

Impact case study (REF3)

Institution: University of Bristol		
Unit of Assessment: 29) Classics		
Title of case study: The Science of Stories: Increasing Engagement and Participation in Classics Through Storytelling in Schools and Museums		
Period when the underpinning research was undertaken: 2005 - 2019		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Dr Genevieve Liveley	Reader in Classics	2005 - 2020
Period when the claimed impact occurred: 2016 - 2020		
Is this case study continued from a case study submitted in 2014? N		

1. Summary of the impact

Classics in UK state schools was in decline. Dr Liveley's research into the ancient science of storytelling and into ancient science-themed myths produced new activities, materials, resources, and approaches to teacher-training that resulted in the ongoing and sustained uptake of Classical subjects since 2017 at both primary and secondary level for over 10,000 state pupils: 75+ schools in the South West and Wales introducing Classics into the timetabled school curriculum; 20+ schools locally and nationally (from Aberdeen to Penzance) introducing curricular or extra-curricular Classics-themed storytelling activities; 3 universities incorporating Classics into PGCE teacher training; 2 museums using Classics to train facilitators and to enhance visitor experience; and a national charity changing practice to champion Classics through storytelling.

2. Underpinning research

The research underpinning the impact of this project was undertaken by Dr Genevieve Liveley (Lecturer/Senior Lecturer/Reader in Classics at the University of Bristol 2005-present) and has two complementary strands.

The science of stories: New investigations into the history of narratology

Liveley's research in this area demonstrated that this field of study has – from its earliest origins in the writings of Plato and Aristotle through to the latest twenty-first century cyber-narratologies – represented itself as a scientific enterprise. Narratology is concerned with the technology of storytelling and the ways in which stories *programme* human audiences in similar ways to the AI programming through which machines develop artificial intelligence. In light of this research, we can now better understand the ways in which narrative shapes our knowledge and understanding of our past, present, and future worlds [3.1-3.3].

New investigations into the roles of artificial intelligence (AI), robots and cyborgs in myth

AI, robots, and cyborgs unexpectedly play a role in classical myths and narratives that are almost 3,000 years old. Ancient storytellers such as Homer, Hesiod, and Ovid describe cyborg slave girls made of gold, and female living statues (anticipating modern mythmaking around sex and companion robots); a humanoid bronze giant Talos (a precursor to the 20th century Terminator character); and ships that 'navigate by thought' (anticipating the driverless cars of the 21st century). Dr Liveley's research into these ancient myths and their reception by subsequent generations of storytellers – particularly the Roman poet Ovid – showed that public attitudes to the future of AI, robots, and cyborgs in society were being shaped (effectively 'programmed') by their experience of AI, robots, and cyborgs in fiction. This research discovered that 21st century stories about this supposedly new science were repeating very ancient patterns. [3.1, 3.3-3.6]. The underpinning research for this project has been developed and showcased in a range of published outputs and an open-access-article on 'Why Sex Robots are Ancient History' (<http://theconversation.com/why-sex-robots-are-ancient-history-58112>): 32,081 readers; 10+

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republications worldwide). Further research insights were developed and shared through wider public engagement and knowledge exchange at high-profile public lectures, science conferences, and public events. For example, an invited lecture on Ovid's artificial creatures at a New York public think tank event celebrating the legacy of Mary Shelley's *Frankenstein* in April 2016, and a keynote lecture on Ovid's Pygmalion at the Second International Conference on Love and Sex with Robots (December 2016).

3. References to the research

- 3.1 **Liveley G** and Thomas S (2020). Homer's Intelligent Machines: AI in Antiquity, in Cave S, Dihal K and Dillon S (eds.) *AI Narratives: A History of Imaginative Thinking about Intelligent Machines* (7,000 words) [Available on request]
- 3.2 **Liveley G** (2019), *Narratology*. Oxford: Oxford University Press (110,000 words) [Available on request]
- 3.3 **Liveley G** (2019). Beyond the beautiful evil? The ancient/future history of sex robots, in Chesi GM and Spiegel F (eds.) *Classical Literature and Post-Humanism*, London: Bloomsbury (5,000 words) [Available on request]
- 3.4 **Liveley G** (2018). Patchwork Paratexts and Monstrous Metapoetics, in Rogers B (ed.) *Frankenstein and Its Classics: The Modern Prometheus from Antiquity to Science Fiction*, London: Wiley-Blackwell: 9-27 [Available on request]
- 3.5 **Liveley G** (2011), *A Reader's Guide: Ovid's Metamorphoses*, London: Continuum Press (200 pages) [Available on request]
- 3.6 **Liveley G** (2005). Science Fictions & Cyber Myths Or, Do Cyborgs Dream of Dolly the Sheep?, in Zajko V and Leonard M (eds.), *Laughing with Medusa*, Oxford: Oxford University Press: 275-294 [Available on request]

The academic significance of this portfolio of innovative and original research – all published with prestigious presses, and including a major monograph – is further demonstrated by the award of an Alan Turing Institute Fellowship (Nov 2018-Nov 2021) to investigate: "The ancient/future (hi)story of AI: Towards a new AI narrative morphology".

Funding information

Liveley G (PI), *Bristol and South West Classics Hub* – leading regional project championing partnerships between schools and universities, Classics for All, 2016-2020, GBP45,000

Liveley G (PI), *Stories of Science/Science of Stories* resources, Classics for All, 2018, GBP700

Liveley G (PI), *Ancient narrative: representation, anticipation, and teleology*, International Strategic Fund award, 2016, GBP2,945

Liveley G (PI), *Bristol and South West Classics Hub*, Institute for Greece, Rome, and the Classical Tradition award, 2016, GBP5,241

4. Details of the impact

Dr Liveley's innovative research has underpinned and informed her engagement with schools, teacher training bodies, and charities across the UK, leading to the following impacts during this REF period: reversing the decline of Classics studies through improved resources and interventions; enhanced resources developed for and adopted by teacher training programmes in Wales and the South West; new award schemes developed through national campaigns with charities; enhanced science communication and visitor experience at two major museums in Bristol and Bath.

Chapter 1: Reversing the decline of Classics studies across the UK through improved resources and interventions

Since the introduction of the National Curriculum in 1988, the teaching of Classics (comprising four related subjects: Latin, Ancient Greek, Classical Civilisation, and Ancient History) has seen

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a steep decline – especially in state schools. Across all schools, the number of students taking Latin at GCSE dropped from 16,023 in 1988 to 10,908 in 1998. Following major curriculum reforms in 2015, national exam boards withdrew 10 awards in Classical subjects, and the subject saw a further decline – with the biggest fall in the state sector. In 2016, the total number of students taking any classical subject at GCSE was 15,152 and only 6,581 took a Classical subject at A level; GCSE numbers dipped to a historic low of 14,480 in 2017, and A Level numbers continue to decline – decreasing by 27.4% in the period 2016-2020 (source: FFT Education Data Lab Analysis). This decline represents a significant threat to the skills pipeline for the discipline and its future research base. Dr Liveley’s goal was, therefore, to use the two related strands of her research into storytelling [3.1-3.3] and into ancient myths about AI, robots, and cyborgs [3.1, 3.3-3.6] to drive forward the sustainable uptake of Classical subjects at primary and secondary levels, with particular focus on the state sector.

As a result of Dr Liveley’s research-informed engagement with schools over 2016 to 2020, as detailed below, entries in Classical subjects at GCSE have increased across the UK since 2017, with a +6.6% increase from 2016-2020 (over the same period, the 16-year-old population has changed by +0.8%).

From March 2016, Dr Liveley began giving a series of popular public lectures on her research into ancient stories about AI, robots, and cyborgs [3.1, 3.3-3.6] to teachers and students across the South West region. As a result, in the summer of 2016, she received a project grant from national charity Classics for All (<https://classicsforall.org.uk/>) to set up a regional Hub to work towards widening access to Classics: <http://www.bristol.ac.uk/classics/hub/>. Between September 2016 and April 2020, the Hub worked with 105 state schools across the South West and Wales (24 primaries and 81 secondaries), delivering workshops, conferences, and competitions; training and mentoring non-specialist teachers; both designing and providing physical and digital teaching resources; and facilitating access to national grant schemes [5.1]. Indeed, between September 2016 and April 2020, the Hub helped a total of 67 schools (24 primaries and 43 secondaries) from its wider schools network to secure funding from Classics for All grant schemes [5.2, 5.7]. This enabled over 800 state school pupils in the South West to regularly study some kind of Classics throughout the 2016/17 school year; a further 1,700 state school pupils to study Classics on the curriculum on a regular basis (mainly through English lessons) in 2017/18; another 2,300 to study Classics regularly in 2018/19; and over 5,700 state pupils across the region to study classical subjects in the 2019/20 academic year – resulting in more than 10,500 students overall being involved in regular Classics for All funded classroom activities in the South West and Wales between 2016 and 2020 [5.2, 5.7].

Drawing together both strands of her research [3.1-3.6] and aiming to translate this into a school-friendly format, in December 2017, Dr Liveley engaged 6 schools as her community partners in the co-creation of a new set of classroom resources on the ‘Science of Stories’: (<http://www.bristol.ac.uk/classics/hub/resources/>) – hereafter, SoS. She worked closely with the schools to translate her underpinning research into an interactive flipbook (*The Science of Stories* – available in digital and physical format) plus supplementary materials (including videos, experiments, lesson plans, and quizzes) for use in school science lessons, cross-curricular lunchtime and breakfast clubs, gifted and talented groups, debate groups, storytelling societies, and extra-curricular Classics clubs. From the autumn of 2018, multiple copies were distributed to over 600 schools nationwide [5.9]. The impact has been deep and wide-ranging. One teacher reports that the ‘cross-curricular thinking’ that SoS inspires has ‘changed teaching practice’; another that the school has ‘used the science of stories resources as a way to enrich the teaching practice of the science department, using it as a form of extension and differentiation’; and another that ‘Science of Stories [is] used by teachers in running a classics-themed transition day for incoming Year 7 pupils’ [5.1]. Schools nationwide – from Aberdeen to Penzance – report using these resources for extra-curricular or curriculum-extension activities, including to promote Classics to their feeder primary schools, and to complete the Olympus Challenge Award [5.1, 5.6].

The impact for the beneficiaries of the Hub’s combined interventions has been transformative. Each year, 4,000+ pupils across 75 state schools (59 secondaries and 16 primaries) in the South West and Wales who previously were not offered any Classics now experience some form of Classics on the curriculum; another 9 schools now offer extra-curricular Classics – and 15 schools have introduced a new Classics subject at GCSE or AS Level, including GCSE Greek

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[5.1]. The Programme Director for Classics for All states ‘the geographical coverage of the Bristol Classics Hub (including many hard-to-reach rural school districts) is such that we have recently taken steps to establish two additional Hubs to pick up its work in the coastal South West and in Wales’ [5.2]. One teacher reports that the impact ‘has led to the school actually offering Latin/Classics as a subject, where previously it wasn’t’; another that ‘simply put, Classics wouldn’t be where it is now in our school without [your] support, and hundreds of children would never have encountered the ancient world in a classroom setting’ [5.1].

Chapter 2: Improving Classics resources for teacher training programmes across the South West and Wales

Through the Hub, Dr Liveley facilitated training for 300+ teachers in the South West and Wales between 2016 and 2020 [5.1, 5.2]. In July 2017, she was invited by PGCE Directors at two South West universities to draw on her research (and, later, her SoS resources) to help provide training and resources for local state schools to introduce myths from the Roman poet Ovid into a new storytelling initiative in English teaching (<https://www.bristol.ac.uk/classics/hub/for-schools/ovidcompetition/>). At the same time, she became Chair of the local branch of the Bristol Classical Association and relaunched a regional Latin drama festival to support English teachers in secondary and primary schools in encouraging students to perform Latin stories (<https://www.bristol.ac.uk/arts/events/2019/june/festival-of-latin-drama.html>). Both events are now embedded annual programmes and have seen the introduction of Classics-based storytelling into English classrooms and curricula in 17 state secondary schools (involving 200+ Year 7 & 8 pupils each year) and 2 state primaries [5.1, 5.3]. Dr Liveley further developed and delivered cross-curricular training and resources for English, Science, and Foreign Language teachers and PGCE trainees in the South West. Between 2016 and 2020, she directly trained 100+ teachers and 180+ trainees from 49 state secondary schools, using the SoS resources to help non-specialist teachers and trainees introduce Classics into their teaching – and to qualify for the ‘Classics in the Classroom’ certificate awarded by national charity Classics for All [5.1-5.3, 5.6, 5.8]. One science teacher and year 12 tutor reports using these resources to ‘spark interest’ in etymology and mythology with his students [5.1]; and in March 2020 (at the start of Covid-19 school closures), the PGCE Director of English at UWE contacted all PGCE English Partnership Schools recommending the ‘excellent resources from University of Bristol’ among a pack of online resources for the community to use during the crisis [5.8]; a Liverpool schools direct (SCITT) trainer working with Primary Education lecturers at Liverpool College and Liverpool Hope University is also using the SoS resources to help train new teachers (‘2 last year, 1 this year, 4 next year’) [5.1].

Chapter 3: New national award schemes recognising Classics engagement by pupils and PGCE students

The substance and reach of the impact achieved in schools both regionally and nationally was greatly facilitated by new partnerships with national charity Classics for All (<https://classicsforall.org.uk/>) (from July 2016); and national advocacy campaign *Advocating Classics Education* (ACE) (<http://aceclassics.org.uk/>) (from May 2017). Both helped to promote and distribute SoS resources nationwide and describe a mutually beneficial relationship which has transformed the way they work to support Classics in state schools across the UK, commending the ‘scale of the Classics outreach that has been achieved’ [5.2] and ‘the greater number of schools that are now teaching Classics in the Southwest ... as a result of Dr Liveley’s leadership’ [5.10]. In March 2019, in collaboration with Dr Liveley, Classics for All developed a new award scheme (endorsed by a number of universities and further education partners) to recognise the work of students who are studying Classics on an extra-curricular basis or as a non-examined curriculum subject (<https://classicsforall.org.uk/get-involved/schools/grants-and-support-for-schools/events-news/>). An independent learning version of the ‘Olympus Challenge’ for children studying at home during the Covid-19 crisis, and a ‘Classics in the Classroom’ award for PGCE students in the South West and Wales were launched in April 2020. For the independent study award, Dr Liveley’s SoS resources are referenced as key materials for the ‘Story Explorer’ and ‘Artist in Residence’ badges. And for the ‘Classics in the Classroom’ award, the SoS resources are suggested as key materials for the ‘Cross-curricular’ module, and

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the ‘Ovid in the Westcountry Competition’ suggested as an activity to fulfil the conditions of the ‘Myth’ module [5.6]. One teacher from Wales, who piloted the ‘Olympus Challenge’ through the Hub reports that: ‘In a year where regular examination has been disrupted, the Olympus Challenge stands out as the single great, tangible achievement since the summer’ and downloads of SoS resources show a pandemic-related home-schooling peak in April 2020 [5.1, 5.2, 5.6, 5.9].

Chapter 4: Enhancing curatorial practice and visitor experience at two major regional museums

Dr Liveley also formed partnerships with two local museums to help her translate her research into a more accessible and attractive format for schools and children – and to promote regional interest in Classics outside of the classroom. She worked closely with the science centre We the Curious from 2016 to co-create new story-focused activities for the museum’s events programme. The impact of Dr Liveley’s collaboration with We the Curious involved new ways to enhance visitor experience and a step-change involving a new narrative approach to science communication. The education team report that this ongoing partnership has not only ‘enhanced their understanding of the scientific concepts that can be explored through classical myths’ but ‘has allowed the museum to see how the arts and sciences can be bridged through narratology’ and to use this new knowledge to position itself as a hub for the exchange of cultural (rather than purely scientific) knowledge, bringing them a ‘new type of engagement with the public’, enhancing their public appeal and future sustainability [5.4]. Dr Liveley has worked with them to: co-create new story-focused activities for their live-science team; enhance staff training; co-curate a public event (‘Telling Stories About Robots’) in July 2018; develop the museum’s ‘Curiosity Club’ (a disability peer support group with charity WECIL <http://www.wecil.co.uk/>, discussing science-linked topics inspired by disabled visitors – e.g., ‘Could a robot socialise with me at quiz night?’); and the prototyping and piloting phase of the museum’s public programmes in their ‘Theatre of Curiosity’ (ongoing). The impacts of this partnership for the beneficiaries have been both educational (using the underpinning research to enhance understanding of fictional stories shaping the realities of robot science); and transformative (changing the ways in which science educators and the public think and talk about robot-themed material, and inspiring new programmes, training, and ways of working) [5.4].

In 2018 Dr Liveley also advised the Roman Baths Museum on their ‘Minerva’s Owls’ project, helping them to secure external seed-funding and rewrite their family trails with a new focus on science and story: <https://minervasowls.org/schools-and-minervas-owls/>. Their description of the impact of her input and research as ‘provid[ing] bidirectional inspiration – inspiring and being inspired’ [5.5] summarises perfectly the collaborative nature of *The Science of Stories* case study.

5. Sources to corroborate the impact

- 5.1 Excel Reports evidencing school data (anonymised) – including teacher quotations (Updated October 2020)
- 5.2 Letter of Support from National Charity Partner, Classics for All (October 2020)
- 5.3 University of the West of England (October 2020), Corroborating Letter, PGCE English Director
- 5.4 We the Curious Museum (October 2020), Corroborating Letter (<https://www.wethecurious.org/>)
- 5.5 Roman Baths Museum (July 2019), Interview Transcript
- 5.6 Olympus Challenge & Classics in the Classroom (Classics for All national awards criteria)
- 5.7 Bristol Classics Hub Classics for All Annual Report 2019/20
- 5.8 Letter detailing ‘Support for UWE/Bristol PGCE English Partnership Schools during Covid-19 school closures March 2020’
- 5.9 Excel Reports evidencing Science of Stories (SoS) page downloads, views, and users
- 5.10 Letter of Support from National Advocacy Partner, Advocating Classics Education (2020)