

xR StOries & sign Screen Industries
Growth Network

xR StOries

StOries

Empowering the
Screen Industries
of Yorkshire and
the Humber

Final Report
2023

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Introduction

Innovation is the lifeblood of the creative industries but in order to innovate companies need time, space and support to conduct research and development. The University of York is at the heart of our creative and cultural sector in Yorkshire and the Humber. We bring an enviable track record of world-leading applied research at the intersection of creativity and technology.

XR Stories combined this track record with strong partnerships and a collaborative ethos for the benefit of our creative cluster of businesses and organisations, as they each sought to understand the challenges and opportunities of future XR storytelling. The research and development work funded by XR Stories has been overwhelmingly successful. It has enabled more than 600 companies to conduct work which they otherwise would have been unable to find the time or resources to do.

We have fostered new connections between researchers and industry, supported by the reputation and influence of the University of York, to maximise benefits for all our partners.



Together, we have forged a new way of working and the partnerships that have emerged have resulted in innovative and award-winning productions and performances, novel immersive stories, AI-powered games and experiences. This has included projects for leading global companies such as WarnerMedia, Sky and ITV.

We have explored new ways of telling new stories to new audiences. We have helped future proof the creative industries of Yorkshire and the Humber and so enhanced the UK's wider creative ecosystem and world wide reputation.

It has been my huge pleasure and privilege to act on behalf of the creative sector of Yorkshire and Humber over these last five years. I am also delighted that we have helped to cement the legacy of XR Stories by bringing one of the CoSTAR Labs to our region, led by the University of York, and located with one of our strategic partners, Production Park, near Wakefield. The UK's creative sector has all the building blocks in place for further growth and creative success. Once again Yorkshire and Humber, through the direction of the University of York and our innovative creative partners, will have a leading role in helping to write this future story.

Professor Damian Murphy

Director, XR Stories



The Screen Industries Growth Network (SIGN) was conceived as a way to help the screen industries of Yorkshire and the Humber to thrive. Launched just as the Covid-19 pandemic hit, the project was immediately forced to pivot and focus on helping local businesses survive. As lockdown subsided, the screen industries in our region began to quickly recover, bouncing back stronger and more vibrantly than ever before.



There is a palpable creative appetite and energy in this part of the country which has boosted demand for skilled workers within our region. This fuels the need for cutting-edge and inclusive skills provision and training, and support for a diverse range of ambitious individuals. The screen industries need both new entrants, who want to take advantage of opportunities to build careers, and experienced professionals wishing to obtain new skills, develop their careers, grow their businesses, explore potential markets, and, ultimately, employ more people.

SIGN has brought a wealth of positive change to our region. We've trained, empowered, developed and upskilled individuals and businesses. Our unique focus on building skills, coupled with a strong focus on diversity and inclusion, has created new opportunities and enriched the local creative workforce and the business landscape alike. There is much more to do, but the demands for our services have demonstrated that initiatives like SIGN are not just necessary but vital to the continuing health of the screen industries in our region.

I look forward to welcoming greater activity in this sector, driven by creative ideas and technological innovation, facilitating an even more diverse workforce which is equipped to grow and evolve, and ensuring Yorkshire and the Humber continues to shine at the cutting edge of film, TV, games and digital media in the UK.

Professor Duncan Petrie

Director, Screen Industries Growth Network

Our impact at a glance

XR Stories
£9m



investment by
AHRC, ERDF, and
the University of York

SIGN
£6.5m



investment by the Research
England Development Fund,
and the University of York, in
conjunction with regional industry
partners, and a consortium of
eight Yorkshire universities

114 funded R&D
projects,



across

224 different
companies,



providing grant
funding of

£3.5m



XR Stories has realised

£25.7m

co-investment based on an
initial investment of **£6.5m**
from AHRC



£6.8m

co-investment based on an
initial investment of **£5m** from
Research England



£6.6m

of additional revenue generated
by SMEs working with XR Stories
by the end of 2023



211

internships and placements
funded across **61** employers



543

new or maintained jobs in
Yorkshire and the Humber
SIGN has realised



168

bursaries awarded to assist people
facing financial hardship getting on
or getting into the screen industries



600+

different companies engaged in work with XR Stories



150+

different companies engaged in work with SIGN



73

research projects, providing funding of **£1.6m** to higher education institutions



17

Masters and PhD projects embedded with industry partners



129

papers or publications produced to date

Total of



154

training schemes delivered

2000+

individuals participated in training

279

businesses engaged in training



Innovating together: industry and higher education in partnership

XR Stories and the Screen Industries Growth Network (SIGN) have spearheaded the University of York's response to the UKRI's 'Creative Clusters' initiative. The clusters programme aims to nurture and support the development and growth of the UK's Creative Industries, a sector which contributed £109 billion to the national economy in 2021¹.

Given the concentration of the screen industries in London and the South East of England, this opportunity had a particular resonance in Yorkshire and Humber where film, television and games production has been growing at a higher rate than in the rest of the UK since 2009². The University of York was well placed to help drive growth in the region by working with and supporting local businesses in the sector.

Digital Creativity was already established as a key institutional strength at York, powered by innovative interdisciplinary and collaborative activity driven by the Departments of Electronic Engineering, Music, Theatre, Film, Television and Interactive Media, and Computer Science. This strength was realised through major projects

involving partnerships with industry such as Digital Creativity Labs (DC Labs), an £18m digital economy impact hub funded by the Engineering and Physical Sciences Research Council (EPSRC) together with AHRC and InnovateUK for innovative research in the convergent area in the convergent area of digital and creative technologies, and the £12m EPSRC Centre for Doctoral Training in Intelligent Games and Game Intelligence (IGGI).

XR Stories and SIGN have built on this track record of R&D excellence. Funded by the AHRC Creative Industries Clusters Programme, XR Stories was established by the University of York working with Screen Yorkshire, the BFI, and an array of regional and national industry and university partners. The project's principal aim was to invest strategically in R&D activities that would have a transformational impact on the economy of the screen industries (film, TV, games and digital media) in Yorkshire and the Humber. Most notably in the areas of virtual reality (VR), augmented reality (AR), and related eXtended Reality (XR) technologies, with the aim of helping this cluster

¹ DCMS Sectors Economic Estimates: Monthly GVA (to September 2022)
<https://www.gov.uk/government/statistics/dcms-sectors-economic-estimates-monthly-gva-to-september-2022>

² Creative industries: Sector Deal (HTML)
<https://www.gov.uk/government/publications/creative-industries-sector-deal/creative-industries-sector-deal-html>



become a UK centre of excellence for immersive and interactive storytelling.

By the time XR Stories launched in 2018, the core team had secured additional funding from Research England to substantially enhance support for the local creative sector through the Screen Industries Growth Network (SIGN).

Beginning in 2020, SIGN's focus has been on:

- the promotion of diversity and inclusion in relation to the workforce;
- the content produced and the audiences consuming it;
- addressing skills gaps through the provision of new training schemes;
- helping individuals and companies understand and take advantage of rapid technological change;
- providing new research into immersive and interactive storytelling, digital creativity and the screen industries, the audiences of the future, creative industries policy and practice, and the make-up of the businesses and the workforce in those industries.

Over the past five years, both projects have directly supported and enhanced the region's screen industries through the provision of academic and technical expertise, and interconnected programmes of funding, collaboration and support across film, TV, games, media arts, culture, advertising and technology. We have generated and facilitated new ideas and activities. We have connected companies and supported agencies and universities through training, business development, research and evaluation services. This has in turn generated a wealth of activity underpinned by an ecosystem of support, collaboration and partnerships reaching across and beyond the region.

Through all this, our own institution has reflected upon our place within this ecosystem, and been changed by what we have achieved, truly living up to our strategic objective and responsibility as a university for public good.

The XR Stories and SIGN project teams have provided a variety of expert services. Our creative producers have empowered Small-to-Medium Enterprises (SMEs) to expand their R&D capacity, access the very latest technologies and approaches, showcase their work across the world and build global networks. Our research fellows have been embedded in R&D projects, and provided expert advice about the latest thinking on immersive technologies, accessibility, interactive storytelling and the future development of the sector. We have funded academics to undertake novel creative industries research in key areas such as skills, training and careers; inclusion and diversity; the development of new technologies such as virtual production and environmentally sustainable production practices. We have developed and researched new technologies and experiences.

The importance of our partnerships has also leveraged new co-investment from industry, universities, funders and other sources (£25.7m and £6.8m by XR Stories and SIGN respectively). We have grown productive collaborations with Warner Media, Sky, ITV, Production Park and The National Science and Media Museum amongst others. Through our partners we have nurtured new ideas for content and experiences, grown the capacity to realise these ideas, and enhanced opportunities for employment, training and careers, all to the benefit of the creative sector and the wider region.

XR Stories and SIGN have been housed at the University of York in The Guildhall, a medieval building in the heart of the city, bringing together York's established association with heritage and its emerging status as a place of creative technological innovation. The Guildhall provides flexible offices and our staff have facilitated the support of our research, development and innovation activities from this base. XR Stories has a well-equipped lab facility in the same building, providing expertise, support and technology to enable experimentation, exploration and testing of ideas, a place for collaboration, learning and play.

Funded through SIGN, The Creativity Lab is a second lab space located in the University of York Library on the Heslington West Campus. This is open to our academic,

research and student communities, and provides opportunities to try out and learn about emerging technologies through hands-on experimentation, augmented by a range of courses and workshops.

The organisation and delivery of XR Stories and SIGN has been focussed around interlinked thematic areas of work. These are Research, Development and Innovation; Empowering Individuals and Facilitating Careers; Supporting Businesses with Skills and Training; Equality, Diversity and Inclusion (EDI); and fostering Economic Growth. The following sections of the report will cover each in turn and highlight the outcomes that have emerged, and the value that has been produced.

Research, development and innovation

Context

Research, development and innovation are key to any creative industry, enabling opportunities for new ideas, products, services and ultimately growth. The UK creative sector is world-leading in its reputation for creative content, and innovation is core to this success. In turn, this supports the development of the myriad of small-to-medium and micro businesses that make up much of this economy.

The AHRC Creative Industries Cluster Programme brought a unique opportunity to invest in R&D for growth. This investment was rooted in both sector and place, and supported through the role that universities have as a key pillar and hub of research, learning and community within their regions. Yorkshire and the Humber has a thriving and innovative ecosystem of creative practitioners, companies and support organisations working across screen (film, TV, games and digital media) and live performance. These entities are adept in their own fields, and with time, investment, and expert support can produce compelling work for a worldwide audience, bringing economic growth with societal and cultural impact.

What did we do?

Working in partnership with industry located within our creative cluster, we brought together academics from the social sciences, sciences and engineering, and arts and humanities to provide R&D support and undertake agenda-setting and interdisciplinary research.

XR Stories and SIGN provided R&D funding and support to companies to develop new products, ideas and services. We have done this through a comprehensive programme

“R&D support from XR Stories made this ambitious project a reality for XR Games. Storybox presented a significant opportunity as a product, a potential product category, a showpiece to attract further business, and in developing long-term skills and proprietary technology in AR and VR.”

XR Games, an award-winning game development studio who collaborated with XR Stories to produce an entirely new form of multimedia and mixed reality storytelling, called Storybox

of R&D grants, facilitating agile innovation processes, internships and providing support through access to our creative team, R&D lab, equipment loans, and university-based researchers.

XR Stories fostered and developed global partnerships with Warner Media, Sky and ITV. To do this, we developed a framework for engaging large global media organisations with local industry in creative R&D. We identified and defined key challenges relevant to the lead partner's business, developed a brief and engaged with creative regional SMEs to respond to the challenges set. We facilitated the pitching process and worked with local SMEs to strengthen their response to these briefs. The selected SMEs gained access to key global companies and their IP, with the XR Stories' R&D team supporting these SMEs through their R&D sprint. The transparent innovation process led to invaluable knowledge sharing and collaboration opportunities.



SIGN has generated research on key topics such as the size and shape of the screen industries sector in the region; new production processes and technologies; careers, work cultures and practices in the screen industries. The research is academically rigorous and of relevance and value to companies, policymakers and third sector organisations. We have supported early career scholars, funded work on the impact of Covid-19, and embedded researchers within sector organisations including our partners the BFI and Albert-BaFTA (an environmental organisation encouraging the TV and film industry to reduce waste and its carbon footprint) to provide them with new research capacity.

The SIGN and XR Stories research team at the University of York has brought new perspectives to the development and use of XR technologies. Research topics have included the emergence of virtual production; changing skills and training environments; regional economic development; creative industries policy; how we conceptualise artificial intelligence; improving the accessibility of screen media; tackling EDI problems; and understanding new ways to tell stories.

We have also supported the next generation of researchers through collaborative projects that provide an opportunity for creative companies to inform and benefit from new research. XR Stories and the University of York funded six PhD and 11 Masters by Research studentships, all embedded with leading regional, national and international companies including [Bang and Olufsen](#), [BBC](#), [Digifish](#), [Opera North](#), [Betajester](#) and [AY-PE](#).

Our development programmes combined training to address key skills-gap or EDI issues in the screen sector with targeted mentoring support to encourage ideas incubation and help nurture talent. A number of these programmes went on to provide R&D grants to allow participants to focus on prototype development and provide access to vital equipment and follow-on support.

We've also fostered collaboration between researchers in Yorkshire and the Humber and across the UK. New networks have formed between universities in the region, and colleagues at partner institutions have produced important work informing the operations of streaming giants, national broadcasters and regulators that has a direct relevance and benefit to companies and organisations within our own creative cluster.

We have organised conferences and seminar series which have included speakers from almost every continent, and members of our team have shared their work around the world (in person, on Zoom and in VR).

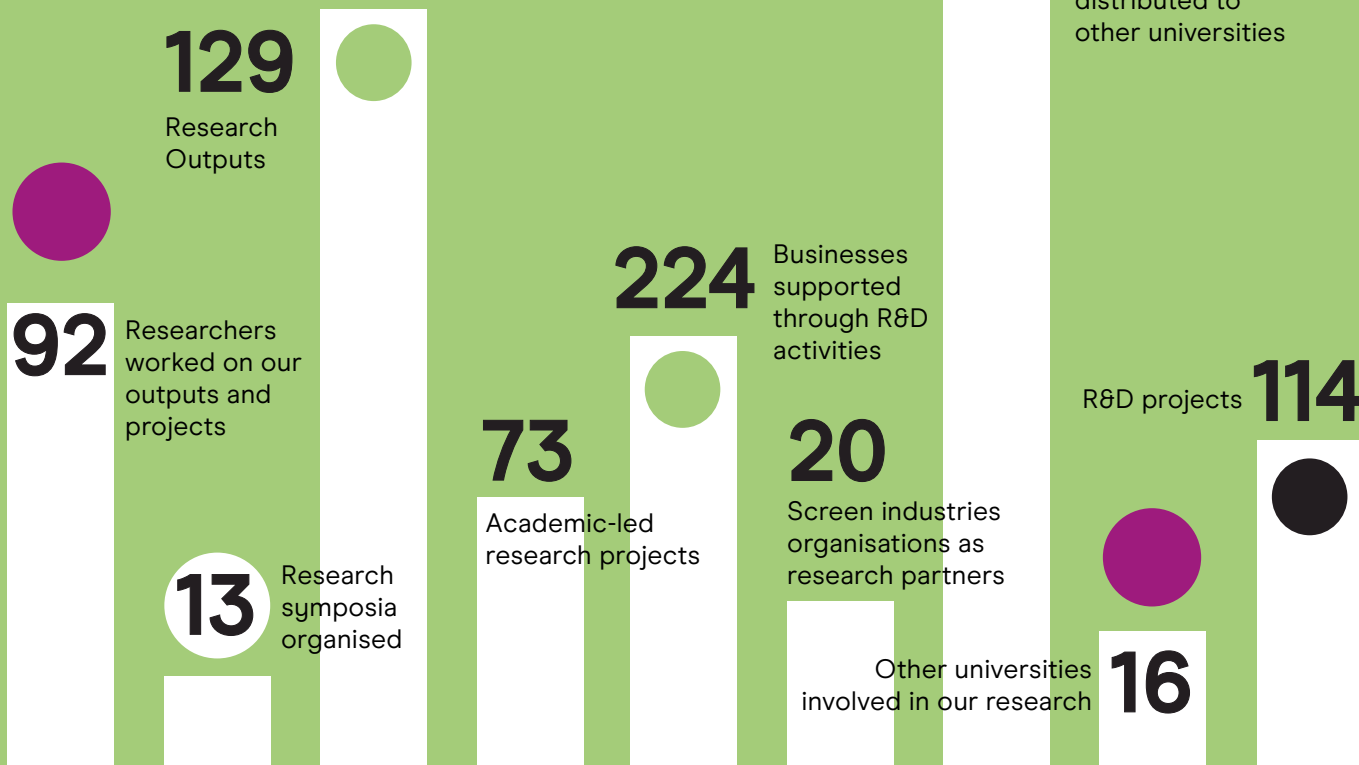
What were the outcomes?

Research from 58 academic-led projects has expanded our understanding of the creative sector at regional, national and international levels. This research has pushed the boundaries of knowledge and supported decision-makers across the screen industries to foster the development of their organisations and the wider sector. We have engaged with policy-makers at regional and national levels to help improve the way the creative industries operate by highlighting discrimination, exploitation and exclusions and offering ways forward. Our research to understand these processes is reconceptualising creative R&D practice, and has informed the development of the [UK Government's Creative Industries Sector Vision](#) that sets the agenda for the country's creative economy for the next decade.

The 114 R&D projects we have funded have enabled the development of new experiences for virtual reality, augmented reality, mixed reality, mobile, immersive dome projection and screen. We've brought together creative companies and practitioners, digital specialists, researchers, and national and international media companies. We've worked with researchers from universities across the region, and enabled our creative businesses to grow, develop and thrive during a period of immense challenge to the sector.

Key metrics

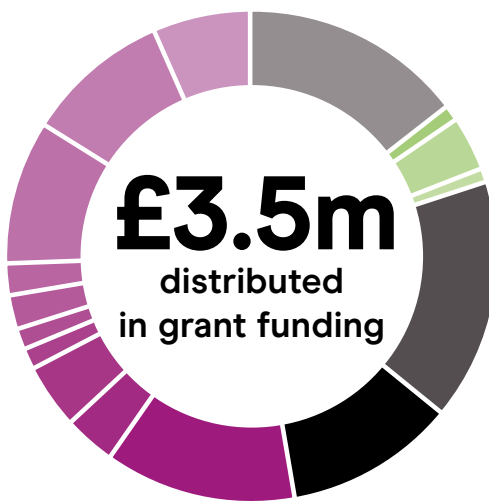
Research, development and innovation



Grant distribution:

Challenge led R&D

- £235k to Young XR projects
- £337k to Strategic XR projects
- £336k to Open XR projects
- £75k to Climate Challenge projects
- £80k to XR Demonstrators projects
- £49k to Match/Follow On projects
- £47k to XR StoryLab projects
- £151k to Creative Futures projects
- £121k to Future is Northern projects
- £439k to Small Collaborative R&D projects



Research Fellowships

- £513k to Research fellowships

Pilot projects

- £35k to Pilot projects
- £129k to Strategic pilot projects
- £30k to OpenXR pilot projects

Studentships

- £566k to studentships

Global partnership projects

- £406k to global partnerships

Co-investment R&D:

£11.7m

generated in co-investment
on R&D projects



additional turnover projected
for participating companies

£6.6m



To date:

- 12** new digital stories developed
- 5** new interactive tools developed
- 30** new immersive and interactive narrative experiences produced
- 543** new or maintained jobs
- 17** industry-led Masters and PhD projects



“It was a great benefit to have access to the university’s technical and physical resources (including rehearsal studios and office spaces) ... I had a constant stream of questions regarding programming, 360 filming and practical issues, which the academic team were always ready to answer.”

Vidaveo, who produced the R&D project, ‘Mind Hopping’

Key collaborators

We have collaborated with: albert-BAFTA, BFI, Creative Industries Policy and Evidence Centre, ITV Studios, National Autistic Society, Opera North, Production Park, Raising Films, Royal National Institute for the Blind, Royal National Institute for Deaf People, Sustainable Arts in Leeds (SAIL), Share My Telly Job, Sky, UK Interactive Entertainment (UKIE).

Key R&D partners

BetaJester are a York based immersive gaming experience studio who worked with us at the XR Stories application stage and have since collaborated across four of our projects and funding programmes.

BBC R&D have collaborated and co-supervised five research studentships one of which included a further international partnership with Bang&Olufsen, Denmark.

Sheffield based Megaverse have worked with us across three projects and developed the ambition of their live immersive performance technology, content and outputs as part of our partnership.

Sky led one of our key Global Partners Project industry challenges and worked with four regional SMEs in developing content using core IP for their new technology platform.

We enabled a new live performance project between Production Park and Northern Ballet, and working with Production Park again, XR Stories and SIGN delivered immersive training programmes that used their new state-of-the-art virtual production studio near Wakefield. The work paved the way for the University of York led CoSTAR Network lab facility to be co-located at this facility.

Examples of our research and reports

[A Tale of Two Productions: A Christmas Carol on Stage and in VR](#) ^[14] ³

During the COVID-19 pandemic, many theatre companies began experimenting with new technologies and ways to bring their work to audiences. As in-person performances resumed, theatres started exploring how these new techniques could be incorporated into their productions. This report looks at the process, challenges, and creative decisions behind these shows.

[The Time Project](#) ^[69, 70, 92]

The Time Project monitored working hours and pay amongst TV workers for six months and highlighted the very long days they have to work. Findings reveal that the TV industry has working weeks equivalent to two days longer than the UK average and explores pay disparities across the sector.

[Do People Matter? Presence and Prosocial Decision-making in Virtual Reality](#) ^[40]

VR simulations with virtual characters have been increasingly used to understand context-based human behaviour. This study investigates player perceptions of agency in VR experiences, looking at how player psychological and behavioural reactions in multi-player VR experiences compare with single-player VR experiences.

[The Neon Pack](#)

An immersive 360 experience created by Human Studio interpreting three scenes from an original short story by XR Stories research fellow, Nick Bax. The Neon Pack is a Protopian Tale that takes place in a very near future where XR technology is seamlessly fused into our everyday lives, enhancing even the most mundane of activities.

[What is Virtual Production?](#) ^[72]

This report highlights the prominent technologies involved in virtual production (VP) and examines the opportunities and challenges associated with this rapidly evolving field. It explores how VP is changing established production workflows and concludes by outlining a VP research agenda.



[Creating Audio Object-Focused Acoustic Environments for Room-Scale Virtual Reality](#) [26]

Cutting-edge VR replaces the real world with digitally presented worlds that players can explore using physical movements. These digital worlds also need to provide appropriate acoustic cues to appear believable and navigable, requiring novel working methods in sound design. A new approach is proposed and tested which combines 3D spatial audio with systems which organise the sounds' behaviour and integration with sight and tactility. The method described improves the digital world's believability and accommodation for interactivity.

[Cultural and Innovation Intermediation in the Cultural-Creative Industries](#) [32]

This paper examines the role of universities as intermediaries of creative R&D. It follows the work of a UK university to create, foster and manage the relationship between SMEs and a global media company. In so doing, it illustrates the plural and hybrid nature of cultural and innovation intermediation and highlights the important role that universities can play in supporting R&D for both SMEs and global corporations.

[Interactive Storytelling for Children: A Case-Study of Design and Development Considerations for Ethical Conversational AI](#) [8]

Increased attention is being directed towards the implications of Conversational Artificial Intelligence (CAI) systems that are increasingly present in our lives and those of children. This paper uses an R&D project as a case study, reflecting on social context to show the need to connect and embed ethical and technical aspects into CAI design.

[The Next Generation of Audio Accessibility](#) [21]

Technological advances have opened up new ways to broadcast audio accessibility. This research builds on current accessibility knowledge with two experiments, which compare two audio accessibility methods and evaluate the audio access needs of neurodivergent audiences respectively, showing that the access needs of neurodivergent and d/Deaf and hard of hearing individuals overlap.



Case studies

Sky

XR Stories partnered with Sky on an R&D challenge to explore the creative possibilities of an exciting new digital product.

“ The collaboration with XR Stories has been a unique one for Sky. A cross-functional team from across Sky’s Content Commissioning, Product Design and Innovation teams worked together with XR Stories and two creative companies from the Yorkshire and Humber region.

We tasked the companies with generating ideas for innovative new audience experiences and interactive storytelling experiences. Our ambition? To explore and develop compelling use cases to motivate further internal investment from Sky and inform the technical specification of the product.

Over four months, the project teams developed new prototype concepts based on existing Sky IP. Each project adopted an agile approach, focusing on iterative concept development, rapid prototyping and user testing.

Sheffield-based digital studio, Joi Polloi, developed an immersive motion tracking and gesture control game for children focused on Sky original IP Tom Gates. The game demonstrated the potential of Sky’s technology to create a multi-sensory adventure for children to play through expression and movement.

Reflex Arc, software developers based in Leeds, developed an immersive audio-driven game, Escape the Dark, for normal sighted, blind and partially sighted users. Focused on Sky IP ‘The Rising’ the game highlighted the potential of Sky’s technology for an accessibility-first approach, using high contrast avatars and 3D immersive soundscapes.

The collaboration with XR Stories has enabled Sky to leverage leading academic research and connect with regional companies at the forefront of XR storytelling to explore radical new audience experiences. It’s invaluable work. ”

megaverse

XR Stories helped Sheffield-based interactive content studio, Megaverse, to develop new technologies, boost employee numbers and secure significant new commissions.

“ Our journey with XR Stories began in 2020 when we received an R&D grant to explore how augmented reality (AR) could be used to help theatre production teams save time and money. We created an app, Block, that enabled practitioners to co-create the foundations of a 3D set, and see their design in the real world with AR before committing to a final decision.

In 2021, we secured further support from XR Stories to develop an immersive adventure experience, Flood. We explored how motion capture, VR and tracking technologies could be used alongside live audio feeds to create a unique experience where actors and audience members work together in a virtual world. The output of this project was a high quality prototype demonstrator that we used to secure full production funding for an immersive performance called SURGE.

Most recently, we collaborated with the team at XR Stories on Home Planet, a VR experience by SAIL. We were commissioned by SAIL to help realise their vision for Home Planet, which explores the potential impacts of flooding in Hull. With R&D support from XR Stories, we created an emotive, immersive experience that places people in a virtual story world as an alternative to overloading them with facts and figures about climate change.

The support that we've had, and continue to have, from XR Stories has been exceptional. Being able to draw on their technical expertise, experiment with state-of-the-art equipment, and link up to world-leading research has enabled us to accelerate innovation and business growth. Since our launch in 2018, Megaverse has doubled in size year-on-year and we're now winning six-figure value contracts. XR Stories has played a vital role in helping us to achieve such exponential growth. ”





Tyke Films

Tyke Films, a Sheffield-based production company, received support from XR Stories to diversify its business offer and increase revenue.

“ XR Stories has supported the growth of our business since our first collaboration in 2021, when we received an R&D grant to remodel an animated short into a new format using CGI and 360° VR. The Tell-Tale Rooms, an immersive storytelling experience, celebrates the life and unique experience of artist, Eden Kotting, enabling audiences to explore Eden’s memories and lived experience through virtual rooms modelled on her childhood home. It went on to be shown at Sheffield DocFest and CPH:DOX in Copenhagen in 2022, and SXSW in Austin, Texas in 2023.



We’ve continued developing our business thanks to additional R&D funding from XR Stories. Their support has enabled us to create a new VR experience based on an animated short film, Plunge. With hand-drawn animation, haptic feedback, mindfulness and breathing elements, Plunge VR aims to introduce users to the power of immersive experiences for wellbeing. We’re really excited by the future potential of Plunge VR and we hope to finalise a prototype that we can use to expand the project in the future.

Our journey into VR would not have been possible without XR Stories and this partnership has been instrumental in scaling up our business - our revenue has already increased by more than £50,000 and we expect this to go up again in 2024. We’ve also added another member of staff to our team – which is huge for a small business like ours. By drawing on the XR Stories team’s expertise and state-of-the-art equipment, we’ve been able to really get to grips with immersive technologies, allowing us to market ourselves in this space going forward. ”

Empowering individuals, facilitating careers

Context

Gaining work experience is a vital step for new entrants seeking employment in the screen industries. Once entry has been gained, careers can be difficult to maintain and progress. The sector has, in the past, relied on unpaid work opportunities as the main gateway, but this excludes many who are unable to afford undertaking unpaid work.

In 2019 ScreenSkills reported that 38% of screen industry employers based in Yorkshire and the Humber identified problematic skills gaps within their workforce⁴. This, coupled with a lack of diversity within the industries, has produced a unique set of challenges and opportunities for the sector to address.

What did we do?

Employability work delivered through both XR Stories and SIGN has supported diverse learners, from new entrants to the sector through to decision makers and leaders. Within SIGN, this focused on upskilling and professional development courses as well as offering paid placement opportunities. For new entrants we offered professional skills courses, and helped those who were planning new or different career paths within the industry to identify and develop their transferable skills. Leadership development and coaching enabled those already within the screen industries to progress their careers to the next level.

Within XR Stories, employability work was focused around providing paid internship and placement opportunities. The internship programme supported current students and recent graduates from Yorkshire and Humber-based universities. Funding was devolved to seven university partners (University of Leeds, Leeds Beckett University, University of Sheffield, York St John University, University of Bradford, Teesside University, and Sheffield Hallam University) to ensure opportunities were provided in a wide geographical area and in order to benefit a wider range of students and employers. Internships were designed with immersive and interactive digital storytelling experiences at their core.

Through SIGN, we established a Regional Skills Providers Forum to enable collaboration and partnerships across the region. As a collective we have identified and tackled skills gaps, and offered holistic support for technical, professional and talent development.

A specific, innovative training fund grew and diversified regional training provision by investing in (and de-risking) the development of innovative training schemes to tackle

skills gaps. In particular we upskilled individuals looking to build on their industry knowledge and experience to become effective trainers.

The training we offered has utilised a variety of delivery methods to ensure accessibility, including both synchronous and asynchronous learning through live training and self-paced on-line courses.

For students and staff based at the University of York, we established the Creativity Lab within the university's existing library facilities. This lab is equipped with state-of-the-art technology and provides access to equipment alongside workshops and training to allow skills development and hands-on experience.

We worked in partnership with One to One Development Trust to produce an innovative, educational game – Play Your Way into Production – available to download and play for free in 2D or in VR. The game gives players a chance to experience a day with a film crew, explore the set, meet the team and work through realistic scenarios, learning vital professional skills along the way. The development of the game stemmed from our research on skills gaps and development needs for entrants to the screen industries and has pulled together advances in game design and new approaches to education and training.

“[The]... major thing that I've gained from this is there's the old adage of 'oh you need experience to get experience', so this has been an opportunity for me to get my foot in the door.”

Joe Fenna, an intern with the Ilkley Literature Festival

What were the outcomes?

We offered a wide range of courses and opportunities, including 46 short courses on screen industries relevant topics, 16 intensive courses to develop skills in a specific competency, five mentoring schemes and 25 technical skills courses. We awarded £130k funding to training providers through the innovative training fund with 114 individuals supported to attend the courses. Eighteen regional trainers were upskilled through SIGN support.

In total, more than 2000 individuals have benefited from skills development and training offered by SIGN.

For individuals hoping to build a career in the screen industries, paid placements and internships allowed them to earn as they gained experience, insight and started their careers. It meant that people who would previously have been denied access to the sector due to economic reasons were able to get a foot in the door.

⁴ Screenskills (2019) Annual ScreenSkills Assessment August 2019

<https://www.screenskills.com/media/2853/2019-08-16-annual-screenskills-assessment.pdf>

Key metrics

Empowering individuals,
facilitating careers

Library Creativity Lab

600+ attendances

86 training schemes delivered

96% of participants learned new skills and were inspired to learn more

211 placements and internships funded

100% of placement participants

and **98%** of interns said they had developed new skills as part of the programme

Of those responding to our survey

55% interns and placement participants got a job with the same company they worked with

and **39%** continued into other relevant work.

2000+

individuals supported through training

110

mentees taken through the process

70

mentors engaged

43 online courses delivered

24 in-person courses delivered

8 hybrid courses delivered

5 mentoring schemes delivered

7 e-learning courses delivered





“As someone with business and leadership experience, it gave me the opportunity to view things from a different perspective. This demonstrated the importance of strong leadership and clear vision to a project, particularly when motivating a team. Internships are a valuable way of trying out a particular type of work or exploring an interest without having to make a long term commitment up front, and I now know I would be interested in pursuing further work in this field.”

Intern working with Experience Heritage



Case studies

Anthony Attwood

Anthony Attwood was placed on a paid internship with Hull based media arts specialists, Studio McGuire. For twelve weeks in the summer of 2020 Anthony worked as an XR developer, in an opportunity funded by XR Stories.

“ I was undertaking a part-time master’s degree as a mature student at the University of Hull when I came across this opportunity. At the time, I was juggling other work alongside my degree, and looking for job opportunities as a VR developer in my local area. But this proved to be really challenging; I come from an underprivileged background and struggled to find any paid work experience where I live. I felt like I was being held back in my career ambitions. Then I saw this paid internship opportunity at Studio McGuire and thought - finally! This could be a way of getting my foot in the door.

It was a fantastic opportunity. Whilst working alongside the studio directors, I helped develop an immersive VR game experience, The Grains of Recollection. My contribution was really valued. Being able to share the completed game with family and friends was an emotional experience. My eight-year-old nephew loved being able to run around and experience the scenes I had created.

The internship really did propel my career – since finishing it I’ve been headhunted by other studios across the UK. Because of the experience, I became familiar with the expectations of working with small teams in a live studio atmosphere where tasks have to be completed quickly and clear communication skills are essential to creative development. The skills I gained from the internship have never stopped being useful. I was scared my age was against me but I’ve proved to myself that I can achieve great things. ”

Imaan Labad

Imaan Labad joined independent production company, Candour Productions, on a SIGN-funded placement in Summer 2021.



“ Growing up, my family had no background in film or TV and, although coming from Bradford – a UNESCO City of Film – the screen industries always felt like an inaccessible world. I’ve always been interested in social history and social issues and, after graduating from Newcastle University with a degree in History, and a brief stint working in local government, my ambition was to work in TV.

Trying to get my foot in the door proved difficult. I found the industry inaccessible, mostly because most new entry roles were unpaid. When I found out about SIGN’s paid placements, I knew this was the scheme for me. I really liked its focus on attracting applicants from diverse, underrepresented and lower socioeconomic backgrounds.

I joined Candour as a junior researcher for six months as part of the development team, researching and helping work up ideas for a range of broadcasters and streamers. The length of the placement meant I gained vital experience and skills which would lay the foundations for a career in TV, including treatment writing, designing proposals, cutting small sizzle tapes, and working as a runner. The company is local to me and their ethos of sensitive filmmaking and documenting important subject matters appealed to me a lot. Through work done during my placement, I received my first professional credit for Panorama’s Beyond Reasonable Doubt: Britain’s Rape Crisis as a junior researcher.

Once my placement ended, Candour offered me full-time employment as a development researcher. Since then, I’ve worked on numerous developments, productions, and projects, attended events like Sheffield DocFest and received credits on Britain’s Most Luxurious Train Journeys, 33 Families and One Big Build.

My placement with Candour really did start my career in the screen industries, and it was all made possible through SIGN funding. ”

Supporting businesses with skills and training

Context

Industry specific structures, demanding working conditions, and traditional recruitment practices contribute to recruitment difficulties within the screen industries. ScreenSkills report that 46% of employers considered recruitment difficulties a moderate problem, and 36% felt that this problem was severe⁵.

Emerging technological developments demand a flexible, adaptable and highly skilled workforce, but many organisations can be put off investing in training due to high costs, or a lack of confidence that the training offered will not fix perceived problems. When this uncertainty and related financial concerns are set against the demands of day-to-day delivery, training needs can go unaddressed, and the status quo maintained.

In addition, businesses are facing additional challenges caused by Brexit, the war in Ukraine, and other inflationary economic pressures. At a time when the focus for many companies has become survival, XR Stories and SIGN have been able to help businesses with time, space, and support to grow sustainably.

What did we do?

Some of the approaches deployed to help support businesses have already been discussed, including facilitating access to world-leading research and researchers, funding and supporting R&D activities, providing paid placements and internships, and loaning companies equipment that they would otherwise have been unable to access.

In addition, we supported businesses with bespoke training courses that focused on growth, diversity and inclusion, exporting to new markets, and understanding how to utilise new technologies in their creative practice. Through this support we aimed to foster sustainable and appropriate growth and development, whilst making it as accessible as possible. As these courses were resourced by SIGN, this meant that businesses were freed from financial worries about attending, and they were able to develop without having to worry about the cost implications.

Our inclusive business initiatives have helped organisations re-evaluate their practices, policies and approaches to workforce development. Our participating businesses have worked on diversity issues and received advice, guidance and action planning tailored to the sector. We have published an Inclusive Recruitment Toolkit, to empower

businesses to reconsider their recruitment practices to improve diversity in the workforce.

Business growth schemes developed and run through SIGN and XR Stories have enabled businesses to expand, collaborate and develop their teams through training and mentoring. Schemes run during the pandemic helped businesses to navigate new ways of working and become more agile.

A specific growth accelerator developed and run by SIGN helped businesses within the games industry. It provided the tools for companies to fast track their development, grow sustainably, and access new investment and finance. The programme included business proposition development, building global markets, and investor networking.

Our ERDF-funded project, Creative Media Labs ran numerous workshops and training sessions for regional businesses, exploring new technologies such as motion capture, 360 degree filming and audio technologies. We ran Storylab accelerators, introducing screen industry companies and practitioners to new immersive and interactive technologies to help them innovate and produce prototypes. We also ran residencies for businesses to test and explore our lab facilities.

We have helped companies explore new business models: Hull Urban Opera (HUO) were keen to look at how they could scale the use of screen and digital media channels, to drive audience growth and emphasise their core value of diversity. Our research on opportunities and audiences enabled HUO to develop a digital strategy. We also created new industry-wide guidance, with HUO as a lead exemplar.

“It gave me a very clear vision of the jobs I might access and the skills needed for those jobs. In doing so, it helped me clarify and identify what I want to do.”

‘Working in Sound’ lab participant, May 2021

⁵ Branzanti, C; Howe, L; Cortvriend, J Screenskills (2021) Screenskills Assessment 2021
<https://www.screenskills.com/media/4587/2021-06-08-screenskills-assessment-2021.pdf>

We created a series of industry briefings, to disseminate a range of far-reaching research pertinent to the screen based creative industries, focusing on working practices, technology horizon scanning, and EDI. This created a repository of online material to help support business in making informed decisions when researching, networking/ making connections, creating new projects, products, or their own IP.

The SIGN-funded York Creative Community Catalyst supported the York Creatives networking organisation to catalyse growth in the local creative and screen industry communities. York benefits from a local creative community who are world leaders in video games, TV, film and production, visual effects, festival production, arts curation, marketing and the visual arts. Despite this plethora of talent, peer-to-peer learning is under utilised.

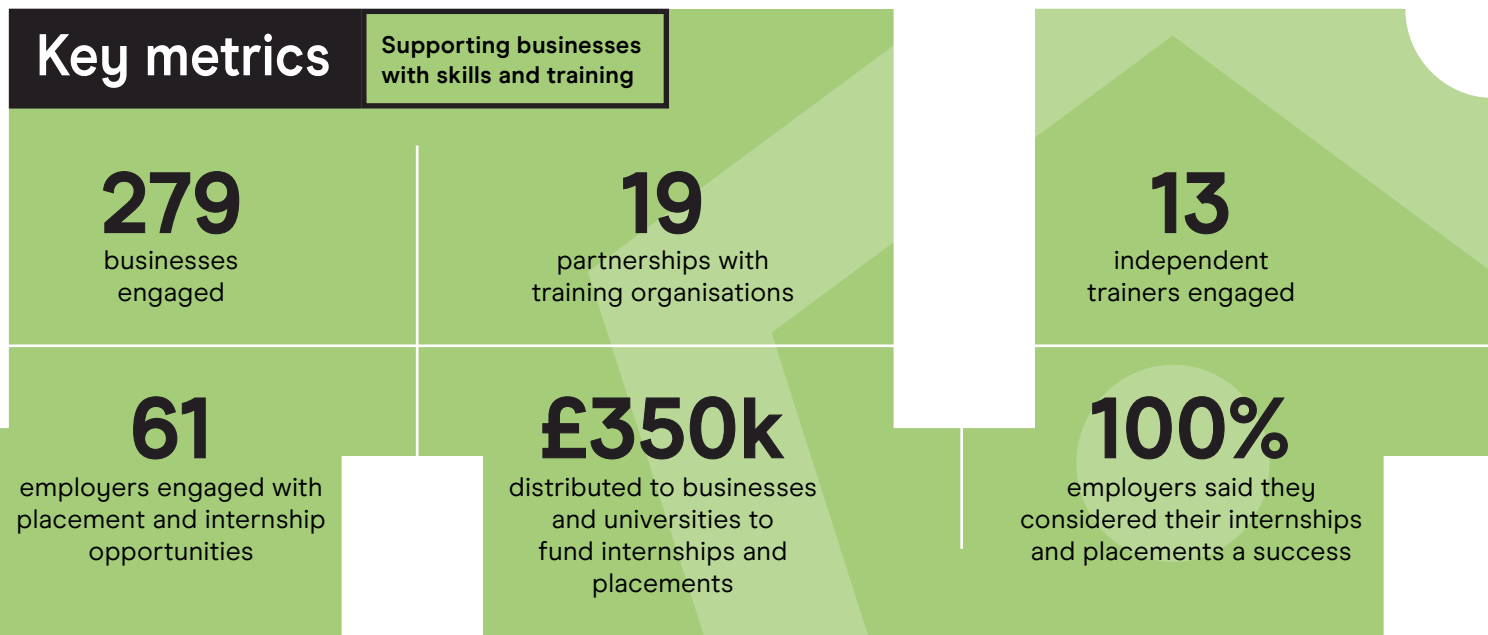
The Catalyst’s peer-to-peer learning network created a mentorship framework for earlier career professional freelancers. It delivered workshops and high-profile events to showcase local talent and enabled this community to nurture and grow individuals in a self-sustaining way.

Collaborations with Barclays Eagle Labs (a national programme of support for small and scaling technology businesses) and Game Republic (the largest industry-led games business network in the North of England) have allowed us to bring together the local digital creative community to further strengthen and grow networks. These partners have also ensured that the local area is forming links with high profile organisations.



“This session really gave me some concrete ‘takeaways’ in terms of very useful exercises that can help to unlock creativity...”

Symon Lord, Business of Creativity short course participant, March 2021



What were the outcomes?

Businesses participating in SIGN's equality, diversity and inclusion initiatives have subsequently introduced new policies, new business models, and new ways of working and engaging with their markets. They have recruited and retained new talent from more diverse backgrounds. New companies have been created and networks strengthened. Participants have gone on to strike deals with distributors, publishers and investors.

Key collaborators

We have worked with partners across Yorkshire and the Humber including Screen Yorkshire, Lightforge Academy, Film Hub North and many others to ensure we offer a broad range of training and development opportunities. These opportunities include short stand-alone training courses, medium-term interventions, through to tailored, longer-term programmes.

Interns have worked in several areas across the screen industries: Oxygen Films had five placements overall, utilising a job-share model in order to provide further opportunities; Clockwork Films had two placements focusing on people stepping up in the industries rather than offering entry level opportunities; Vidaveo wanted to work in new immersive media and hosted four interns over various schemes to help develop their in-house skills and produce new content.

Examples of our research and reports

[Skills Shortages, Gaps and Training Needs in the Screen Industries in Yorkshire and the Humber](#) ^[58]

The UK's screen industries face a series of skills shortages, skills gaps and related training needs which threaten their future viability. This report explores these issues and, drawing on interviews with the industry's representatives, provides insight into skills and training challenges observed in the Yorkshire and Humber region.

[Skills and Training Provision in the Screen Industries](#) ^[55]

Skills gaps have existed in the UK's screen industries for years but if we know where they are, why are they still there? This report examines the scale of training on offer and finds that it's not clear who the training provision is for or how it helps with career progression. It makes suggestions for improving the scope and clarity of training with the overall goal of reducing skills gaps and developing a cohesive approach to training and development.

“[I] feel on the right path to grow my business; mentoring has focused me and offered clarity. It has opened networks for development.”

Shirley Harris from Vanitas Arts,
SIGN Up mentee, Oct 2021 – May 2022



Case studies



Bethany Watrous

Bethany Watrous has engaged with both SIGN and XR Stories on a number of skills and training activities, which has helped develop her business to expand its unique offering.

“ I’m a digital heritage

professional with a background in archaeological research, film and 3D modelling. As I was finishing my masters at the University of York, I started my business, Experience Heritage, which combines my heritage and digital media passions. I began the business because I saw a gap in the market for heritage professionals who could also create virtual assets to help audiences better understand and engage with heritage.

I was delighted to be one of six women who received SIGN funding to attend the 12-month immersive tech leadership coaching programme, and was also part of the cohort for SIGN’s The Business of Creativity, and Fundamentals of Virtual Production (VP) courses. I am already using some of the technical skills I’ve been learning in the VP course in work for clients and I now have a clearer sense of how I can add this workflow to my projects for future clients. It has also been invaluable to get to know the leaders on the course, and be able to ask them questions about the software and the industry. I’ve made work and social connections with classmates in this course that I will carry on beyond these training sessions.

For a project deciphering worn inscriptions on a Victorian era memorial stone in York, I turned to the team at XR Stories, who supported me with their technical knowledge and state of the art kit. XR Stories funded two internship opportunities at my business, and I was thrilled that one of our interns won the University of York Student Intern of the Year award for [their] work with us. They were so deserving of this award – they were a great help with the development of a new heritage trail app. Their work researching and designing user experience (UX) features ensured that our current as well as future projects will be more accessible to more people. ”



Vanitas Arts

SIGN helped Vanitas Arts develop as trainers and build on their creative skill set.

“ We’ve worked with SIGN in several different ways. We were struggling to find under-represented groups within the

region who had values and goals that aligned with ours.

SIGN granted Vanitas Arts funding to develop and deliver an original skills-related course. This course, Good Trouble Labs, is a talent development programme exploring digital storytelling and is aimed at under-represented creatives in the Yorkshire and Humber region. Members of Vanitas Arts also had the opportunity to take part in a ‘train the trainer’ course, which built up our confidence and knowledge

Through our partnership and work with SIGN, Vanitas Arts has developed a proposition offering a specific programme to under-represented talent which is led by under-represented talent. Because we’d had the opportunity and funding to do various training courses through SIGN ourselves, we were sure that we had a really robust model that we were confident sharing with our cohorts.

The funding we received was a massive boost to our ability to move forward. As well as bursaries, development courses and support, SIGN has given us the tools to apply for several grants which means we can grow and become sustainable beyond SIGN.

SIGN offered so much encouragement, and encouragement is vital. We are creating change within the industry and SIGN’s mission is the same, so it has been a good partnership to move forward with.

SIGN stands for the Screen Industries Growth Network, and we have certainly grown as a result of their support, there’s no doubt about that. ”

Equality, diversity and inclusion

Context

To future proof the creative industries and embrace new technology and techniques we need to attract, support and develop talent and to build a diverse workforce. This presents opportunities to develop fresh ideas to improve our knowledge and understanding of what it means to be creative and to produce something new that appeals to, and is representative of, our whole society.

EDI has been built into the work of both SIGN and XR Stories through the adoption of a 360 degree strategy, where we embedded EDI in our normal practices across all our schemes. We have encouraged and supported businesses to implement new processes and practices to support hiring and growing workforces which are more representative of the diverse nature of our wider society.

What did we do?

We've developed and funded programmes, schemes and interventions and created opportunities for individuals who are currently underrepresented in the screen industries. We have helped businesses to understand the value of hiring outside of their typical demographic. We set ourselves ambitious targets to meet EDI criteria across our work, and to recruit 12% of d/Deaf and disabled participants, 50% female, 20% from underrepresented ethnicities, and 10% LGBTQ+ to our courses. We successfully met these targets.

We undertook a suite of video interviews with people from diverse backgrounds working in the screen industries. In this 'Industry Voices' series, successful writers, broadcasters, presenters, and games producers candidly discuss their lived experiences of discrimination and talk about the barriers they have faced in progressing their careers.

We surveyed the creative industries of the Yorkshire and Humber region to better understand what level of diversity already exists and identify where policy could help support areas of under-representation. We convened and ran an EDI advisory board to better understand issues facing both companies and individuals, and to help steer the development of further programmes of work.

Working with local EDI-focused skills providers we supported consultants to work directly with companies to address relevant challenges, develop policy, and improve their diversity profile.

The Safe to Speak Up? project, funded through SIGN, looks at sexual violence and harassment in the UK film and TV industry since #MeToo. The project asks whether it is safe to speak up on these issues, and draws data from interviews with people who had experienced or reported sexual harassment and violence at work. The study documents the lack of initiatives to tackle sexual harassment and violence in the interviewees' workplaces, describes the contradictory changes in the industry since #MeToo, and outlines what still needs to change in order to address the issue of sexual violence in the workplace.



“I was pregnant when doing the scheme and ... working with [a mentor] provided me with an example of a woman working in the industry who juggled professional and family life.”

Kath Shackleton, was supported by one of our SIGN Up mentors



Our R&D application processes conform to the [BFI Diversity Standards](#). Our websites are built to the highest level of conformance for the Web Content Accessibility Guidelines (WCAG) 2.1, and we have produced versions of our video outputs which are audio described to ensure that our own assets demonstrate our values and the need for widening accessibility.

What were the outcomes?

Although there is still much work to be done, the schemes and interventions have helped companies and individuals start to change working practices in this area.

As a direct result of training and support received from SIGN, one of our training course attendees developed and launched a business providing training and consultancy around Trans identities and experience for productions and organisations operating within the screen industries.

We also funded a study [71, 93] into the impact of diversity schemes on career progression in the screen industries in the Yorkshire and Humber region. Interviews with organisers and participants associated with four diversity schemes focused on how these schemes had helped participants from under-represented backgrounds to overcome barriers to access and progression within the screen industries. The study concluded that well run EDI schemes provide valuable experiences with a positive impact for people's immediate career trajectories with the potential to improve industry cultures and practices. Structural inequalities continue to exist, however, and this ongoing work in the sector needs to be accompanied by a culture of accountability for such schemes and such outcomes to be meaningful.

The Inclusive Growth research programme was an initiative emerging from a collaboration between SIGN and the AHRC supported [Creative Industries Policy and Evidence Centre](#). It sought to augment, scale, and validate place-based multifaceted interventions that foster equality, diversity, and inclusive growth in the creative economy. Its research methodology entailed the collection of baseline demographic data at regional level together with an examination of current interventions, and a deep-review of regional, national, and international case studies to unearth drivers of inclusive growth. The ultimate goal is to leverage these findings to shape growth development policies across sectors, with a specific focus on informing emergent policy.

Key collaborators

Candour Productions produced and developed the Industry Voices series of films and hosted a six month placement; staff from Leeds based Fettle Animation have taken part in our skills and training courses and supported two placements; Cat Marshall has set up her own business as a Yorkshire based producer working in film and high-end TV after attending a number of our skills training courses.

“This was perfect for a small organisation like ours to have access to this learning as we wouldn't have been able to afford it otherwise.”

Kathryn Hanke, supported with EDI training for her business

Examples of our research and reports

[Assessing the Impact of Diversity Schemes on Career Trajectories](#) [71]

Diversity schemes aim to address 'deficits' in training, networks, and work experience of underrepresented groups in the screen industries. This research explores their impact on career trajectories and shows how outcomes are limited by structures of inequality. The report made recommendations to maximise the impact of diversity schemes to demonstrate how they can be part of the solution.

[Organising Inclusive Events in the Games Industry](#) [59]

Informal learning spaces in the games industry are commonplace and provide opportunities for career development, networking, knowledge exchange and job opportunities. But such events can be the sites of discomfort and exclusion for people. In collaboration with UKIE (the trade body for the UK games and interactive entertainment industry), this report explores the reasons for these problems and offers ways to address them.

[Industry Voices](#)

A series of films exploring the lived experiences of people from diverse backgrounds working within the screen industries. The films present first-hand accounts of people facing discrimination, exclusion and exploitation to draw attention to the realities of working in the sector.

[The Currency of Gratitude: Care in the TV Industry](#) [46]

The TV production industry is characterised by being difficult to enter. Careers within the industry are precarious once they are achieved, with workers often feeling grateful to have work at all. This report uses interview evidence to explore how gratitude can shape working practices for good or ill.

[Equality, Diversity and Inclusion in the Screen Industries](#) [57, 91]

The potential of the UK screen industries is being limited by excluding and exploiting workers. This report provides an overview of studies focusing on EDI themes in the screen industries. It identifies gaps in knowledge and existing research, and specific data and issues relevant to Yorkshire and the Humber.

Key metrics

Equality, diversity and inclusion

36

Equality, diversity and inclusion schemes delivered

15

training businesses supported to deliver training

75

businesses accessing training or placement opportunities

168

bursaries distributed to widen access and participation and build a more diverse skills pipeline in the screen industries

Over **£250k**

offered in funded bursaries to people wanting to start or further screen industries careers

Collaborative partnerships with Screen Yorkshire and Film Hub North delivered new talent development schemes, helping to develop the skills of **119** attendees from under-represented groups.



Scratch Me

10

attendees
(over one round)



Flex

65

attendees
(over two rounds)



Script Ed

44

attendees
(over two rounds)



Case studies



Joe Shepherd

Joe Shepherd is a freelance filmmaker and Film Studies graduate who has recently completed a Masters degree in English Literature at the University of Hull.

“ I’ve always wanted to work

in the screen industries and over the years I’ve been lucky enough to gain experience on a number of film and TV productions in Yorkshire. Despite this, I was lacking confidence and often felt like an imposter. I was working as a runner on a film set when one of the producers suggested that I apply for a place on the SIGN Early Careers Support scheme.

There were about 30 of us on the course and over six months we attended workshops, one-to-one sessions and were paired with industry mentors. We learnt about the value of transferable skills, how to build strong professional networks and how to manage our mental health while freelancing.

The course leaders and mentors managed our expectations about how hard it would be to work in the screen industries but balanced this by helping us to gain the skills and confidence to be resilient to the challenges we would face.

When SIGN launched their Fundamentals of Virtual Production (VP) training course, I applied straight away and was awarded a place. As with the Early Careers scheme, the VP course ran over six months with masterclasses, workshops, visits and I even managed to get a placement on a film set.

VP technicians are in such high demand but there aren’t enough people with the skills to fill the roles. Through the SIGN course I’ve gained a really important set of skills in an emerging area that I will use to help pursue my future career.

As someone who’s neurodiverse, both of the SIGN courses have given me the confidence and skills to pursue my dream career. Thanks to SIGN I’ve completed a three month placement as a production coordinator. ”



Tania Dales

Tania Dales is a researcher and developer in the creative industries.

“ I first came across SIGN during my MSc degree at the University of York when I joined the team running the Lights, Camera, Computer -

Action! course for people wanting to work in the screen industries. I was initially recruited to create learning materials for the games module but went on to facilitate the entire course, backed all the way by the SIGN team.

When the course came to an end, the SIGN skills and training manager asked if I would like to apply for their market research internship to explore skills and training in the screen industries. The work I undertook as part of the internship increased my knowledge about some of the major issues facing people working in, or struggling to enter, the screen industries and how to support those people.

After the market research role, I applied for an internship with XR Stories, working on Virtual Reality (VR) development as part of a project focused on representations of disability in VR. Through the internship I developed new skills in VR practice and increased confidence in my technical abilities.

More recently, I was awarded SIGN funding to join an authentic tech leaders mentorship programme. Run by a local business coach who specialises in helping women in tech, the programme has helped me to learn how to thrive, rather than just survive, in industry. Thanks to funding from SIGN, I’ve been able to participate in this transformational programme and grow my skills and confidence.

I have a history of mental illness; at school I had undiagnosed learning disabilities and during my MSc I suffered from anxiety. The team at SIGN and XR Stories has consistently encouraged, supported, and listened to me without prejudice or pressure.

I’ve recently been awarded funding for a PhD at the Centre for Doctoral Training in Intelligent Games and Game Intelligence (IGGI). Without doubt, the confidence I felt during the application process grew from everything I’d experienced with SIGN and XR Stories. ”

The economic growth of the screen industries of Yorkshire and the Humber

Context

The challenge set for XR Stories and SIGN was to contribute to the economic growth of the screen industries in Yorkshire and Humber. We set out to do this through the generation of new research, supporting research and development and innovation, enhancing our regional skills and training offerings, and by embedding the principles of equality, diversity and inclusion across all aspects of our engagement with the screen industries.

These projects began around the same time as the onset of the Covid-19 pandemic. This forced an immediate rethink and pivot in terms of our planned activities and how these related to the radically altered circumstances facing not just the screen industries but society at large. Suddenly, the question became less about economic growth and more about survival. A second challenge has been a climate of economic and political uncertainty, fuelled by Brexit, inflation and the war in Ukraine.

Adversity has, however, also fuelled opportunity. The screen industries resumed production relatively quickly under Covid-safe protocols, with some companies already thriving under at-home or hybrid working conditions. Lockdown also increased the demand for new media content in the UK and around the world. The potential of new technology was also enhanced - particularly XR technologies that can bring the outside world to the consumer. This, in turn, created new skills gaps and, by way of response, new training innovations. New research was required to better understand these transformative changes and to indicate new opportunities for screen industries businesses in Yorkshire and Humber to adapt, survive and potentially thrive.

What we did

Our response has been multifaceted. Some of our schemes have focused on creating new products and services, whilst others have allowed companies and individuals the time and space to explore new business opportunities, audiences and technologies. We have supported traditional performance companies to embrace new ways of telling stories and our training schemes have supported people looking to move into new careers. Our managed innovation schemes have allowed SMEs to work with large multinational companies looking for new ideas, content and markets.

“Being afforded the opportunity to develop a project outside our regular scope significantly helps us sell our ability as experts within this field, as well assisting with securing better commercial opportunities in the future.”

BetaJester

We have helped mitigate the risks associated with creating new jobs by supporting companies to explore and try out new ways of thinking. Funding internships and placements has generated new job opportunities by demonstrating the value of new roles and the business opportunities that might emerge as a result, as well as being a force for positive change by diversifying the workforce.

Scaling up business can be difficult, and we have supported numerous existing networks to develop talent and create a more diverse and inclusive workforce: from Women in Immersive Tech (which promotes the interests of women working in immersive technology) to Game Republic. Our skills development has not just supported learning about new technologies and the opportunities this involves, but also how to start and grow a creative business. The informal networking facilitated by many of our schemes has generated relationships that have led to the formation of new partnerships and new companies.

As a result of the work delivered by XR Stories and SIGN, creative networks and communities have formed, businesses have grown, new jobs have been created and a more diverse talent pool has been developed. We have taken positive steps to help mitigate the impact of the pandemic and other challenges faced by businesses in our region – as well as encouraged and enabled them to seize the opportunities offered by next generation storytelling technology and future audiences for their content.



Examples of our research and reports

[Attracting and Sustaining the Screen Industry Workforce in Yorkshire and the Humber](#) ^[53]

Drawing on interviews and analysis of secondary sources, this report explores the past, present and future of the screen industries in Yorkshire and the Humber. It examines why people want to live and work in the region, why people leave, and the importance of social and professional networks.

[Potential of Creative and Digital Economies](#) ^[48]

The Yorkshire and Humber screen industries are a high-growth sector, supported by Screen Yorkshire, who have been championing the sector for more than 20 years and who aim to make the region one of the most sought after production destinations in the UK. This report analyses Office for National Statistics and LinkedIn data to understand the dramatic growth and potential of the Yorkshire and Humber screen industries.

[Impact of XR Stories and SIGN](#) ^[47]

Some of the fastest growing companies in the screen industries in Yorkshire and Humber have worked with XR Stories. This report examines XR Stories and SIGN's future work, looking at how the projects strengthen and diversify the Yorkshire and Humber screen industries workforce and how their future impact might be captured.



“Our activity on the project has helped to better position us within the immersive industry sector, enabling us to secure further work. Since the inception of our XR Stories project we have been approached by cultural organisations, science-technology companies and heritage groups and this has resulted in further funding and commissions.”

Human Studio

Case study

One to One Development Trust

One to One Development Trust is an award-winning arts organisation based in Wakefield. They specialise in using digital media to work with communities, organisations and partners to produce innovative, immersive projects. One to One has a strong track record of instigating, facilitating, and delivering successful projects including films, games, apps, websites, and interactive media.

“ We were delighted to receive funding from SIGN to create a video game aimed at entry level young people wanting to get into the screen industries. Working in collaboration with colleagues from the University of York and other partner universities has been really useful for our organisation’s development. The project has supported four paid internships, three with students from the University of York and a fourth being with a young person ‘not in education, training or employment’. This is the first time we have taken on interns and have found the experience very rewarding, particularly supporting the young person outside of the education system. This opportunity has been transformational for them and they have continued to work with us beyond the duration of the internship.

One to One Development Trust were also awarded funding from XR Stories to create an immersive heritage project using XR technologies. Being able to utilise the resources at the university, including the lab facilities was a great opportunity for us to explore some new technologies, using the space and resources for testing and meetings.

At One to One, we feel that partnerships between academics and the creative industries bring a wealth of shared knowledge and learning for all involved. We have had great support from the SIGN and XR Stories’ teams to help us refine our intellectual property. We have seen an increase in our organisation’s confidence and ambition since undertaking this work. The links we have made whilst working with SIGN and XR Stories, and attending events they have hosted, have increased our networks regionally and nationally. SIGN and XR Stories have made a significant difference to the region in supporting companies and freelancers, and we are really proud to have been part of that journey creating internationally award-winning XR and gaming experiences. ”



Key metrics

The economic growth of the screen industries of Yorkshire and the Humber

85%

of surveyed companies receiving support from XR Stories said that XR Stories was important to their business growth

XR Stories' activity has generated

£6.6m

of additional revenue for businesses engaging with this project across the region

XR Stories has contributed to

543

jobs being created or maintained for businesses in Yorkshire and Humber

SIGN has secured an additional

£6.8m

in co-investment into the region for work in skills, EDI or business support

The Office for National Statistics (ONS) report that the Yorkshire & Humber screen industries have seen a

14.5%

increase in business count,



18.2%

increase in employment,



and

22.5%

increase in turnover

between 2018 and 2023. The period of time that XR Stories and SIGN were largely active for.

Conclusion: Looking to the future

The creative sector continues to make a huge contribution to the economic, social and cultural life of Yorkshire and the Humber through the activity of our many vibrant businesses. Working closely with a wide range of partners in universities and industry, the University of York, through XR Stories and SIGN, has created new opportunities, new ideas, and new potential for business growth in this sector across the whole of the region, and by extension, the UK. This is underpinned by our core research, a growing evidence base on which firmer foundations for the future can be built, and a stronger ecosystem of partnerships between our regional industry and universities.

As a result of this activity we are ready, with a skilled and diverse workforce, to better represent and service the needs of future audiences, to tell new stories in fresh and innovative ways, to bring the benefits of technological advancement in the creative sector, and to further enhance the cultural, social and economic prosperity of our region.

The University of York's role at the heart of our creative sector will also continue through new projects and initiatives that have emerged from the work of XR Stories and SIGN. The XR Network+ project brings together five of the Creative Industries Cluster Projects, covering the four nations of the UK, and led by XR Stories.



Funded by The Engineering and Physical Sciences Research Council, the new initiative will deliver collaborative and industry relevant research to support the future of Virtual Production for the benefit of not just our creative industries but the whole of our country's digital economy. The AHRC funded CoSTAR infrastructure project will develop a new University of York led R&D facility co-located with Production Park near Wakefield, working together with Screen Yorkshire, Vodafone, Wakefield Metropolitan District Council and York and North Yorkshire Local Enterprise Partnership. This new facility is part of a network of five labs and projects that will support long-term technology and content development for the UK's future screen and live performance sectors – the success of XR Stories and SIGN has ensured our region's continued involvement as part of this headline Government investment into the creative industries.

Through these and other initiatives, the University of York will continue to use its world-leading research expertise to enhance and bring value to the creative sector in our region and beyond, fulfilling our primary objective as a university for the public good.

Emma Brown
Programme Manager, XR Stories and SIGN



Research outputs

Journal articles, book chapters, and conference proceedings

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Panels, presentations, and conference papers

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- [82] Jones, B. (2023) **'Here lies Dobby, a free elf (and all the socks that have been left for him): Balancing environmental sustainability and affective engagement in screen tourism locations'**, Royal Geographical Society (with IBG) Annual International Conference 2023. London, 29 August-1 September 2023.
- [83] Jones, B. (2023) **"Go past the wellies and on your left there are 8 stairs to the exhibition": Fan Tourism, Social Media and Transmedia Marketing'**, Society for Cinema and Media Studies conference. Denver, Colorado, 12-15 April 2023.
- [84] Swords, J. (2021) **'Exploitation, Exclusion and Discrimination in the Screen Industries'**, Inequalities in the Cultural and Creative Economies: An Emergent Research and Impact Agenda, University of York Research Impact Forum. Online, 25th November 2021.
- [85] Swords, J. (2022) Invited speaker at **'Creators Event'**. University of Huddersfield, Huddersfield, 27th October.
- [86] Swords, J. (2020) Invited speaker at **'Creative Informatics - Mapping Workshop'**. Universities of Edinburgh and Edinburgh Napier and Online, 10th June.
- [87] Swords, J. (2023) Invited speaker at **'Ethical Approaches to KE & Impact'**, Institute for Screen Industries Research Annual 'Challenges and Directions in Screen Industry Research' Symposium 2023. University of Nottingham, 14th June.
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We dedicate this report and documentation of our work and achievements to the memory of Ben Clark.

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