project will re-gather at a conference to be held in Oxford in May 2018, alongside representatives from other university science museums in the UK and the USA to answer three questions: 1) How can university science museums best assist teachers in relation to object-based science learning? 2) How can the museums best enable a continuity of engagement from early years to entry into higher education? 3) How can university science museums help to ensure that the next generation of scientists is diverse and representative?

The importance of these three questions is fundamental for repositioning university museums inside the academy. The first question presents a training opportunity focused on the initial training and continued professional development of teachers: the museums not only as pedagogical resource, but as an important place to think more widely about object-based learning within science education. The interaction in an environment

different from the classroom contributes to teachers being able to rethink their practices and teaching strategies.

The second question concerns the engagement and retention of student interest from early years at school through to higher education, and corresponds to the three important pillars usually present in the reference framework of universities: teaching, research and social engagement. From the generation of research knowledge, learning objects can be identified and acquire the potential to be used in specific activities related to teaching. The generation of knowledge and teaching activities delivered to society could be characterised as an extension of universities inside communities, thus promoting social engagement, and fulfils an important role of universities with respect to the communities they serve. It also allows the university museum to carry out their social role related to citizenship development in a democratic perspective of scientific dissemination and science popularization. The museum is thus not only a knowledge place but, in addition, it is a place that promotes an enchantment for the potential for this engagement.

In this sense, we could ally the third question with the first two considering its topics: training/formation and the knowledge delivery to the society: the museum as an knowledge enchantment place in which potential could be found in the possibility to inspire young people in follow a scientific career in different fields of science. Assuming the hypothesis that to measure the development of a country we should consider its technological production, a science education based on the use of museums tends to improve the students engagement with science, increasing their scientific capital. With this many students enthusiastic about science could be stimulated into becoming scientists in the future, working with research and also teaching. The inspiration comes from the museum reality and with the different relationship that could be established with knowledge at the exhibitions area or visiting science collections through different activities.

The Connecting Museums initiative enabled the three university museums involved to promote the discussion about the importance of science museums as hubs for initiating and leading internationalisation projects in higher education. It is not only professors and research that are the beneficiaries of this type of initiative because, importantly, there are also tangible outcomes for undergraduate and graduate students as well as society at large. The Connecting Museums project has tightened the linkages between the three university science museums involved, and has enabled the strategic development of this Brazil-UK initiative and further funding bids. The next steps will be to enlarge the partnership and to begin the active sharing of best practice, methodologies and content.

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