
# GROWING COMMS

## **G**rowing **R**egional **O**utputs **W**ith **I**nnovative **N**ext **G**eneration **C**ommunications

Project report – Phase 2

December 2020

## Contents

## Appendices



## Figures

*"The collaboration on this project between the Colleges and Higher Education has built up trust and respect in each other's knowledge and expertise. (…) It would be fantastic if we could keep this partnership and collaboration going for as long as possible."*

*Kate Pearce, Information and Learning Technology Lead, Gower College Swansea*

*"One of the big success of the project is collaboration. Kate, Geoff and myself meet almost weekly with Noémi to discuss the project and other current events."*

*Colin Bevan, Head of ILT, NPTG Group of Colleges*

*"We are a community and we need to find a way to keep working together."*

*Paul Holland, Head of the Learning and Teaching Enhancing Centre, College of Engineering, Swansea University*

## Growing Comms Management and Project Team

**Management:**

Paul Holland, Swansea University

Mark Jones, Gower College Swansea

Kelly Fountain, NPTC Group of Colleges

Barry Walters, Pembrokeshire College

**Project Team:**

Noémi Hilaireau, Swansea University

Kate Pearce, Gower College Swansea

Colin Bevan, NPTC Group of Colleges

Geoff Elliot, Pembrokeshire College

## Executive Summary

**Growing Comms is a successful partnership between Higher and Further Education. Thanks to a funding extension the project was able to support the partners in the change of teaching deliveries due to Covid-19 as well as to provide students with new formats of online activities.**

Growing Comms was initially funded by HEFCW in 2019 to enhance collaboration between HE and FE by exploring new ways of teaching and developing new spaces to encourage collaborative small group work. The partnership of four Welsh institutions – Swansea University, Gower College Swansea, Neath Port Talbot Group of Colleges and Pembrokeshire College – successfully designed and equipped such Collaborative Spaces, while building efficient cross institutional collaboration.

In the context of the Covid-19 pandemic, the project was extended until December 2020, the remaining funds were repurposed and additional funding obtained. This second phase had new objectives: to support the partners through the changes to teaching delivery required by social distancing, to supporting future and current students by offering a range of online activities and finally, to enhance business engagement.

This report explains how the partnership of four proceeded to achieve these objectives. Building on the six long term impacts from the first phase (chapter 1), five new impacts were identified (chapter 8).

**Impact 7: Growing Comms has built on the established collaboration between FE and HE and has contributed to advance teaching and collaboration practices through a Round Table.**
In the first phase of the project, successful collaboration between the four partners was achieved through efficient communication processes based on Microsoft Team. The second phase built on the existing collaboration with weekly project meetings and a Round Table (chapter 5.2), where lessons about hardware to support adapted delivery were captured.

**Impact 8: Growing Comms has contributed to training staff in the use of Microsoft Teams.**
Training was delivered to staff and students from Swansea University and partner institutions, both face to face and online. Training material for online delivery and a recording were made available to all partners.

**Impact 9: Growing Comms has enabled VR knowledge transfer from Swansea University to project partners and a local employer.**
The gap of skills related to VR (identified in chapter 4.2), became an opportunity to transfer skills from Swansea University VR Team to project partners and a local employer through an introductory course.

**Impact 10: Growing Comms has supported the four partners in the search, sourcing and trial of hardware for adapted teaching deliveries.**
Remaining funds were repurposed during the second phase of the project. Partners were able to purchase, trial and compare a variety of equipment to support online-based learning and teaching, which provided a solid rationale for further College-wide investments (chapter 5).

**Impact 11: Growing Comms has trialled new types of online events and contents and provided a rationale to continue using similar formats.**
Novel online events were trialled (chapter 6.4): online 360 laboratory inductions, a live 360 guided site visit of the Tata Steel Port Talbot plant and additions to the existing Swansea University virtual tour. The highly positive feedback brought forward the relevance of these new formats for the future.

## 1. Background

In a context of change in teaching practices, new approaches are being explored by many institutions in the United Kingdom. Swansea University, Gower College Swansea, Neath Port Talbot Group of Colleges and Pembrokeshire College came together as a partnership to submit the "Growing Regional Outputs With Innovative Next Generation Communications" (Growing Comms) grant application in response to the funding call titled "Enhancing HE-FE Collaboration in Innovation & Engagement Activity". The Growing Comms project was designed to use digitally enhanced learning spaces and modern software-based communication platforms to grow regional development by improved cross institutional collaborative working and new teaching approaches.

During the first phase, the partnership of four Welsh institutions proceeded to successfully create new linked Collaboration Spaces, to enhance regional communication and collaboration between institutions and the industry. Six long-term impacts were identified in the first project report[1].

**Impact 1: Growing Comms has enhanced collaboration between FE and HE.**
Growing Comms successfully built efficient communication processes between the four partners of the project. Microsoft Teams was used to assist in the cross institutional management of the project. The platform was used for collaboration, to share documents and information and regular project meetings were scheduled within it. Combined with few face-to-face meetings, this digital approach resulted in effective cross institutional collaboration.

**Impact 2: Growing Comms has equipped six Collaborative Spaces at four institutions.**
One of the main objectives of the project was achieved through the equipment of six Collaborative Spaces among the four partners. These spaces were carefully designed to suit the needs of each partner and allow for testing of a variety of new teaching approaches based on active learning.

**Impact 3: Growing Comms has enabled the use of MS Teams as Collaboration and Communication Platform (CCP) at four institutions.**
Growing Comms has enabled the comparison of different CCPs before choosing MS Teams, which has given a solid rationale for its use. MS Teams provides a wide range of features for the educational sector and is easily available to all partners, and to all Welsh Educational Institutions through the Hwb[2].

**Impact 4: Growing Comms has introduced the use of VR as a learning tool, provided headsets, and encouraged collaboration between the partners.**
Swansea University having its own VR team with extensive experience of the technology and its use in education, all partners agreed to include VR technology into the rooms. A case study in the first phase report shows how Growing Comms built on the availability of the technology to transfer knowledge and skills.

**Impact 5: Growing Comms' visits have encouraged students to consider entering HE.**
Student visits within the project offered the chance to FE students to discover what HE is about and what options are available to them. The activities offered to them on these visits were highly interactive and used

[1] The following is an arranged excerpt from the first project report, which can be accessed here: https://www.swansea.ac.uk/engineering/ltec/growing-comms/
[2] https://hwb.gov.wales/

up-and-coming teaching approaches. The impact of these visits was assessed through a survey and a majority of students said the visit made them consider applying to HE.

**Impact 6: Growing Comms has contributed to advance teaching and collaboration practices.**
Growing Comms has not only built on existing research and examples to equip and trial new Collaborative Spaces, to offer high-impact teaching experiences to FE students during visits and to create effective cross institutional collaboration, it has also shared its good practices and experience and has contributed to advance teaching and collaboration practices. Two articles were published online, a conference paper was written and the project was presented at three conferences.

The Growing Comms project was initially funded until June 2020, but its clear success and the efficient cross institutional collaboration underlined a need for a continuity. Even more so in times of sanitary crisis, effective online collaboration and communication has proven to be an absolute necessity where students and staff are not able to be present physically. This analysis motivated the application for further funding to deepen the FE/HE collaboration and support the partner through the Covid-19 crisis, which was granted by Swansea University's Civic Mission.

## 2. Objectives and targets

The extension of the first funding and the new grant from Swansea University's Civic Mission allowed Growing Comms to carry on its work until the end of December 2020. In response to the Covid-19 pandemic, the second phase focused on three main axes:

1. Supporting the partners through the changes to teaching delivery required by the social distancing measures,
2. Supporting the future and current students by offering a range of online activities related to the Future Skills Programme and
3. Enhancing business engagement

To this end, the project team arranged a range of activities including:

- Continuing professional development (CPD) for local HE/FE staff and businesses – Chapter 4
- Trial of equipment to support new ways of teaching driven by the Covid-19 crisis – Chapter 5
- Online activities for FE students to discover HE and learn about the skills sought for by employers; and online activities for current Swansea University students to substitute on-site activities – Chapter 6
- Technology transfer and innovation activities with local businesses – Chapter 7

# 3. Previous Collaboration Between Partners

*This chapter is an excerpt from "Growing Comms – Project Report Phase 1".*

The Growing Comms project is a partnership between HE and FE including Swansea University, Gower College Swansea, NPTC Group of Colleges and Pembrokeshire College. These four were already part of the College University Skills Partnership[3] (CUSP) and had a privileged relationship.

## 3.1. College University Skills Partnership (CUSP)

The College University Skills Partnership (CUSP) is a strategic partnership between Swansea University and Colleges of Further Education, including Pembrokeshire College, NPTC Group of Colleges, and Gower College Swansea, in Central and South West Wales. CUSP was established to enable HE/FE innovation and collaboration in the development of skills which meet employers' needs. This project has and will add value to this activity through the development of collaborative innovation and technology transfer activity.

CUSP has identified priority 'challenges' in the Central and South West Wales Region – our institutions are geographically distant, most employers in the region are SME and geographically dispersed, and the City Deal/Growth Deal will create new high-level skills needs which we must act collaboratively to meet. The CUSP Employers' Advisory Group meets regularly to inform CUSP partners about topical employer issues, to advise on new developments and to provide information about future skills needs.

This project has built on the excellent work of CUSP, the WVN and aligned it with the successful regional development work on innovation and engagement through research and technological transfer undertaken by the HEIs in Wales for many years.

## 3.2. Swansea University

Founded in 1920, Swansea University is a research-led institution with an excellent reputation for the quality of its student experience. The University carries out Innovation and Engagement activities leading to demonstrable outcomes, adding value to business, government, health and wellbeing, the environment, society, cultural life or other external organisations with significant national and international impact. Technology and knowledge transfer activities relate to commercial opportunities identified at Swansea University within an Open Access Open Innovation Framework, servicing a pipeline of some 300-400 commercial opportunities at various levels of Technology Readiness Levels (TRLs). For instance, this is achieved through the highly successful ASTUTE[4] operation, which widely collaborates in applied research and innovation with regional industries, mainly SMEs. In the University the College of Engineering is ranked #10 in research terms in the country. This world class expertise is brought into collaborative projects with companies driving innovation.

[3] Swansea University, "Welsh Government Minister launches key College University Skills Partnership," 19th June 2014, 2014 https://www.swansea.ac.uk/press-office/news-archive/2014/welshgovernmentministerlaunchesheycollegeuniversityskillspartnership.php
[4] www.astutewales.com

Swansea University has led the project, utilising existing expertise in project management and the use of technology for communications in the Welsh Video Network and Information Services and Systems. The University has also appointed a dedicated member of staff for the length of the project managed and mentored by senior College of Engineering staff to deliver the project.

### 3.3. Pembrokeshire College

Pembrokeshire College has 6 strategic goals between 2017 and 2020, one of which is "to engage with employers (….) to support economic development." Within this, Pembrokeshire College wishes to provide a comprehensive strategy of engagement with business and develop services that complement the core business. Pembrokeshire College has key employers in the region in the energy sector, which provides for the import of 20% of the UK's oil and gas sectors. In addition, from a diversification perspective, Pembrokeshire College are looking towards the development of food technology and processing, particularly within SMEs.

### 3.4. Gower College Swansea

Gower College Swansea provides Further Education and Higher Education including foundation degrees, HNCs, HNDs and professional qualifications. GCS Training is the College's business training arm, providing training for employers through off-the peg and bespoke programmes. The College manages Apprenticeships, Traineeships and Jobs Growth Wales and is the Lead for the Skills for Industry Project, part funded by the European Social Fund and the Welsh Government. Gower College Swansea has recently opened a bespoke Higher Education Centre at the Tycoch campus, specially designed for students on higher level courses.

### 3.5. NPTC Group of Colleges

Formed in 2013 when Neath Port Talbot College merged with Coleg Powys, NPTC Group of Colleges covers nearly a third of the land mass of Wales, so has a large reach for participation, reaching over 15,000 learners a year. One of the challenges addressed by this intervention is access to Innovation, Technology Transfer and Skills in rural areas of Wales. The NPTC Group offers an extremely wide range of full and part time vocational training, Work Based Learning, manages Adult Learning on behalf of Powys County Council and leads the Neath Port Talbot Adult Community Partnership. The NPTC Group of Colleges Business Development Unit works closely with large numbers of employers, many of whom are SMEs and Micro businesses. Many of these employers are keen to up skill their workforce in the latest technologies. Location has been identified as a barrier to learning with 12.5% of the population in SWMW region having no qualifications, increasing to 6.9% in rural Mid Wales.

### 3.6. Growing Comms Collaboration Agreement

For this project a specific collaboration agreement was written to ensure the project ran smoothly between the partners and covered the following areas: Project's organisation, Funding distribution, Confidentiality procedures, Intellectual property, Data protection, Termination, Limitation of liability, Notices, Force majeure

## 4. Continuous Professional Development

The quality of the collaboration and communication established through Growing Comms has driven the idea for Continuous Professional Development (CPD) training as part of the project. First, the choice of MS Teams as the main Collaboration and Communication Platform (CCP) for the project and its use in all partner institutions called for the availability of training. Secondly, to support the use of the Virtual Reality (VR) technology, an introductory course to develop VR content was offered to partners and other local HE/FE and businesses.

### 4.1. Microsoft Teams Training

All project partners have access to Office 365 and MS Teams as part of their current institutional offering. However, at the beginning of Growing Comms, there were differing levels of adoption of Teams across institutions. During the first phase of the project, NPTC Group of Colleges was advanced in the use of MS Teams having integrated it over a year before the start of the project. However, Gower College Swansea and Pembrokeshire College were only commencing, as were some departments at Swansea University.

The two successive Project Managers were Microsoft in Education Accredited Trainers[5] and delivered training to Gower College Swansea staff and Swansea University College of Engineering staff and students during the first phase.

The use of MS Teams spread even more during the second phase of the project, with the shift of teaching to a more blended approach driven by the measures taken in response to Covid-19. An online version of the training was developed and delivered synchronously to 31 Swansea University's staff and students during two live sessions. Recordings of these training sessions were made available to all partners as well as all the training material to support their needs.

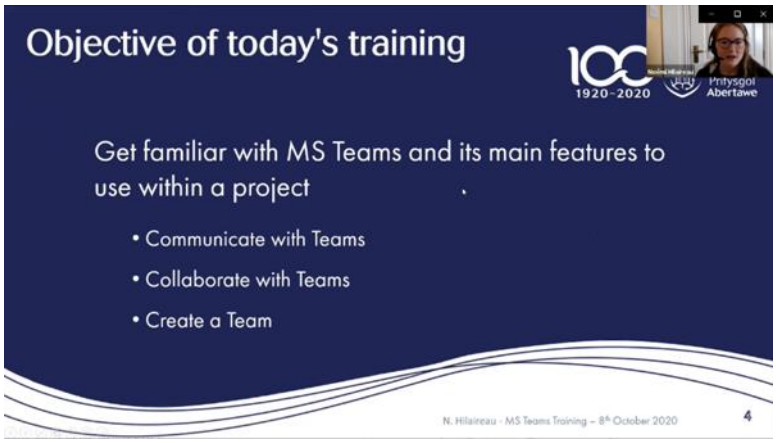



**Figure 1: Online MS Teams Training for Swansea University**

[5] https://support.office.com/en-gb/article/microsoft-teams-for-education-training-videos-and-resources-926063cd-f5ab-4ded-804c-71fcafce8fdc?ui=en-US&rs=en-US&ad=US

Overall feedback from staff and student was very positive, with their level of confidence in using MS Teams having improved thanks to the training. What attendees found particularly useful are features like scheduling meetings, chats, linking to other apps (e.g., Planner).

### 4.2. Virtual Reality Course

As part of Growing Comms, each partner was equipped with Oculus Quest[6] VR headsets to test VR educational apps and maybe in the future the "virtual classroom" – a virtual space where students from different colleges and universities could join and collaborate.

An observation was made that although Swansea University's College of Engineering had a dedicated team working on VR and developing educational apps and other useful content, this was not the case for all partners. This gap of skills was identified as a potential threat to the sustainability of the VR technology sourced through the project. To bridge this gap, Swansea University's VR team offered to deliver an introductory course to Unity[7] – a free game engine used to create content for VR headsets.

This 4-week training course (one 2-hour session per week) was provided free of charge. The objective was to introduce attendees to the use of the Unity software to develop basic apps like "memory palaces" which could be adapted to any subjects.

#### 4.2.1. Session 1

The first session of the course was offered to all partners and to the University of South Wales. The initial plan was for attendees to use their Collaborative Spaces to join once a week the online class with a video and audio feed. Trained facilitators were to be present at each location to solve technical issues for the group of attendees in their room. Unfortunately, due to unprecedented circumstances of the Covid-19 pandemic the training had to be adapted in order to run.

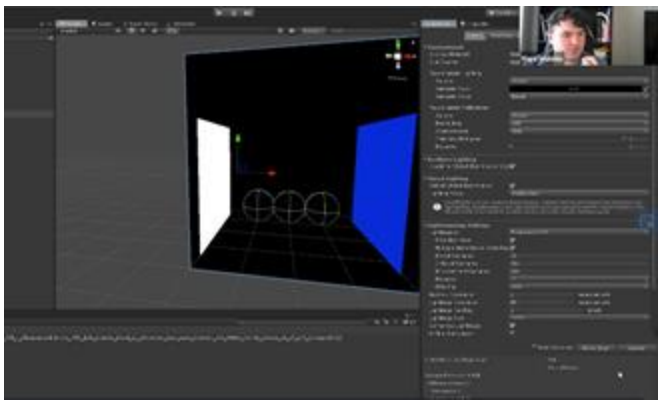


**Figure 2: View of the VR game engine Unity during online course**

Attendees with the right equipment at home were able to join the course once a week through a Zoom link. During the 2-hour session, the lecturer was able to deliver step-by-step instructions and help solve any issues attendees had. From one session to the next, attendees were asked to build content that was relevant to their subject area. Outside these sessions, course material, discussions and questions were shared on a dedicated MS Teams space where all attendees collaborated and shared their designs and creations.

[6] https://www.oculus.com/quest/
[7] https://unity.com/

Feedback from this trial course was positive although the circumstances made it more difficult to follow – having a facilitator at each location would have avoided losing time solving small issues live. Out of the initial 23 signed up, about 10 were able to follow the course from home (depending on the weeks). At the end of the planned 4-week course, the lecturer offered to continue for three extra weeks with a selection of more advanced themes chosen to meet attendees' needs. Five attendees welcomed the offer and continued the course to develop more advanced skills.

#### 4.2.2. Session 2

The second session was offered to all partners and local HE/FE and businesses. Nine attendees joined from Gower College Swansea, Pembrokeshire College, Cardiff and Vale College and Tata Steel.

This session was planned fully online, following the same format as the first one: a weekly 2-hour session over 4 weeks. The objectives and programme were the same but some of the tools were changed to ensure attendees could follow the course without specific equipment. This issue had been underlined in feedback after the first session.

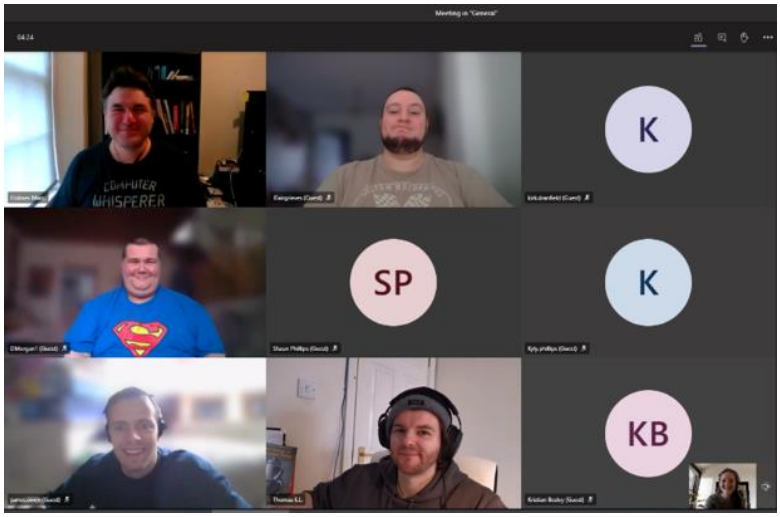



**Figure 3: Session 2 Week 4 videoconference**

Out of the 12 initially signed up, 9 were able to attend at least one live session and caught-up the remaining with the recordings. Feedback was once again highly positive, with attendees saying their expectations had been met. They also underlined the benefits of the training to create "an area to view new designs with customers" and the "potential to create training courses".

These two VR course sessions enabled 19 staff from local HE, FE and a company to improve their skills and create VR resources. Partners from the project now have the internal resources to start creating educational content to use with the headsets provided through the project. By opening these courses to other local HE, FE and companies, this support was also brought to institutions with similar needs and equipment.

# 5. Hardware for Adapted Delivery

## 5.1. Background

In the first phase of the project, six Collaborative Spaces[8] were equipped, at least one at each partner institution. The initial idea was to create spaces which would support new ways of teaching by enhancing collaboration and group work. Each room was equipped with hardware to enable videoconferencing and the possibility of being linked with other partners' rooms. Unfortunately, the completion of the rooms and the beginning of testing coincided with the beginning of the Covid-19 pandemic, which means it was not possible to use the rooms as they were meant to.

However, the efficient design and sourcing of the furniture and hardware for these rooms resulted in some of the budget available being unused. At that time, all partner institutions were reorienting learning and teaching activities from face-to-face to online, following the government guidelines. This new reliance on online-based learning evidenced the lack of hardware available to support it.

This analysis drove the idea of extending the project further with a new focus on supporting the partners through the Covid-19 crisis, taking advantage of the very successful collaboration established between our HE and FE institutions. The remaining funds initially allocated to the Collaborative Spaces were repurposed to purchase equipment to support online-based teaching deliveries – plural used here as each institution had their own teaching recommendations and methods.

## 5.2. Growing Comms Round Table

As described above, one of the objectives of the second phase of the project was to support the partners through the changes to teaching delivery required by the social distancing measures, and more particularly in issues related to hardware. To carry on this task, the following steps we taken:

i. Identification of the needs specific to each partner
   Partners being diverse in terms of size, curriculums and recommendations, the needs were varied and were to be explored separately
ii. Search of hardware
   Depending on the needs identified during step i, the search for equipment to trial started – based on existing available research, experience from colleagues and online reviews.
iii. Sourcing of hardware
   After identifying pieces of hardware which would suit the needs of each partner and would be interesting to trial, it had to be sourced. Procurement during the Covid-19 sanitary crisis presented an additional challenge, production and delivery being disturbed leading to stock unavailability.
iv. Trial and comparison of hardware
   Each partner tested a variety of pieces of hardware to determine which ones were the best suited to their needs and budget.

[8] For more details, please refer tot the first project report

v. Roll-out of preferred equipment
The trial of hardware, with feedback from lecturers and students, provided a solid rationale for senior management of each institution to invest more funds to provide their institutions with the selected pieces of equipment.

To build on the diversity of needs and situations where the equipment was trialled and used a Round Table was organised for staff from partner institutions, Jisc and HEFCW to share lessons learned. A total of 28 staff attended this event on the 1st December 2020, chaired by Alyson Nicholson (Head of Jisc Wales). The event consisted in four presentations (one per partner), Q&As and an open discussion. It was decided to only open this event to the four partners and the two main supports and funders of the project to allow for experiences to be shared with candour – not focusing only on the successes but also presenting the challenges and elements that could be improved.

The four following subchapters compile the elements presented by each partner, and the last one attempts to transcribe ideas and visions exchanged during Q&As and open discussion.

### 5.3. Gower College Swansea

The remaining budget for Gower College Swansea was repurposed towards experimenting with new pieces of hardware before looking for more funds to deploy the successful solution. The first step was to think about the areas and use cases which would benefit from this experimentation.

The main principle was not only to support teaching staff but also to find ways to make online teaching and learning more enjoyable and exciting to enhance student engagement. Although using MS Teams and teaching synchronously to students was the easy approach, most students call for more interactivity. Like most FE Colleges, Gower College Swansea has students with additional learning needs which means varied learning and physical conditions need to be considered when building curriculums. This search for equipment was also the opportunity for teaching staff to think of new pedagogic approaches and try them out.

Gower College Swansea purchased a variety of equipment through the project to be trialled (see Figure 4). This equipment was distributed to staff from all subject areas for trial.

The most popular pieces of hardware were the sport cameras, the digitising tablets and the ring light. The sport cameras were found to allow to teach practical classes with more detail than ever possible face to face (e.g., being able to show a specific part inside a vehicle using a camera instead of having students grouped around). The digitising tablets were very popular with all STEM staff as they enabled staff to engage with their students by going through complex calculations and formulae live as they would on a whiteboard. These trials enabled the project lead to build a case to purchase enough of these tablets for all staff teaching STEM subjects.

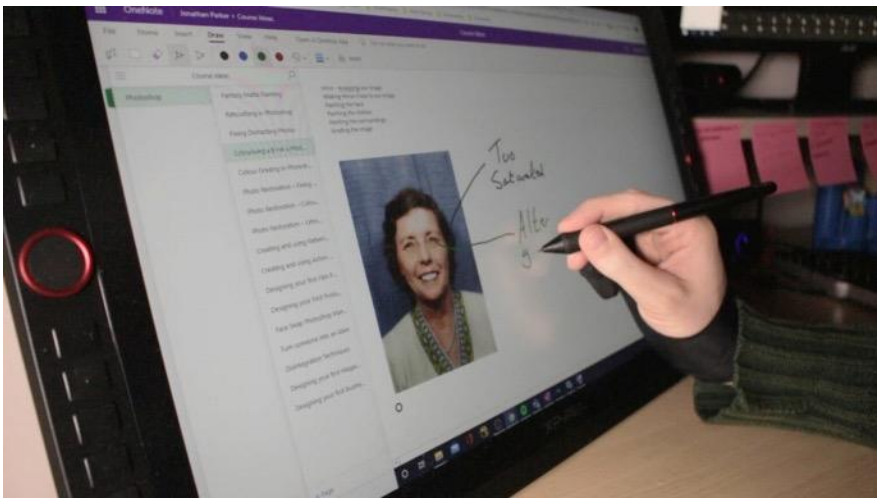
Pieces of equipment that will not be reordered are the creative tablets as they are too specialised. They allowed to teach how to use Photoshop at distance, and the number of units purchased through the project seems to be enough to support the activity.

| Equipment | Additional order placed |
|---|---|
| USB webcams with digital zoom | Yes |
| USB microphones | No |
| Tripods | No |
| Digitising tablets with a black surface (small and medium sizes) | Yes |
| Creative tablets (meant for graphic arts) | No |
| Camcorders | Yes |
| Document cameras/visualisers | Yes |
| Ring lights with boom stands | Yes |
| Sport cameras with accessories (chest and head mounts, sound units, etc.) | Yes |
| VR Headsets | No |

**Figure 4: Table of equipment purchased for Gower College Swansea**

Staff reaction was very positive, they were enthusiastic and immediately engaged in the trial of equipment. Everyone was very supportive and keen on trying new things. A dedicated MS Teams was set up for staff to ask questions, post their experience, share their content, ask for additional kit, etc. Because of the supportive atmosphere, trust was built within the group as well as confidence between colleagues.

Gower College Swansea's found the partnership within the project to be very productive in learning from HE as well as teaching HE. The outcomes of their trials were fed back to their senior management team and resulted in more money being invested in kit for the College. This has also fostered support across teams that would otherwise be quite disparate. Hopes for the future are more sharing, more dissemination about what each institution is doing and further partnership work.



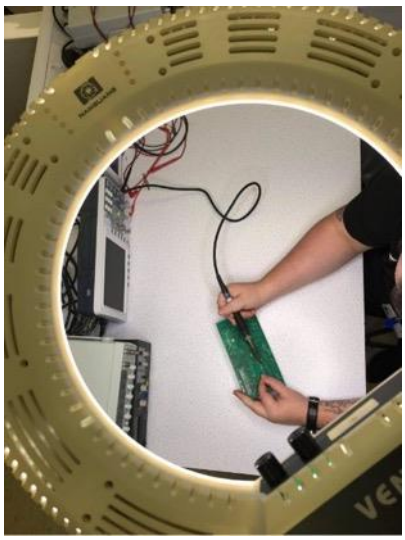


**Figure 5: Gower College Swansea using the creative tablet (left) and the ring light (right)**

| Case Study | |
|---|---|
| **Using a sports camera for an independent living skills class** |  <br>**Figure 6: Screenshot of Gower College Swansea's class about horses**<br><br>Gower College Swansea have an independent living skills department with about 160 learners with additional learning needs and varied abilities. A non-accredited curriculum was introduced this year but faced some difficulties due to Covid-19 as most activities involved being out and doing community work.<br><br>Thanks to the project, a sports camera was made available to the department to enhance the learning and teaching experience. As some students were interested in working with animals, a curriculum lead took advantage of the sports camera and of the firebreak lockdown to put together an employability class. The first lesson was based on a video showing students how to take care of horses. Building on the video, some drag and drop exercises were created and adapted to the abilities of each student.<br><br>This lesson was a great opportunity for staff to engage with the learners. The relevance for the learners is that the content was adapted to them (age, disabilities) and that they could see their own teachers, as opposed to the high number of available videos on YouTube starring unknown individuals.<br><br>The sports camera enabled the department not only to enhance the curriculum but to bring the curriculum to the learners in a more informal way. By creating such content, a bank of resources available is being built and will be available for the years to come. |

| Case Study | |
|---|---|
| **Using VR in an independent living skills class** | Virtual Reality (VR) was also used to support the community-based learning and the travel skills from the independent living skills curriculum. Pairing the VR headsets with Google Earth, learners were able to follow the bus routes that they would take from their homes and to navigate around.<br><br>This is a very good starting point for the learners and will probably stay as a first step in learning travel skills when Covid-19 restrictions are lifted. |

*"It's been stimulating for us as staff because it's opened up lots of opportunities. What we really realised is that our learners are tech-savvy and it's usually the staff that needs catching up (…) This has helped us catch up with them."*

*Liam Millinship, ILS Curriculum Lead, Gower College Swansea*

### 5.4. NPTC Group of Colleges

Most of NPTC's budget was used to design and equip two Collaborative Spaces which were about to be tested when the Covid-19 pandemic started. Focus of the project and of the College changed. NPTC's strategy related to Covid-19 regulations was to keep 2m social distancing inside the college and to ask staff to work from home where possible. This decision created new challenges: 335 laptops were issued out to staff and the curriculum was greatly affected as the rooms were too small to accommodate groups of students while following the guidelines.

There were three main possible options:

i. Splitting classes into small groups and deliver the same lecture several times
ii. Delivering all online
iii. Using a hybrid delivery model: bringing some students in and teach some students remotely at the same time

The first option meant the lecturers would have to repeat the same lecture several times, increasing dramatically teaching hours, which was not viable. A mix of the second and the third options was used across the College, depending on schools[9]. Figure 7 presents examples of approaches taken by different schools.

| School | Approach |
|---|---|
| Sixth Form Academy | **Hybrid**<br>with 50% of the students in the classroom while the remaining 50% are online |
| Vocational Curriculum Areas | **Mixture of Hybrid and online delivery**<br>Curriculum Heads were given guidance; 20% in the classroom (for practical work) while the remaining 80% are online (focusing on theory). The mix varies depending on the curriculum area and the level of the course. |

**Figure 7: NPTC's varied teaching approaches**

The hybrid approach is based on a similar pedagogy to the one used in the Collaborative Spaces created in the first phase of Growing Comms: a teacher is present on site and teaches to learners face to face and remotely. The main difference is that instead of linking rooms, this hybrid approach connects students' houses to the class.

[9] NPTC Group consists in 12 schools, each of them having their own management team.

However, this is not a 'one size fit all' approach. It needs to be tailored to the needs of the subject and the students. For example, to make the most of the time spent face to face with students, some lecturers adapted the tasks depending on students being present or remote. This meant focusing on practical work when students are in class and giving a different activity to the students online and switching during the following class. As there were no obligations, staff were free to adapt their approach as they saw fit.

Regarding support, NPTC had already started training a small group of teachers to use the Collaborative Space and were hoping to roll this training out to all teaching staff over time. Unfortunately, the Covid-19 pandemic accelerated drastically the shift towards this hybrid approach, leaving some staff to start using these new ways of teaching without having followed the training.

NPTC were planning on introducing BYOD (Bring Your Own Device) in September and this was reaffirmed with the Covid-19 guidelines, where it became necessary for each student to have their own device to engage with the curriculum and participate in the online curriculum. 'Have Your Own Device' was implemented across the whole group which was a risky and challenging but necessary approach given the main strategy. Welsh Government funding was used to support students who did not have the necessary equipment, providing them with laptops and Wi-Fi dongles.

*"This project has inspired staff to experiment with different technologies and teaching methods"*

*Phil Jones, Learning & Teaching Manager, NPTC Group of Colleges*

| Case Study | |
|---|---|
| **Influence of the teaching approach on PGCE students** | An interesting observation was made relating to PGCE students in their final year who studied their degree with these new pedagogies. Students who were taught in a hybrid way now teach in a similar hybrid way and it feels like a natural part of their teaching method. |

### 5.5. Pembrokeshire College

During the first phase of the project, instead of equipping one static room, Pembrokeshire College opted for a mobile solution which could be set up in any room. This solution proved to be more cost effective than equipping a dedicated room as no furniture was needed apart from trolleys for screens. This means that Pembrokeshire College started the second phase of the project with a good portion of their initial budget available, which was critical in supporting the College during the Covid-19 crisis.

As part of the Mobile Collaborative Space, Pembrokeshire College purchased a set of iPads during the first phase and had already started including them in teaching routines. Voluntary staff were asked to use them through the second part of 19/20 academic year after receiving CPD, to give feedback at the end of the year. This exercise demonstrated to the College that a device to provide feedback digitally is the way forward and drove the standardisation and purchase of similar but cheaper devices.

Virtual Reality equipment was also purchased during the first phase but was unfortunately delivered when the Covid-19 crisis sprung, making it impossible to use right away – and even today when some students are back in class, cleaning safely the VR headsets between students is an issue[10].

The delivery model at Pembrokeshire College for academic year 20/21 was as follow: learners attended classes physically only one day a week and the rest remotely and teachers worked from home except one day a week. All teaching staff needed to be comfortable and well equipped to deliver good quality classes. Therefore, each of them was equipped with a second screen, a good quality headset and a digitising tablet. The later were trialled through the project before going through a large-scale procurement process and proved to be a good way to replace the traditional whiteboards. Depending on the subjects, usually STEM or art-related, teachers also had access to visualisers.

**Figure 8: Work from home equipment at Pembrokeshire College (from left to right: second screen, headset, digitising tablet and visualiser)**

Classrooms were also equipped to support students who would be learning remotely 100% of the time, even when lessons were delivered in the classroom. The set up was basic but efficient: one USB speakerphone and one USB webcam mounted on a tripod (see Figure 9). The camera could be moved very easily around to show the teacher, the learners, or a specific object on the ground or on the wall. The video was streamed to the students along with the whiteboard (Pembrokeshire College is equipped with smart whiteboards), and the sound. This solution enabled the teacher to move around and write on the whiteboard as they usually would, without having to move the camera. Each faculty of the College was provided with this solution for them to deploy when needed (e.g., if a student needed to isolate).

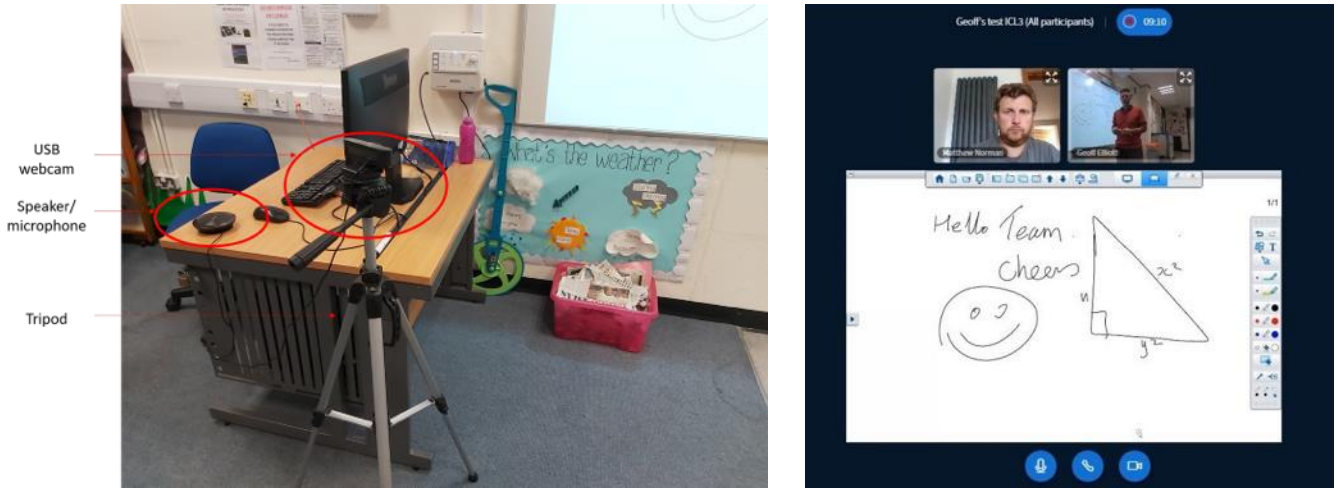



**Figure 9: Classroom configuration in Pembrokeshire College**

[10] Please refer to chapter 5.6 for more details on how Swansea University worked around this issue.

To enable practical work, another solution was trialled to free the lecturer's hands (see Figure 10): a ring light mounted on a boom with a sports camera attached to the centre. The footage captured was displayed live on a screen (which replaced the pull-down screen for better lighting). Mobile screens we also purchased for pluming and auto workshops. In the case where specific parts of a machine needed to be shown, the sports cameras were used in a mobile way. Both this static and mobile practical work approaches enabled the teachers to demonstrate precise activities without students gathering around.

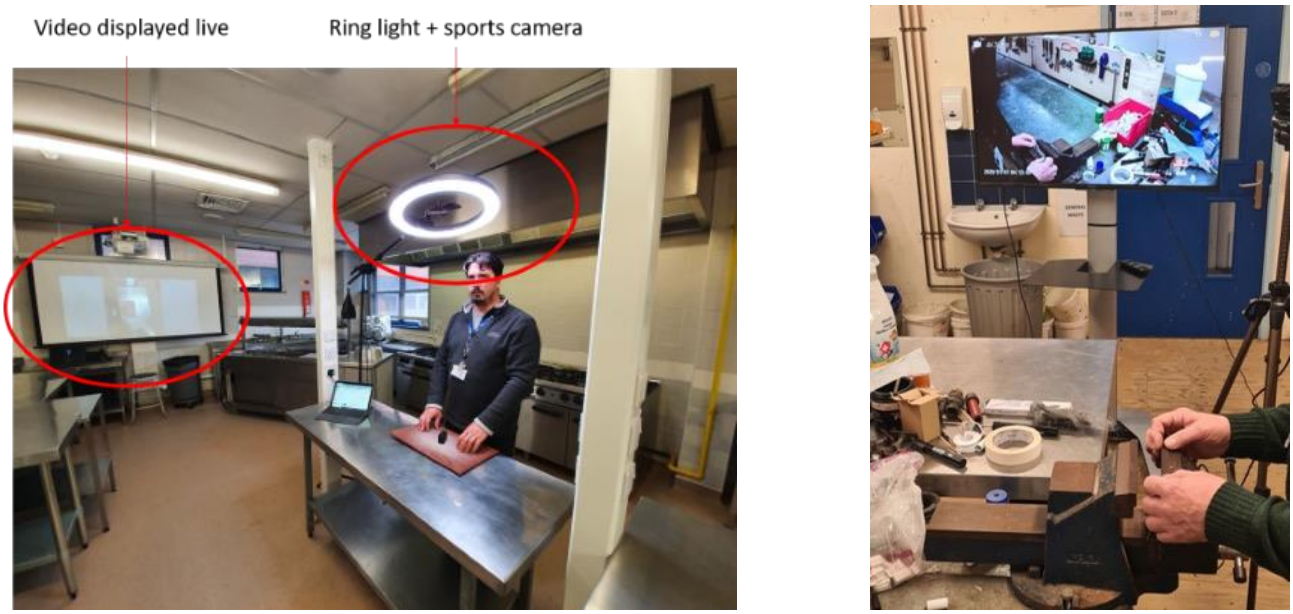



**Figure 10: Practical work solution for Pembrokeshire College**

| Case Study | |
|---|---|
| **Hosting a Masterclass with a renowned chef during Covid-19** |  **Figure 11: Tom Booton's masterclass at Pembrokeshire College during Covid-19 pandemic**<br><br>Thanks to the practical work solution installed in Pembrokeshire College's kitchen, Tom Booton (Head Chef of one of the Dorchester's restaurants[11]) was able to teach a masterclass virtually. Tom could see the class as a whole but also in more detail when the teacher moved around the class with the sports camera to show him precisely what students were doing. |

[11] https://www.dorchestercollection.com/en/moments/meet-tom-booton-head-chef-for-the-grill-at-the-dorchester/

The opportunity to trial such a wide variety of equipment was highly beneficial to Pembrokeshire College in finding the right solutions to support new ways of teaching. Testing equipment in real conditions before launching larger procurement processes has been a great way to support the sustainability of these new solutions as they have proved to meet the specific needs of the College.

### 5.6. Swansea University – College of Engineering

The College of Engineering's (CoE) first response to the Covid-19 sanitary crisis was to establish task groups to tackle different aspects of the changes to teaching and learning, while creating a community of practice. Six task groups were created:

i. Training requirements for online teaching

This group focused on identifying the training needs for online teaching, particularly to support staff and students through the virtual learning environment (VLE) transition, which happened at the same time as the sanitary crisis. Training was provided on the new VLE and on videoconferencing software (Zoom). Staff were also advised to take pedagogical training from the Open University 'Take Your Teaching Online', and a training was developed on 'How to teach online'.

ii. Hardware Requirements[12]

Recommended online learning and teaching formats Swansea University were:

- Pre-recorded lectures, examples, case studies for asynchronous learning
- Lectures / example classes / interactive sessions delivered synchronously

Most modules adopted a blended approach which combined asynchronous and synchronous learning.

To develop and deliver good quality learning resources, which was essential to student engagement, staff needed access to appropriate equipment (on campus or at home). A budget was found inside the College of Engineering and added to the remaining budget of Growing Comms to support the search, sourcing and trial of hardware.

This task group focused on hardware requirements and reviewed the sound and video capture resources available, staff experience and online reviews, presented minimum requirements and offered a list of resources meeting these requirements as recommendations for the senior management team. One principle was put forward and guided this task: "to ensure an equitable and inclusive learning experience that meets students' expectations and allows for a safe learning and working environment for students and staff."

First, sound requirements were defined, and in particular the need for a sufficient quality to keep the audience engaged. A bad sound quality has been found to have a negative impact on attendance, more so than video quality. The sound system also needs to enable different teaching styles, whether sitting at a desk or standing and moving around.

[12] This section is based on *Hardware and Software for online delivery of learning and teaching*, Dr Gavin Bunting (Associate Professor, Swansea University)

Secondly, the video system needs to cope with varying lighting levels (as one cannot control their lighting at home as well as on campus). The system also needs to enable the lecturer to look into the camera and at the same time see their slides or notes. The last interesting requirement is the possibility of multiple camera inputs which would allow the lecturer not only to show themselves speaking but also to show a specific document or object using a visualiser, a smartphone or a second webcam.

These requirements resulted in high level recommendations for all teaching staff as follow:

- A good quality desk microphone or a headset
- A webcam which can be mounted on a monitor (as opposed to using the laptop camera)
- A green screen which enables the creation on a 'talking head' to support accessibility
- A visualiser (a mobile phone or an iPad with a corresponding application could also be used)
- A digitising tablet to substitute the use of a whiteboard

**Figure 12: Work from home equipment at Swansea University**

iii. Weekly Training

A weekly hour of training was held online on the pedagogy of online teaching and practical matters (e.g., how to create a video). More than 100 staff attended at least one session of training.

iv. Buddy System

A buddy system was created: all teaching staff now have a buddy as temporary additional technical and emotional support for the 'Covid year'.

v. Teaching KPIs

The task group liaised with senior management on monitoring of teaching, with the objective of allowing staff to experiment new ways of delivery without the stress of the teaching KPIs.

vi. Student Training

Student and staff members from this task group supported the Academic Success Programme in creating resources and training for Swansea University students to study effectively online.

vii. Offsite IT provision

Because of the subjects studied within the College of Engineering, a set of specialist software is required in class and available to students on University computers in normal times. The purpose of this task group was to find a remote access solution for students to access these necessary softwares.

Before the Covid-19 pandemic, a Remote Desktop Protocol (RDP) was available to staff only in specific cases because of firewall issues. Students were able to use specific software only on campus computers and on shared laptops they could borrow. However, this last service usually had a long waiting list as demand was higher than the available laptops.

Lockdown started during exam period, where students are particularly required to use specific software. The first reaction was to try and enable the existing RDP system for a set of individual students, but it proved to be time consuming and very complicated because of firewall access and bandwidth issues. The laptop loan scheme ran out very quickly and extra equipment was purchased to try and respond to the digital poverty students were facing.

Then, a Cloud computing DaaS (Desktop as a Service) where students would be able to log into a remote computer was investigated but scalability and costs were difficult to assess as most of these services have a 'pay as you go' system and the usage forecast was uncertain.

Finally, an RDP manager was chosen with a virtualisation solution. This means students log in remotely onto University computers. Because of this, this solution was more cost effective, enabled all of the necessary software to run and provided a unified experience for remote and in person teaching. However, these advantages are balanced by the complexity of use, the number of steps needed to log in and lag time for students studying from overseas.

After a few months of use, feedback from students was mixed and it was found that most of them had decided to use (or buy) their own device instead, which contributes to building the gap between students who can afford to follow this route and those who cannot. The challenge is now to train students to use this RDP system to try and bridge this gap.

| **Case Study** | |
|---|---|
| **Teaching a VR MSc during Covid-19** | During the beginning of lockdown, VR classes were cancelled due to the VR lab being inaccessible. Remote VR solution were unfortunately not suitable because of latency issues linked to network capacities. This would also mean that each student would need access to a VR headset at home which was not viable.<br><br>After the first lockdown, a UV cleaning machine was purchased to enable in person teaching in the VR lab by cleaning VR headsets in a reliable manner.<br><br>To work around these access and latency issues, when the VR MSc[13] was launched in September, students were equipped with good quality laptops. This has contributed to bridging the gap between students, avoided compatibility issues and enabled the classes to run as planned. |

[13] https://www.swansea.ac.uk/postgraduate/taught/engineering/msc-virtual-reality/

### 5.7. Further observations

This section attempts to capture important and interesting ideas, elements of discussions and questions which were mentioned around the presentations. They are organised in form of paragraphs which can be read independently from one another.

**The trial of new equipment, new ways of teaching and the transition towards online-base teaching deliveries has had an impact on the way teachers/lecturers create content.**
This has been the opportunity to reflect on practice and change the way content and curriculums are created, driving a more informal approach. The current situation has forced fast changes which could have taken years to happen organically.

**Have the Collaborative Spaces created during the first phase of the Growing Comms project had an impact in terms of new pedagogy?**
In most cases the Collaborative Spaces have unfortunately been out of use as they are not compatible with social distancing measures. However, Gower College Swansea's room being a large space, it was used during the Covid-19 pandemic. Feedback was very positive as "it is now the most popular room in the College". This has proved that classrooms need to enable different types of pedagogy inside the same space and has provided a rationale to continue in that way. As a consequence, one ILS (Independent Living Skills) classroom is planned to be refitted.

**What is the feedback from students after the shift to online-based teaching and learning?**
At the date of the Round Table, very little student feedback was available. However, the main tendency seems to be that students have accepted this change by default as they understand it is the only solution available under the current circumstances. The challenge is probably "going to be next year, when we have a choice" in the way we deliver. Students may not be as understanding when circumstances ease.

**The transition to online-based learning and teaching is the opportunity to create an internal knowledge bank**
Independently from the specific pedagogy or method chosen, all online-based teaching and learning involve content creation, whether in the form of video and audio files or written content like exercises, case studies, quizzes etc. All of this content requires time and work to design, create and produce and needs to be captured for reuse in the future. Creating internal knowledge and content banks not only adds value to the time invested in the creation but also brings forward content that is relevant to the students because it has been tailored to their needs by their teacher/lecturer. A point which has been highlighted several times during this Round Table is that the quality of a video brings less value to students than seeing someone they know 'starring' in it.

Taking this idea one step forward would be to have students use the equipment supplied to the teaching staff to create their own content for other students.

# 6. Virtual Student Experiences

## 6.1. Background

During the first phase of Growing Comms, 930 Level 3 FE students benefited from visits organised to Welsh Universities or local Employers. Feedback from students was highly positive and as a result of these visits, a majority of students considered applying to HE[14]. This activity underlined how important it is for FE students to be in contact with Universities and Employers to discover what options are available to them and what skills are sought for in the region.

The unprecedented circumstances linked to the Covid-19 pandemic prevented most physical events from happening in academic year 20/21. These included partner FE students visiting local universities and employers, but also, HE students visiting local employers to prepare for the world of work.

To balance the lack of physical visit, during this second phase Growing Comms focused on offering access to similar online events, including 360 online visits of Swansea University and Tata Steel Port Talbot site, and online contacts with local employers. Also, asynchronous content was created and made available to students from the partner institutions.

## 6.2. Employer Talks

Each academic year, Swansea University Employability Teams arrange for employers to visit students in the University. These visits usually involve a presentation on graduate and placement opportunities within the company, and some time for the students to ask questions. Because of the Covid-19 pandemic, these Employer Talks were held online during academic year 20/21.

Taking advantage of this shift to online events, Growing Comms liaised with the Engineering and Science Employability Teams to open the most suited talks to local FE students. The objective was to offer FE students an opportunity to be in contact with employers, learn about their companies and the skills sought for.

During the first semester 20/21, six Employer Talks were opened to students from Gower College Swansea, NPTC Groups of Colleges, Pembrokeshire College, Bridgend College and Cardiff and Vale College. These talks have included presentations and discussions with Airbus, Spirax Sarco, Network Rail, GE Aviation and others.

In total, 34 students attended at least one talk. When signing up for an event, students were sent a quick research activity (refer to Appendix 1) to help them prepare the talk efficiently. This activity included tips on how to get reliable and relevant information about a company. To conclude the activity, students were

[14] Please refer to the first phase report (Chapter 7) for more detail on the visit survey and its results.

oriented towards an online quiz with a few questions about the company hosting the talk, including the correct answers. Students who completed the activity and filled the quiz found it very useful to prepare for the talk.

### 6.3. Taster Activities

In the first phase of the project, taster activities were organised for FE students during their visits to the University. One activity in particular was very popular with student: the 'Energy Demand' activity[15].

Students were able to experience two innovative teaching approaches:

- The Blended Learning[16] approach by watching an educational video explaining the main concepts needed for the lecture they followed on the day of the visit.
- Role-play[17] as a way of learning during the afternoon activity, where they had to work as part of a group before presenting and defending their work.

The material from this activity was made available on the Growing Comms webpage[18] to enable an online delivery. Staff from any institution can access this material which includes a detailed lesson plan (refer to Appendix 2), an educational video and a set of slides. By adjusting the lesson plan shared, this activity could very easily be adapted to other subjects, and even include students from different subject areas.

### 6.4. Content for New and Current Swansea University Students

#### 6.4.1. Videos for new Swansea University students

New Swansea University students this academic year 20/21 were welcomed with a mix of online and on-site activities, keeping in mind the latter were kept to a minimum. This means they were not always able to meet face-to-face and speak with returning students or student representatives who usually guide them through the basics of starting at the University, giving them tips on campus life and answering their questions.

To balance the lack of direct interactions with experienced students, or student representatives, Growing Comms partnered with the College of Engineering Academic Quality Team to create content for the new students' induction. This content was presented in the form of six videos on average 5 minutes long – the total length of content produced was 30 minutes. In each video, a student representative talks about a specific subject, addressing the newcomer directly. This form was chosen to give the impression of a face-to-face conversation and add a social component to the induction.

These videos addressed a range of subjects, from administrative and studies related questions to more fun topics related to student life and activities. More precisely, the titles are as follow:

[15] Please refer to the case study in chapter 7.1 from the first phase report for more details.
[16] D. Garrison, and H. Kanuka, "Blended learning: Uncovering its transformative potential in higher education," *The Internet and Higher Education*, vol. 7, pp. 95-105, 2004. (Online) Available at https://www-sciencedirect-com.libezproxy.open.ac.uk/science/article/pii/S1096751604000156
[17] G. McSharry, and S. Jones, "Role-play in science teaching and learning," *School Science Review*, vol 82, pp. 73-82, 2000.
[18] https://www.swansea.ac.uk/engineering/ltec/growing-comms/

- Advice and tips for remote learning: how to keep your motivation up
- What to do on your free time in Swansea
- General tips from a Rep
- Societies: why you should join
- Student Reps, who they are and how to get involved
- Most frequently asked questions

The videos were used during the online induction in September 2020 and made available on the University's VLE[19]. They will be used again for the January 2021 induction.

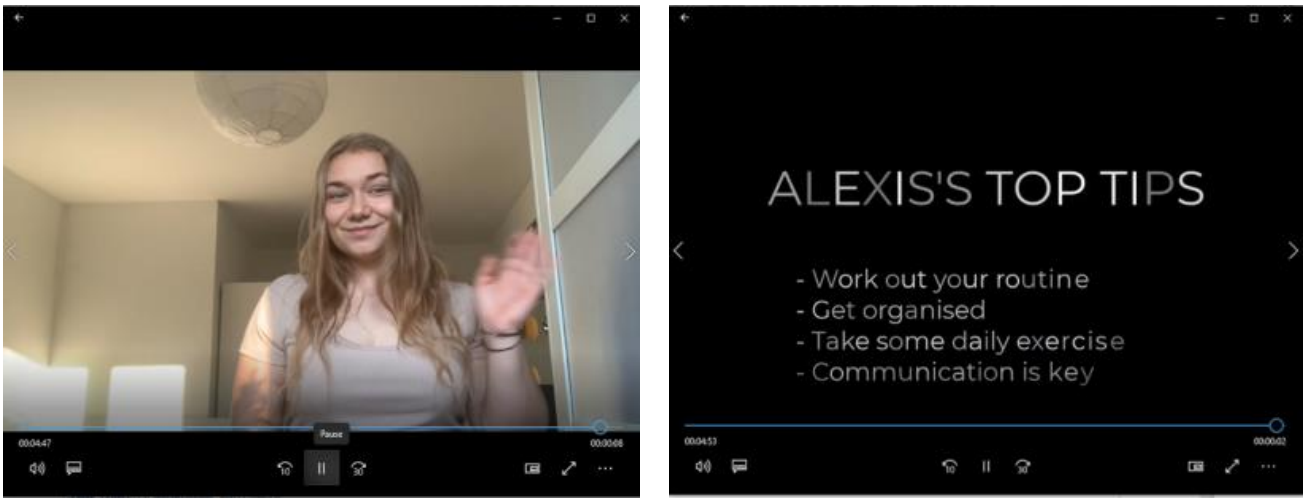



**Figure 13: Screenshots from the video "Advice and tips for remote learning"**

### 6.4.2. 360 Visits Content

In addition to the more classical online activities described in the paragraphs above, 360 visits were trialled as an innovative substitute for physical site visits. Specifically, three types of activities were trialled: laboratory inductions, online campus visits and industrial site visits.

To carry out the creation of the necessary content, a student enrolled in the Swansea University VR MSc[20] was employed.

**360 Laboratory Inductions**

During the first semester 20/21 even though online teaching was preferred, some of the practical work was maintained in smaller groups. A new module of practical work usually starts by an induction inside the laboratory to take the students (alternatively new staff) through the set of rules to follow, the equipment and the PPE[21]. To optimise the students' physical time on site, online inductions using 360 views of the laboratories were trialled (see Figure 13).

[19] Virtual Learning Environment
[20] https://www.swansea.ac.uk/postgraduate/taught/engineering/msc-virtual-reality/
[21] Personal Protective Equipment

Feedback was very positive, in particular from Kathryn Lacey, Senior Clean Lab Technician:

> *"These images have been very helpful. I handle the lab inductions for all new students and staff to our labs, which would normally consist of a 40 min presentation plus a lab tour to show them where to find safety kit, PPE, chemical storage, and many other things. I now carry out the inductions via zoom, but due to lab space limitations I can't do the lab tour which is the most vital bit. I have trialled the 360 images in the last two induction sessions through zoom and they've been incredibly helpful. I can move around and point out useful things our students need to know, so when they go in there, they can recognise things they have been shown and know where to find things."*

**Figure 14: 360 pictures taken inside one of the laboratories**

## Additions to the Swansea University Virtual Tour

To allow students and parents unable to come and visit the campus physically, Swansea University developed a Virtual Tour[22] available on the main website. This tour consists in a list of areas to explore, each composed of one 360 photosphere (see Figure 15). The user is only able to look around but not to move freely inside the room.

The choice of format can be easily explained by the amount of work required to create a Virtual Tour as comprehensive as possible of such a large campus, adding the difficulty of having two very distinct campuses. This static tour enabled the team to cover a large number of areas instead of focusing only on specific buildings.

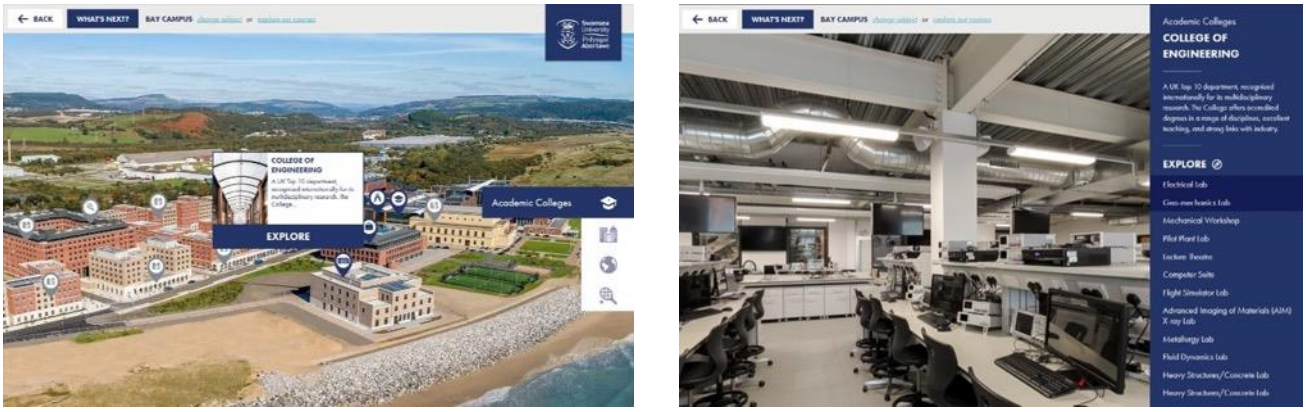



**Figure 15: Screenshots of the Swansea University Virtual Tour**

The new focus of Growing Comms being to offer similar activities to students to the ones held in academic year 19/20, finding a way to have FE students visit the University was a priority. The existing Virtual Tour offered a first experience but could benefit from additional views of rooms and laboratories. To that end, Growing Comms equipped Swansea University VR Team with a Mattercorp camera[23] enabling them to create 3D captures and visits of rooms, laboratories and buildings in an easier, more efficient and faster way.

The first laboratory scanned using the Matterport camera was the Electronic and Electrical Engineering laboratory[24]. As shown on Figure 16, this new technology enables the creation of a 3D model of the space scanned where the visitor can move freely and look around. This type of 3D visit is very similar to the experience of moving in Google Street View[25].

This first 3D scan received very positive feedback from Chris Jobling, Portfolio Director, Electronic and Electrical Engineering:

> *"We are justifiably proud of the Electronic and Electronic Engineering (EEE) teaching laboratory and are fully aware of the positive impact it has on visitors. So, we are very pleased to be able to share the 360 scan with applicants and students to enjoy before they arrive. It will definitely be a feature of our future recruitment activities and we will be*

[22] https://www.swansea.ac.uk/virtual-tour-stand-alone/
[23] https://matterport.com/cameras/pro2-3D-camera
[24] Access the tour here: https://my.matterport.com/show/?m=ZcEZpCdwpo3
[25] Example from Google Street View: https://goo.gl/maps/izo2zhtcFuyokpLK6

*sure to show our visitors around during virtual open days to come over the next few months. It will also be a very useful recruitment tool during clearing.*

*Of course, for our current students, the EEE teaching lab is the primary location for our teaching of practical electronics and we have been fortunate in being able to continue to provide access to our students during the current global pandemic. The 360 scan can be used to familiarise students with the workstations, prior to first use; to provide our technicians with an important tool for safety training, and to make students fully aware of the restrictions introduced for COVID safety before they arrive for their first lab session."*

David Moody, Head Technician also added:

*"The scan of the lab is a nice view of the lab and I like the freedom that people have to roam virtually anywhere too."*

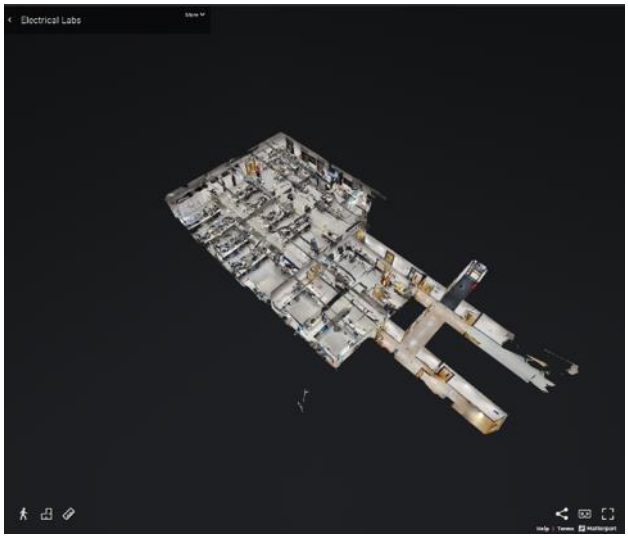




**Figure 16: View from the 3D scan of the EEE Lab**

Liaising with the Recruitment Team, further scans were arranged on campus later in academic year 20/21 with the objective to build on the existing Virtual Tour and offer an enhanced experience to future and existing students.

## 360 Visit of the Tata Steel Port Talbot Site

The objective here was to find an innovative substitute for physical site visits for students. In collaboration with Tata Steel, an online 360 live visit was trialled and recorded for asynchronous use.

The 360 live visit took place on the evening of the 10th December 2020 and attracted more than 60 attendees, including 40 students (from Swansea University, Gower College Swansea, Pembrokeshire College and NPTC Group of Colleges) and 21 staff (from Swansea University, Tata Steel, NPTC Group of Colleges and others). YouTube Live was the preferred platform to stream a 360 tour, with the possibility of defining a private link, the chat feature and no need of an account to attend.

Attendees were invited to sign up for the event a week before and were sent a private link on the day to access the live feed. During the experience, attendees were taken from one area to the next and had the opportunity

to 'look around' using their mouse with the 360 feature of the video stream. Areas showed included areas where access is usually prohibited to visitors due to safety concerns. Questions and comments could be posted in the live chat, which was monitored by the project manager.

The tour was guided vocally by the Head of Technical from Tata Steel Port Talbot, who also replied to questions along the way. A technical team formed by staff from Swansea University College of Engineering VR Team was in charge of streaming the footage to YouTube and following the areas which were being described. A Tata Steel UK Resourcing Manager was also present to reply to more recruitment-oriented questions.

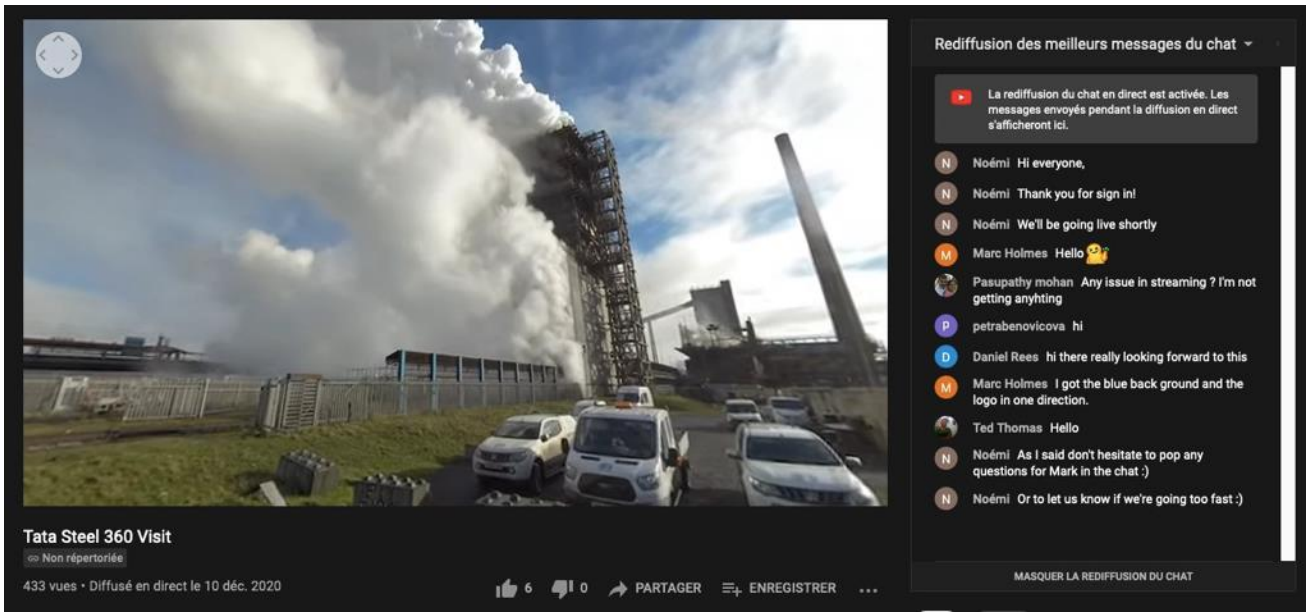



**Figure 17: Screenshot from the YouTube Live stream**

Feedback from the event was very positive, with a high level of satisfaction and attendees' expectations 100% met.[26] The 360 component and the expert guidance were the main elements of satisfaction, and all would attend a similar event (about a different site or company) in the future if the opportunity presented itself. Areas for improvement were also identified, like adding a pointer and a video from the guide and making access to the chat easier (YouTube requires a Google account to chat).

> *"Can I thank everyone concerned putting together yesterday's Tata Steel 360 Visit – WOW! In a previous life I was taken on by British Steel at the Welsh Technology Centre at Port Talbot and I was involved in projects on plant. It was fascinating to see the inside of 'the works' again after leaving British Steel over 20yrs ago.*
>
> *As well as the stunning 360 immersive visuals of the processes - especially the close up of processes in the hot mill, Mark and Ruth gave not only a first class description of the process but illustrated that the Steelworks has a career for all, no matter where you get off the education ladder."*
>
> *Staff, Swansea University*

[26] Numbers and quotes taken from the event exit survey

This event proved to be useful to students who “want to become a part of the team at Tata Steel”, staff from other organisations who “always wanted a tour of Tata” and have benefitted from a “real-time image of how the industry works”. Internal Tata Steel staff also signed up for this tour because they “haven't visited the heavy end, so [they] hoped to get an understanding of the process and environment that employees work with in that area.” From the tour they “take away a greater understanding of process and conditions [their] colleagues work with.”

The feedback generated by this event shows how beneficial this format can be to all types of audiences, whether students, internal or external staff. Focus could be different depending on audience and objectives ranging from a basic site visit, to a recruitment-oriented event or even induction visits for new company staff.

Finally, as deliverables for this collaboration with Tata Steel, the recording of the 360 live event was shared for asynchronous use.

## 7. Innovation and Engagement with Industry

One of the objectives of the project was to enhance collaboration with local businesses. This was achieved throughout most events organised during the second phase like CPD training and student online events. In particular:

- Local employers were invited to participate to the second session of the VR CPD course, as described in chapter 4.2.2. Tata Steel, in particular, took the opportunity to collaborate on this course by having staff attend. This course inspired them to consider creating "an area to view new designs with customers" as well as to identify the "potential to create training courses". Also, they "would recommend [this course] to [their] colleagues interested in VR."[27]

- Swansea University's Employability team partnered with companies (local and international) to offer 'Employer Talks' to students. As detailed in chapter 6.2, thanks to the Growing Comms project, six of these talks were opened to FE students.

- To trial a new type of content, meant to substitute physical site visits, a partnership with Tata Steel was formed to create a 360 tour of their Port Talbot site. Access to the site was granted to capture the footage which was then assembled into one 360 video suitable for online live events, similar to the one described in chapter 6.4.2.

- Among the attendees of the 360 tour of the Tata Steel Port Talbot (refer to chapter 6.4.2), staff from Tata Steel, Wall Colmonoy, Innovate UK, and the Knowledge Transfer Network were present.

As detailed above, this second phase of the Growing Comms project successfully collaborated with a variety of companies through different types of events. This shows the potential for collaboration in the future to continue building similar online events in response to such sanitary circumstances.

[27] Quotes from a Tata Steel staff taken from the course exit survey

## 8. Impact

Growing Comms is an innovative and successful project and has been impactful in many ways, whether on cross institutional collaboration or teaching and collaboration practices. The first phase report detailed six main impacts (summarised in chapter 1 of this report) and this chapter adds five additional impacts of the project built during the second phase.

**Impact 7: Growing Comms has built on the established collaboration between FE and HE and has contributed to advance teaching and collaboration practices through a Round Table.**
In the first phase of the project, successful collaboration between the four partners was achieved through efficient communication processes based on Microsoft Team. The second phase built on the existing collaboration with weekly project meetings to share information and experiences about each institution's response to Covid-19. This successful collaboration is also evidenced by the Growing Comms Round Table (chapter 5.2), where lessons about hardware to support adapted delivery were captured.

**Impact 8: Growing Comms has contributed to training staff in the use of Microsoft Teams.**
During both phases of the project, Growing Comms successive project managers have delivered training to staff and students from Swansea University and partner institutions, both face to face and online. Training material for online delivery was developed and a session was recorded and made available to all partners to support their training needs.

**Impact 9: Growing Comms has enabled VR knowledge transfer from Swansea University to project partners and a local employer.**
As part of the first phase of the project, Growing Comms introduced VR as a learning tool and provided headsets. However, as explained in chapter 4.2, a gap of skills between Swansea University and the partners was identified and considered as a potential threat to the sustainability of the technology. This became an opportunity to transfer skills from Swansea University College of Engineering VR Team to project partners and a local employer through an introductory VR course. The course successfully enabled attendees to create their own basic VR content for educational or design purposes.

**Impact 10: Growing Comms has supported the four partners in the search, sourcing and trial of hardware for adapted teaching deliveries.**
Remaining funds initially allocated to the Collaborative Spaces were repurposed during the second phase of the project thanks to HEFCW in order to purchase equipment to support online-based teaching deliveries. Through the project, partners were able to purchase, trial and compare a variety of equipment, which provided a solid rationale for further investment to deploy the preferred hardware organisation-wide (please refer to chapter 5 for additional details).

**Impact 11: Growing Comms has trialled new types of online events and contents and provided a rationale to continue using similar formats.**
During the second phase of the project, novel online events were trialled: online 360 laboratory inductions and a live 360 guided site visit of the Tata Steel Port Talbot plant. Also, additions to the existing Swansea University virtual tour were made using a 3D camera which included a brand new perspective to the visit. All these events resulted in very positive feedback (please refer to chapter 6.4) and brought forward the relevance of these new formats for the future.

## 9. Conclusion

In times of pandemic, the need for effective online collaboration and communication becomes clear. The second phase of the Growing Comms project has contributed to meeting this need through a wide range of experimental activities, building on the existing trust between the four partners.

This successful project has once again achieved the set objectives defined in chapter 2:

1. Supporting the partners through the changes to teaching delivery required by the social distancing measures
   Thanks to the remaining funds from the first phase and additional funding, partners were able to purchase small amounts of different equipment to trial and compare before launching wider procurement processes.

   *"Without the money to experiment and 'play' it would have been hard for all of us to make a case within each of our institutions, and for them [senior management] to make a significant investment in some of this kit. This has been incredibly important, and it has had a huge impact on our learners in the quality of delivery since Covid began."*

   *Kate Pearce, Information and Learning Technology Lead,*
   *Gower College Swansea*

2. Supporting the future and current students by offering a range of online activities related to the Future Skills Programme
   With the aim to balance the lack of physical and face-to-face activities during the Covid pandemic, Growing Comms has experimented with different formats of online activities like 'Employer Talks', online 360 laboratory inductions, an online 360 live tour of Tata Steel Port Talbot site and more. The fantastic feedback on these events show this is the right way to move forward.

3. Enhancing business engagement
   Local and international businesses were involved in most activities carried out during this second phase of the project, like student online activities or staff CPD training.

Growing Comms has proved that collaboration between FE and HE is beneficial, fruitful and needs to be encouraged and supported. This partnership has tested novel ways to integrate new equipment, technologies and methods in learning and teaching activities and many other ideas were raised and should be explored. Amongst others, sharing the work done around virtual reality (including partners and local companies involved), its impact on teaching material creation and the potential of the 3D scans and models mentioned in chapter 6.4.2 could be an easy next step.

*For more information about this report, please contact:*
*Prof Paul Holland, p.m.holland@swansea.ac.uk*
*Ms Noémi Hilaireau, n.c.hilaireau@swansea.ac.uk*