



# GROWING COMMS

## Growing Regional Outputs With Innovative Next Generation Communications

Project report for dissemination

June 2020

## Contents

Figures .....	2
Foreword .....	3
Growing Comms Management and Project Team .....	4
1. Executive Summary .....	5
2. Background .....	7
3. Objectives and targets .....	9
4. Previous Collaboration Between Partners .....	10
4.1. College University Skills Partnership (CUSP) .....	10
4.2. Swansea University .....	10
4.3. Pembrokeshire College .....	11
4.4. Gower College Swansea .....	11
4.5. NPTC Group of Colleges .....	11
4.6. Growing Comms Collaboration Agreement .....	11
5. Collaboration and Communication Platforms .....	13
5.1. Background .....	13
5.2. What are Collaboration and Communication Platforms (CCPs)? .....	13
5.3. Required and desired features .....	13
5.4. Collaboration and communication tools comparison and choice .....	14
6. Collaborative Spaces .....	16
6.1. General proceedings .....	16
6.2. Gower College Swansea – Room C10 .....	16
6.3. Swansea University – Room B014 .....	17
6.4. NPTC Group of Colleges – Neath and Newtown Campuses .....	18
6.5. Pembrokeshire College – Mobile Room .....	19
7. Student Visits .....	21
7.1. Total Numbers .....	21
7.2. The Survey .....	23
7.3. Survey Results .....	23
8. Innovation and Engagement with Industry .....	25
9. Impact .....	27
10. Conclusion .....	30

## Figures

Figure 1: Steps in the Design Thinking Process. <a href="https://dschool.stanford.edu/resources">dschool.stanford.edu/resources</a> .....	14
Figure 2: Gower College Swansea Room C10.....	17
Figure 3: Swansea University Room B014 .....	18
Figure 4: NPTC Group Newtown Room .....	18
Figure 5: NPTC Group Neath room.....	19
Figure 6: Distribution of student by types of visits.....	21
Figure 7: Students working on the Engineering challenge .....	22
Figure 8: Evaluation of visit impact on student's application choices.....	24
Figure 9: HoloMeeting Trial.....	25
Figure 10: Students using a Clevertouch board at Gower College Swansea.....	26

## Foreword

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Having formerly worked at Swansea University and Neath Port Talbot College, and, through my role at Jisc, enjoying a close working relationship with all the project partners, I was delighted to be involved in the initial stages of the Growing Comms project and am equally excited by its achievements and lasting potential.

Thinking back to those early days of requirements gathering and developing the project specifications, it was obvious how all those involved quickly bonded around a shared vision and the associated challenges – a key ingredient to a successful project.

Utilising technology in education is no longer an option. Digital technology features in our work, home, study and social lives. Digital fluency is an essential pre-requisite for employers and, as recognised by Welsh Government and HEFCW, is a staple for a healthy economy, particularly as we move into the fourth industrial revolution.

Growing Comms embraces Education 4.0, realising the potential of digital technology to enhance education, providing learners with broader skills for success, exploring opportunities as well as experiencing active and immersive learning which are just some reasons why I find this project so exciting.

Growing Comms recognises digital technology as an enabler to collaboration, removing boundaries so that students can work together within and between organisations, across sectors and even across nations. Access to experts and employers, wherever they are, becomes increasingly possible, bringing relevance, currency and inspiration into the learning environment. In addition, active learning and collaboration not only support deep learning and positive retention but also challenges students' expertise and critical thinking – essential skills for success.

The Growing Comms project has provided motivation, inspiration and opportunity to students and staff, and provides an excellent foundation from which to develop the next generation of young people in Wales.

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My congratulations to all involved.

**Alyson Nicholson**  
Head of Jisc Wales



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## **Growing Comms Management and Project Team**

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## 1. Executive Summary

**Growing Comms is a successful partnership between Higher and Further Education. The project equipped the four partners with digitally enhanced Collaborative Spaces to help develop new teaching approaches and enhance regional cross-institutional collaboration.**

In a context of change in teaching practices, new approaches are being explored by many institutions in the United Kingdom. While most of these approaches can be used in lecture theatres, they would benefit from dedicated spaces developed specifically to encourage collaborative small group work.

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.

This report explains how 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 have been identified and are detailed in Chapter 9.

### **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. As explained in Chapter 5.4, 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 (see Chapter 6). These spaces have been 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 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 that are compatible and sometimes

made for the educational sector, and is easily available to all partners, and to all Welsh Educational Institutions through the Hwb<sup>1</sup>. Even though each partner is implementing this new platform at its own pace, the global tendency moves towards deployment of the platform to all staff and students.

**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. The case study in Chapter 9 shows how Growing Comms built on the availability of the technology to transfer knowledge and skills from Swansea University's VR team to the partners.

**Impact 5: Growing Comms' visits have encouraged students to consider entering HE.**

Student visits within the project have offered the chance to FE students to discover what HE is all about and what options are available to them. The activities offered to them on these visits were highly interactive and used up-and-coming teaching approaches (refer to case study in Chapter 7.1). The impact of these visits was assessed through a survey and a majority of students said the visit made them consider applying to HE (see Chapter 7.3 for more details).

**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.

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<sup>1</sup> <https://hwb.gov.wales/>



## 2. Background

Many Higher Education Institutes (HEIs) in the United Kingdom have been exploring changes in their pedagogical approach. The traditional teaching delivery mode of lectures is being challenged with academic staff trying new approaches. This change in teaching practices can be explained by the motivation of teachers to enable deeper learning and develop key skills in their students. Although changes in teaching practices usually occur organically and incrementally over relatively long periods, external factors in the UK and other countries have impacted the pace of change to active learning approaches and by extension to learning spaces. Increased competition between institutions due to marketisation<sup>2</sup> stimulate moves to improve teaching quality, enhance student experience and solve the challenges associated with rapid advances in digital technologies<sup>3</sup>.

Resulting from this fast-moving background, teaching staff are increasingly being asked to use different types of learning spaces requiring different delivery approaches. To promote this change, it is essential to provide evidence of the benefits of using active learning approaches, of the need for development of new types of learning spaces, training in how they can be used for both staff and students, and case studies of different use cases.

The movement to create active learning studios (ALSs) is not new but has developed since the 1990s. The first ALSs appeared then, with small groups of students collaborating around group tables in digitally enhanced rooms. Examples of these first rooms can be seen at Rensselaer Polytechnic Institute, the SCALE-UP project at North Carolina State University as well as the Technology-Enhanced Active Learning project at the Massachusetts Institute of Technology (MIT)<sup>4</sup>. At the same time, a theory supporting small group collaborative and active learning approaches pushed towards a more student-centred approach as described in King's 'Sage on the Stage to Guide on the Side' in 1993<sup>5</sup>. While active learning approaches may be used in lecture theatres, dedicated active learning spaces are required for the most effective forms that require collaborative small group work.

Swansea University has been experiencing changes in its pedagogical approaches of its own. Starting with the organic growth of blended learning – “a combination of face-to-face learning and dynamic digital activities and content that facilitate anytime/anyplace learning”, JISC (2017) followed by a Blended Learning Pilot (August 2017 to March 2019), where a pedagogic framework was developed and staff trained in order to further develop this approach.

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<sup>2</sup> R. Sullivan-Jones, "How the UK HE sector functions as a market, and why it warrants analysis," *Times Higher Education*, Times Higher Education, 2017.

<sup>3</sup> T. B. Newman, Helen, and S. Knight, "Digital experience insights survey 2018: findings from students in UK further and higher education," Jisc, 2018.

<sup>4</sup> R. J. Beichner, "History and Evolution of Active Learning Spaces," *New Directions for Teaching and Learning*, vol. 2014, no. 137, pp. 9-16, 2014.

<sup>5</sup> A. King, "From Sage on the Stage to Guide on the Side," *College Teaching*, vol. 41, no. 1, pp. 30-35, 1993.



A visit to Texas A&M University and more specifically of the Zachry Engineering Education Complex (ZEEC) building<sup>6</sup> heavily influenced staff in the College of Engineering. Staff from the Learning and Teaching Enhancement Centre (LTEC) with help from the Swansea Academy of Learning and Teaching (SALT) and senior management sponsorship were able to arrange for a pop-up ALS called the 'Sticky Campus Roadshow'<sup>7</sup> to visit Swansea University. This roadshow generated enough interest, knowledge and positive feedback from academic staff, students, and professional services staff to look for opportunities to establish permanent ALSs.

A first ALS, room A019, was equipped during the summer of 2018 using a reconfigurable design with foldable PCs located on synergy tables that seat six people with a collaborative screen at the end of each table where students can share content from any device. Following this successful implementation, an opportunity to combine the knowledge gained with staff confidence and know-how came with the funding call titled "Enhancing HE-FE Collaboration in Innovation & Engagement Activity". Swansea University, Gower College Swansea, Neath Port Talbot Group of Colleges and Pembrokeshire College came together as a partnership to successfully submit the "Growing Regional Outputs With Innovative Next Generation Communications" (Growing Comms) grant application.

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<sup>6</sup> <https://zachry.tamu.edu/>

<sup>7</sup> <https://www.jisc.ac.uk/rd/projects/sticky-campus-roadshow>

### 3. Objectives and targets

The project proposal was written by Judith James in Swansea University's strategic projects group, Professor Hans Sienz and Professor Paul Holland both from the College of Engineering. This was accomplished in partnership and agreement with the FE partners through regular meetings. The proposal was finalised on two main themes: to use digitally enhanced learning spaces and modern software-based communication platforms to grow regional development by improved collaborative working and to increase student awareness of FE and HE education options.

In detail, the objectives of the project were to:

1. Drive innovation and outputs in the region beyond the funding
2. Be a pilot that develops a framework for innovative & collaborative working practices scalable across all of Wales
3. Build on the physical infrastructure, knowledge and skills of the Welsh Video Network transforming it from a meetings and teaching platform to a next generation collaborative working environment, negating the need for time intensive and environmentally damaging travel.
4. Enable key principles of recent legislation including the Well Being of Future Generations (Wales) Act; "work better together", "well skilled and well educated" and "involve people reflecting the diversity of our communities". It aligns these policy principles to other large regional investments such as the Swansea Bay City Deal and the Mid Wales Growth Deal through smarter working and investment in the on-going day-to-day activities of our industry facing FE/HE institutions.

These objectives were achieved through the following targets:

- Collaboration and Communication Platforms (CCP): establish the required and desired features of the CCP, procure and install the system
- Collaborative Spaces: establish the required and desired features of the digitally enhanced Collaborative Spaces, identify rooms in each FEC and University, design the space, procure and install the equipment and furniture
- Student visits:
  - Promote higher education to Level 3 students from all partner FECs by organising visits to Welsh Universities (physical and virtual)
  - Share options for future learning with Level 2 students from all partner FECs using the Collaborative Spaces
- Innovation and Engagement with Industry:
  - Trial use of the new Collaborative Spaces and CCP with selected companies and all partners
  - Share knowledge from the project with regional companies

## 4. Previous Collaboration Between Partners

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<sup>8</sup> (CUSP) and had a privileged relationship.

### 4.1. 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.

### 4.2. 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<sup>9</sup> 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.

<sup>8</sup> Swansea University, "Welsh Government Minister launches key College University Skills Partnership," 19<sup>th</sup> June 2014, 2014 <https://www.swansea.ac.uk/press-office/news-archive/2014/welshgovernmentministerlauncheskeycollegeuniversityskillspartnership.php>

<sup>9</sup> [www.astutewales.com](http://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.

#### **4.3. 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.

#### **4.4. 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.

#### **4.5. 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.

#### **4.6. 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:

- 
1. Project's organisation
  2. Funding distribution
  3. Confidentiality procedures
  4. Intellectual property
  5. Data protection and freedom of information
  6. Termination
  7. Limitation of liability
  8. Notices
  9. Force majeure

## 5. Collaboration and Communication Platforms

### 5.1. Background

Established in 2000, the Welsh Video Network<sup>10</sup> (WVN) is a massively utilised service that was designed with a focus on Learning and Teaching activity to connect public sector organisations via video conferencing studios across Wales. Between June 2016 – 2017 WVN facilitated 11,682 videoconference connections with a peak of 186 concurrent calls running on the network. However, central funding for the WVN stopped in 2012 and since then there has been a step-change in hardware and software technologies to significantly enhance collaborative working.

One of the objectives of this project was to enable next generation technologies to be evaluated in supporting innovation and engagement activities, building on the existing WVN infrastructure and skills and knowledge of its staff.

### 5.2. What are Collaboration and Communication Platforms (CCPs)?

Collaboration and Communication Platforms (CCPs) – also referred to as Team Communication Platforms – are a new “class of software designed to support the increasingly collaborative nature of 21st-century business communication”<sup>11</sup>. These platforms can be described as messaging services that enable collaborative discussions which can be organized into groups and channels. Additionally, they integrate a variety of media tools ranging from instant chat messaging (individual or group) to media sharing. CCPs also support the integration of third-party apps and technologies, widening their possibilities.

### 5.3. Required and desired features

As mentioned previously one of the objectives of this project was to enable next generation technologies to be evaluated in supporting innovation and engagement activities. The first step in choosing such a next generation collaborative communication tool was to define precisely what the needs of the partners and their requirements were. To that end, representatives from management, innovation, IT and AV from each partner institution met to for a “Requirements Gathering Day” at Swansea University. The target of that day was to list the requirements to use as a base to start the procurement process. During this meeting, representatives from Jisc facilitated a creativity workshop using a process adapted from the Design Thinking method (see Figure 1).

The main needs identified on that day are as follows:

- **Bring Your Own Device (BYOD).** The tool needs to be usable on a variety of devices like laptops (PC, Mac), tablets, smartphones (Android and iOS).

<sup>10</sup> <http://www.wvn.ac.uk/en>

<sup>11</sup> A. Anders, "Team Communication Platforms and Emergent Social Collaboration Practices," *International Journal of Business Communication*, vol. 53, no. 2, pp. 224–261, 2016.

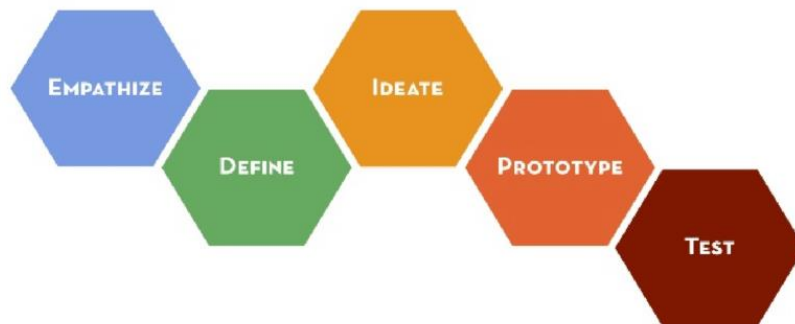


Figure 1: Steps in the Design Thinking Process. [dschool.stanford.edu/resources](https://dschool.stanford.edu/resources)

- **Ease of access.** It is important to keep in mind that this tool will be used by a variety of staff and students who do not have the same level of technological knowledge. It needs to be easy to use and user-friendly to ensure adoption.
- **Interoperability between organisations.** This need stems from the analysis that FECs, Universities and employers have different operating systems, different systems for email, videoconferencing, etc. In order for the CCP to be widely adopted and used within the partnership of this project, it needs to be compatible with this variety of systems.
- **Accessibility.** Evidently the tool needs to be accessible to as many staff and students as possible and therefore needs to be compatible with most assistive technologies.
- **Cloud solution.** When using a wide range of devices and sharing documents across them, a cloud solution is key and enables the user to see live changes, even multi-user editing in some cases. A tool based on a cloud solution would allow all user to access content easily and without delays.
- **Security.** All information shared via this tool needs to be protected in line with the data safety policies of all partners and national regulations like the GDPR.
- **Office 365 interoperability.** This last requirement is based on the observation that all partners have and Office 365 license for their staff and students. Therefore, interoperability with Office 365 would be a plus.

These general needs were broken down into more precise requirements and features.

#### 5.4. Collaboration and communication tools comparison and choice

Considering the needs defined in chapter 5.3. and the detailed requirements and features available in the appendixes<sup>12</sup>, seven tools were compared against the requirements. The comparison evidenced that one tool is well above others and meets all requirements: Microsoft Teams.

<sup>12</sup> Project Report Appendixes can be made available upon request.



Microsoft Teams is a fast-growing app, which is now used in more than 500,000 organisations, including 91 of the Fortune 100 companies. MS Teams is being used to collaborate across locations, time zones, and in different languages. Key features of MS Teams include:

- Office 365 interoperability
- Availability on all devices with its comprehensive web interface and its app compatibility with Windows, Android and iOS
- Secure internal and external collaboration
- Online meetings: HD audio and video, with up to hundreds of participants, screen sharing or whiteboard, recording the meeting and getting an automated transcript, scheduling a meeting, checking the availability of attendees through the synchronisation with Outlook
- Live collaboration on shared documents and file sharing

Moreover, all project partners have access to Office 365 and MS Teams as part of their current institutional offering, which means there is no need for deployment. However, as there were differing levels of adoption of Teams across institutions, with NPTC Group of Colleges having integrated its use over a year before Growing Comms, and Gower College Swansea and Pembrokeshire College only commencing, training was necessary.

The two successive Project Managers are Microsoft in Education Accredited Trainers<sup>13</sup> and have delivered training to Gower College Swansea staff and Swansea University College of Engineering staff and students. NPTC Group of Colleges and Pembrokeshire College did not require any help in training their staff.

As a trial of the platform and to assist in the cross institutional management of the project, a Swansea University Growing Comms FE Partners Team has been created. All FE Project Leads were given guest access to the Team for the duration of the project. Project meetings were scheduled within MS Teams and documents and information shared through the platform.

Utilising MS Teams as a communication and collaboration platform on a wider scale will enable staff and students to enhance their digital capabilities and provide first-hand experience of a tool used in industry, supporting preparation for employment and creating a future ready workforce. It will also enable students and staff to work collaboratively on projects and link teaching across institutions, with international potential.

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<sup>13</sup> <https://support.office.com/en-gb/article/microsoft-teams-for-education-training-videos-and-resources-926063cdf5ab-4ded-804c-71fcafce8fdc?ui=en-US&rs=en-US&ad=US>

## 6. Collaborative Spaces

### 6.1. General proceedings

As explained in chapter 3, after deciding on the new communication and collaboration tool the next main objective of Growing Comms was to develop a digitally enhanced collaborative learning space at each Partner institution. However, instead of installing the exact same design at each location it was decided that each room would fit each Partner's needs. Adapting the Collaborative Spaces design and equipment to each Partner, although more time-consuming and probably more expensive, will ensure the long-term use of the room as legacy of the Growing Comms project.

The first step was for each Partner to define their needs and identify a suitable room to convert into a collaboration space. Then, designs of each room were developed in collaboration with each Project Lead, Partner Staff and goods providers. All Partners were invited to trial technical equipment prior to purchasing – including the use of a VC conferencing screen (Avocor WCD<sup>14</sup>) and Clevertouch<sup>15</sup> for collaboration and presentation activity.

A list of furniture and equipment for purchase was drafted and the orders put in. Deliveries, site visits (to confirm the technical functionality and prepare the install), installs and testing were organised at each site depending on Partner's constraints.

More details on design and equipment of the rooms can be found in the appendices.

### 6.2. Gower College Swansea – Room C10

Gower College Swansea were the first Partner to complete their Collaborative Space. They identified room C10 in the Tycoch Campus for the project. When considering the design for their room, Gower College Swansea wanted to ensure that it supported and facilitated active learning, with students and teachers, as well as traditional classrooms.

In brief the aim was to create a Collaborative Space that combined good design and technology to support and enhance teaching, learning and collaboration across the entire educational landscape of FE.

Gower College Swansea's objectives were to:

- Create a flexible and configurable learning space
- Use furniture that facilitated flexibility by being easily moved, re-arranged and cleared as needed by the activity
- To ensure the technology chosen supported multi-pedagogic approaches such as group work, videoconferencing, expert sessions, VR activities, etc.

<sup>14</sup> <https://www.avocor.com/products/windows-collaboration-display/>

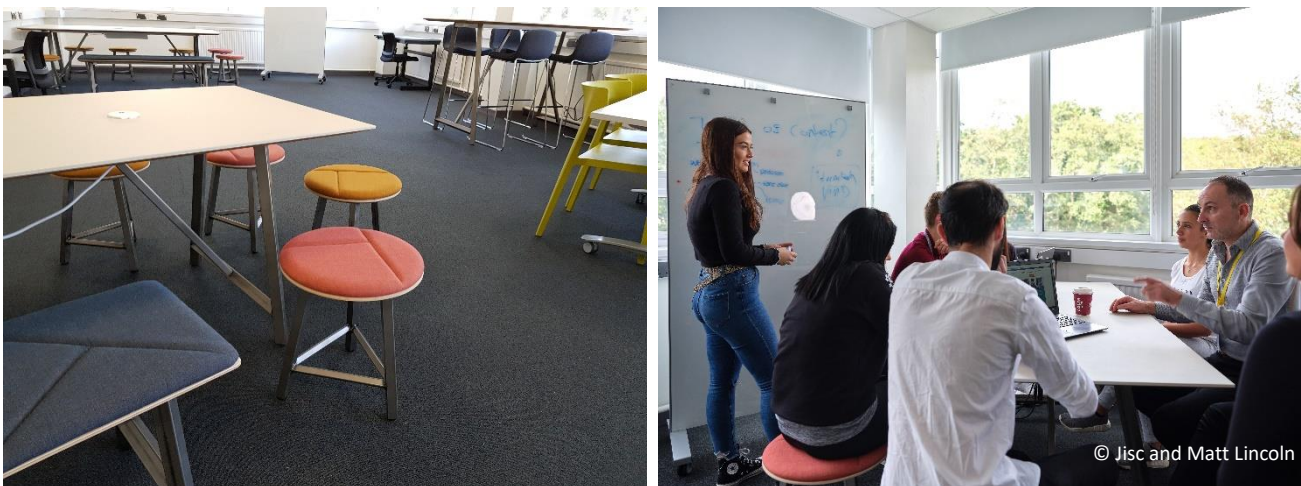
<sup>15</sup> <https://www.clevertouch.com/uk/education/education-range>

- To create a space where differentiation, activity and movement while learning was encouraged and supported

As shown on Figure 2, room C10 is equipped with 3 types of seating areas with high-chairs and tables, stools, regular chairs and tables. The seats are placed in around the tables to allow students to work in small groups as well as listen to a conventional lecture. The room includes screens mounted on portable media units and a portable magnetic collaboration board that can be placed around the group tables to enhance the collaboration and easily moved to adjust to the needs of the lecture. The room is complete with videoconferencing facilities, interactive Clevertouch boards mounted on height-adjustable and portable trolleys as well as VR headsets.

Having moveable and flexible furniture and technology allows the room to be configured to the needs of teaching and learning in ways that support numerous pedagogic approaches. It supports collaboration between students and more active, vocational or non-traditional teaching activities. It can re-define the role of teachers as facilitators to students' learning and not purely instructors of it.

This new room has facilitated a much more constructivist pedagogic model and allows students to construct their understanding and knowledge of their subject, which lead to better understanding and more developed higher order thinking skills. Gower College Swansea have seen this impact across the range of educational levels delivered in FE, particularly in students with significant developmental conditions such as autism and ADHA.



**Figure 2: Gower College Swansea Room C10**

### **6.3. Swansea University – Room B014**

This new Collaborative Space in the College of Engineering at Swansea University used the staff and student feedback from room A019 (mentioned in chapter 2) that indicated a need for both digital and analogue educational technologies to enable best practices in multi-modal delivery. As the room selected for the project (B014) was used for traditional lectures, it needed to be adjustable to allow for all ways of teaching.

The technical solution here is to utilise wall-mounted screens with webcams to create communication huddle spaces around each table. Furniture is flexible and moveable (tables and chairs on wheels) to allow the room to be reconfigured in varying setups to accommodate different users, purposes and events in the space. Large whiteboards were mounted on the wall to allow students to combine the use of digital equipment with analogue, following the feedback of staff after using a similar room.

To facilitate the transition and enable conventional lectures to be held in this room, the existing lectern and main display were kept and updated. Through the main lectern all screens in the room can be controlled and several levels of collaboration are available: main display only (traditional lecture), main display and repeater screens (exercise) or each screen independently (group work).

Finally, a wall mounted camera was added in order to capture the room (focus can be changed with a remote), which enables transmission to partner institutions for room-to-room collaboration via MS Teams or Zoom.



Figure 3: Swansea University Room B014

#### 6.4. NPTC Group of Colleges – Neath and Newtown Campuses

A priority for NPTC Group of Colleges was to increase student engagement and to encourage teaching staff to move away from traditional models of delivery to student-centred and activity-based learning. Growing Comms provided the opportunity to review the design of learning spaces and to connect with similar spaces in other institutions. The aim was to produce a flexible, technological learning space that would encourage teaching staff to move away from traditional models of delivery.

Two rooms were identified within the Group, one in Neath and the other in Newtown; the two sites are 90 miles apart, over a two-hour drive. These resources would enable students within the Group to participate in joint learning activities as well as connecting with others outside the group of colleges.

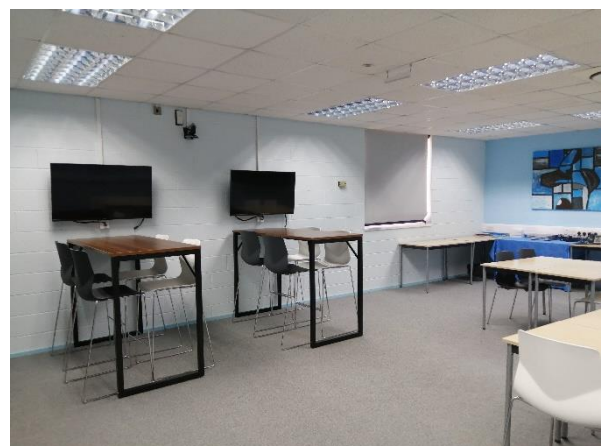
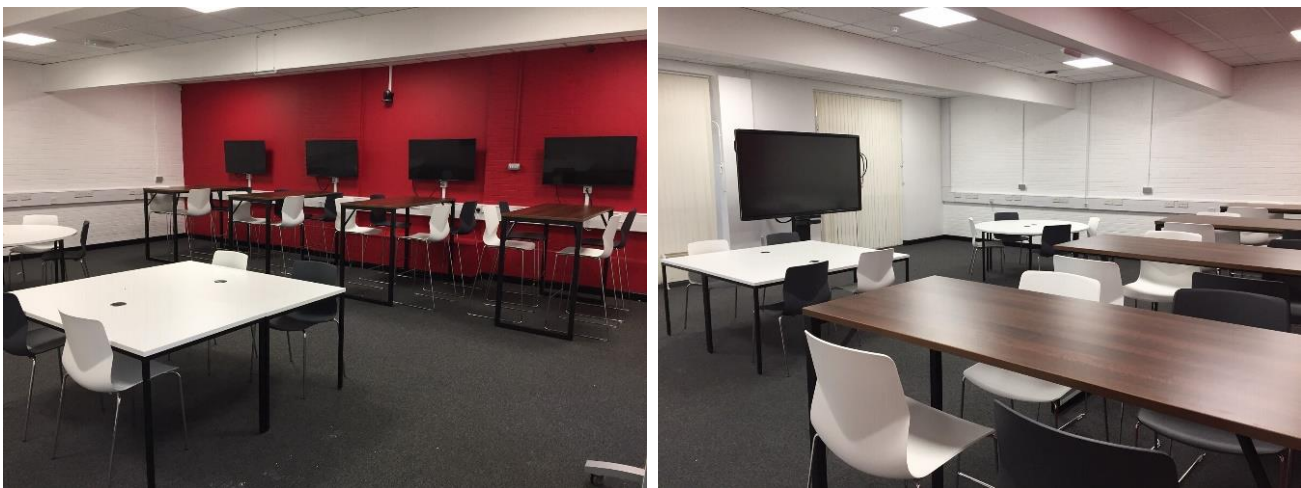


Figure 4: NPTC Group Newtown Room



The rooms followed a similar design and layout to the facilities in partner organisations. They are divided into three areas:

1. The collaborative learning spaces which are made up of a high-top table and four highchairs encouraging the students to stand. Each collaborative space has a shared screen mounted on the wall and cables to connect a range of devices. The facility in Neath has four collaborative spaces and the facility in Newtown is smaller with three collaborative spaces. The rooms have access to laptops which can be used by the students if they do not have their own device.
2. The flexible space which contains desks that can be used in a number of configurations to suit the needs of the users. The desks can be removed to create an open space for use with virtual reality technology.
3. The presenter space which contains a CleverTouch interactive screen with a camera that can be used for video conferencing. There is a wide-angle camera and room microphone which can be used by the presenter to record their presentation.



**Figure 5: NPTC Group Neath room**

## **6.5. Pembrokeshire College – Mobile Room**

Pembrokeshire College has always embraced the use of technology in learning and teaching, winning multiple awards. They already run an online school offering synchronous and asynchronous courses to learners all over the world. All classrooms are fitted with interactive whiteboards and WIFI coverage across the campus is excellent. Pembrokeshire College standard learning and teaching classroom methodology is based on easily configurable spaces in which desks are lightweight enough to be moved to facilitate group work, didactic and individualised classes.

Growing Comms has enabled Pembrokeshire College to explore remote teaching and guest teachers/experts delivering to a class. However, as their classroom utilisation rate is very high configuring a single space would not have been practical as the room would not have been readily available for multiple groups to book. Therefore, they decided on mobile facilities that can be moved from one classroom to another. The solution

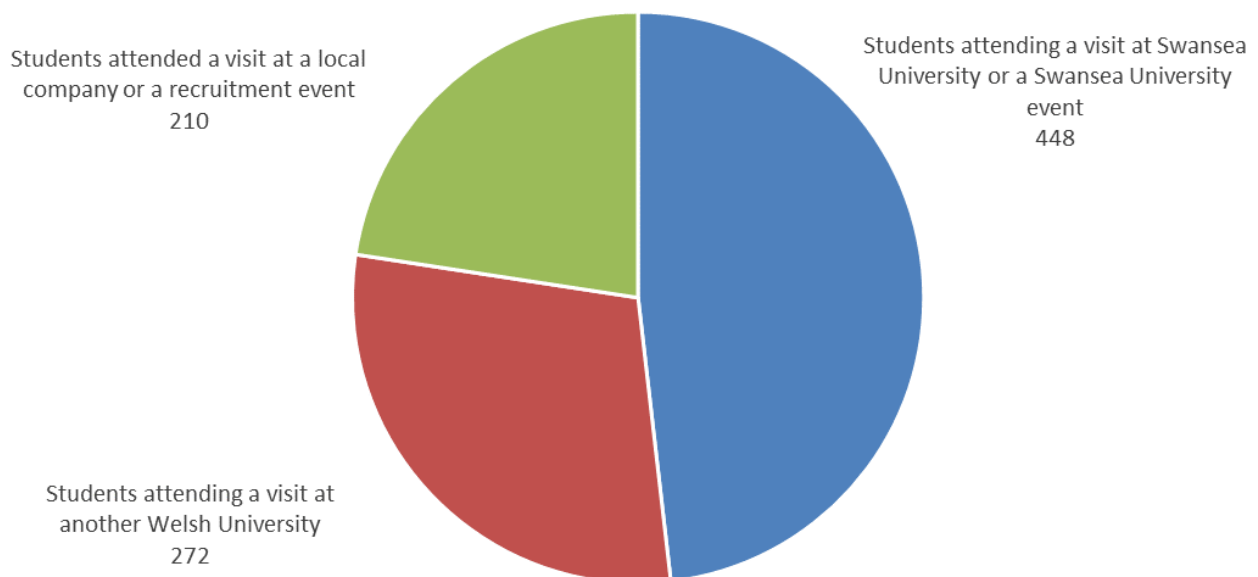
consists in interactive boards equipped with videoconferencing tools (wide-angle camera, microphone and speaker) mounted on trolleys as well as a set of iPads. These can be placed either in the same room or can be deployed to various college 'zones' across the campus.

Using this new equipment, Pembrokeshire College are also planning to create a permanent two-way video conference facility between two of their remote locations so that the teachers involved can teach learners across both centres (particularly in animal care).

## 7. Student Visits

### 7.1. Total Numbers

As a way to enhance collaboration between HE, FE and local companies, Growing Comms brought 930 Level 3 FE students to a Welsh University and/or to a local company. As shown in Figure 6, thanks to the project 448 students attended a visit at Swansea University or a Swansea University event; 272 students attended a visit at another Welsh University; 210 students attended a visit at a local company or a recruitment event.



**Figure 6: Distribution of student by types of visits**

These visits are a great opportunity for Level 3 FE students to learn more about the opportunities available to them in higher education and in the workplace at a time where they are thinking about their future. The following case study outlines the proceedings of one of these visits.



## Case Study

### Engineering Student Visit 11/12/2019



Figure 7: Students working on the Engineering challenge

The visit started in the morning with a tour of the College of Engineering facilities including several labs: Civil Engineering lab, Electronics lab, Sport Science lab, and VR room. This was followed by a tour of the Active Office – an energy positive office built as part of the SPECIFIC<sup>16</sup> Project.

Then, students attended a short lecture about Energy Demand, following up on a video created for this purpose and sent to them to watch before the visit (using the principle of Blended Learning).

After a short lunch break, students were presented with the afternoon activity:

*“In this session you will form a political party and establish a shadow cabinet. You will debate and then produce an energy policy describing your choice of approach based on materials presented by Swansea University. As a cabinet you will then present your energy policy to the room as a key part of your manifesto. At the end of the presentations all present will vote in the new government of their choice.”*

Students formed groups and started working on their manifesto, using lecturers in the room acting as “key experts”. Finally, they presented their energy policy to a room of “journalists” and had a Q&A session to defend their manifesto before the audience took a vote.

This activity was very popular with the students as it gave them a good overview of what a University course and project is like. As Swansea University moves towards new ways of teaching, with a focus on active learning, students were able to experience two approaches:

1. The Blended Learning<sup>17</sup> approach by watching an educational video explaining the main concepts needed for the lecture they followed on the day of the visit.
2. Role-play<sup>18</sup> as a way of learning during the afternoon activity where they had to form a shadow cabinet and develop a manifesto.

<sup>16</sup> <https://www.specific.eu.com>

<sup>17</sup> 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](https://www.sciencedirect.com.libezproxy.open.ac.uk/science/article/pii/S1096751604000156)

<sup>18</sup> G. McSharry, and S. Jones, “Role-play in science teaching and learning,” *School Science Review*, vol 82, pp. 73-82, 2000.

## 7.2. The Survey

To assess the effective impact of the visits, students were presented with a survey at the end of each event. Out of the 930 students involved in events related to the Growing Comms project 191 (20%) filled in the survey, all of them after a University visit.

Although a high majority of students taking the survey were from Gower College Swansea, all partner institutions are represented. Most of them visited Swansea University, but feedback was also collected after visits to Cardiff University, Cardiff Metropolitan University and University of Wales Trinity Saint David. A variety of subject areas was made available to the students, ranging from Science (Computer Science, Physics, Chemistry) to Arts (Advertising & Branding) and Nursing. This diversity of subjects was important to show FE students most of the options available to them, independently from their A-level subjects.

During each University visit, students had the opportunity to tour the University, listen to inspiring talks, do activities and/or practical work as detailed in the case study in chapter 7.1. The objective was to give them a global overview of what studies and life at a University are like.

## 7.3. Survey Results

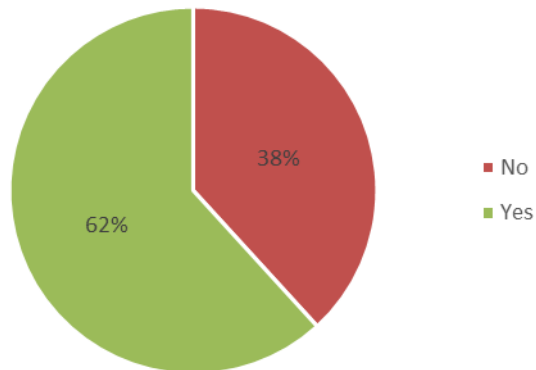
All details and figures can be found in the appendixes.

The first part of the survey focuses on feedback on the visit and what students most/least enjoyed. It appears the activities, talks and practical work they were presented with as well as the tour of the University are the items most enjoyed by the students, which is very encouraging for the teams organising the visits as they are the key elements. The detailed feedback from each visit has been provided in the form of a report to the relevant Colleges at Swansea University as a means of improving further visits.

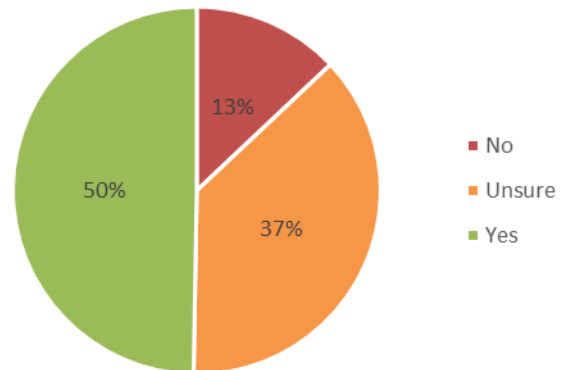
The second part of the survey focuses on the impact of the visits on the students. They were asked to evaluate if they would consider applying to the University they visited. It appears clearly on Figure 8a that the majority (62%) is considering applying thanks to the visit. This evidences how important it is for FE students to be in contact with Universities in order to discover the options available to them. Indeed, the tour of the University where students have seen the facilities comes, the courses available they have been presented with and the contact with the staff are the first items listed as reasons for considering applying.

Finally, this survey's objective was also to understand students' aspiration to retain or return to South Wales with their high-level skills. This last set of questions shows a clear attachment to the region, with 50% of the students questioned considering staying in South Wales for their degree, and when considering applying outside of Wales 30% are willing to come back to the area after their studies for employment (see Figure 8b,c,d). Increasing these types of visits with interesting talks and activities could only help raise these numbers by showing FE students the wide variety of options available in Welsh Universities.

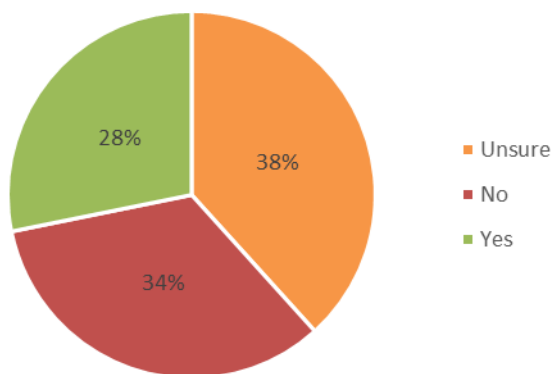
a. Has your visit made you consider applying to the University you visited?



b. Are you considering applying to study for a degree in South Wales?



c. Are you considering applying to study for a degree outside of South Wales?



d. If 'yes', would you consider returning to South Wales after studies for employment?

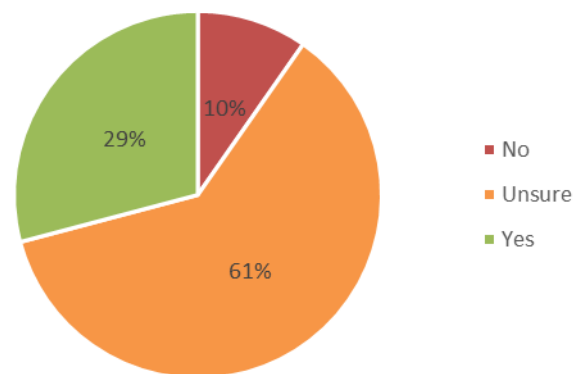


Figure 8: Evaluation of visit impact on student's application choices

## 8. Innovation and Engagement with Industry

Targets of the project were to encourage innovation and engagement between the partners and local industry or public sector organisation. The following case studies give examples of engagements<sup>19</sup>.

### Case Study

#### Microsoft



Figure 9: HoloMeeting Trial

The Project Manager Visited Microsoft Head Office twice to trial HoloLens for virtual collaboration and the potential use of Mixed Reality Apps (Remote Dynamics 365 Assists, Guides and Layouts). FE partners attended second visit and experienced HoloMeeting during an international collaboration session with a colleague in Madrid.

HoloMeeting was considered as a software option for virtual collaboration at distance, engaging in conversation, visual and written collaboration at distance. It enabled the attendees to view the same image, move it, annotate it, and converse in a Mixed Reality environment.

The potential for the purchase of a HoloLens 2 unit per site with a HoloMeeting app for virtual collaboration was considered. Unfortunately, the cost of the solution would have prevented scalability and the navigation did not seemed optimal for the age group of students targeted by the project.

<sup>19</sup> Please note that further collaboration that was planned in Spring 2020 had to be postponed due to the impact of the Covid-19 when many organisations focused on their primary activities.

## Case Study

### JISC



**Figure 10: Students using a Clevertouch board at Gower College Swansea  
(Credit: Jisc and Matt Lincoln)**

Jisc has been essential to the creation of Growing Comms, has contributed to its development, dissemination, and sustainability. This partnership between the project and Jisc is a good example of collaboration and knowledge sharing and transfer between a public organisation and educational institutions (here a University and three FE Colleges).

Indeed, Jisc's "Sticky Campus Roadshow"<sup>20</sup> contributed to the inspiration behind Swansea University's new ALS (more details in chapter 2) which in turn motivated Growing Comms. Jisc also facilitated the session of requirements gathering in the first steps of the project, using the Design Thinking approach. Details and outputs of that session can be found in chapter 5.3.

An article was published on the 4<sup>th</sup> November 2019 on Jisc's website<sup>21</sup> and then featured in their annual review contributing highly to the project's dissemination and sustainability.

*"Growing Comms is an example of Jisc's vision for Education 4.0  
– when student experiences improve because of advanced  
technology"*

Finally, the Principal Investigator of the project was invited at Digifest<sup>22</sup> as Community Champion to present Growing Comms as part of a workshop about active learning.

<sup>20</sup> <https://www.jisc.ac.uk/rd/projects/sticky-campus-roadshow>

<sup>21</sup> <https://www.jisc.ac.uk/news/getting-connected-for-education-40-04-nov-2019>

<sup>22</sup> <https://www.jisc.ac.uk/digifest>

## 9. 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. This chapter details six main impacts of the project.

### **Impact 1: Growing Comms has enhanced collaboration between FE and HE**

Growing Comms being a partnership between four institutions, it was essential to build efficient communication processes between the members of the project team. As explained in chapter 5.4, Microsoft Teams was the chosen collaboration and communication platform for the legacy of the project. To trial it and confirm the choice, it was used to assist in the cross institutional management of the project.

A Teams was created for the length of the project. The Project Manager and all FE Project Leads were given access. Regular project meetings were scheduled within MS Teams and documents and information shared through the platform. 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 (see chapter 6). These spaces have been 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 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 that are compatible and sometimes made for the educational sector, and is easily available to all partners, and to all Welsh Educational Institutions through the Hwb<sup>23</sup>. Even though each partner is implementing this new platform at its own pace, the global tendency moves towards deployment of the platform to all staff and students.

Growing Comms also provided necessary MS Teams training to the partners, with the two successive Project Managers being Microsoft in Education Accredited Trainers<sup>24</sup>.

<sup>23</sup> <https://hwb.gov.wales/>

<sup>24</sup> <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>

**Impact 4: Growing Comms has introduced the use of VR as a learning tool, provided headsets, and encouraged collaboration between the partners.**

When considering the technology to include in the Collaborative Spaces, Virtual Reality (VR) came to mind. Swansea University having its own VR team with extensive experience of the technology and its use in education, all partners agreed to include VR into the rooms. The following case study shows how Growing Comms built on the availability of the technology to transfer knowledge and skills from Swansea University's VR team to the partners.

Case Study	
<b>VR technology transfer</b>	<p>As part of Growing Comms, each partner was equipped with Oculus Quest<sup>25</sup> virtual reality (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.</p> <p>The choice of technology was based on two visits from FE Partners to Swansea University's VR room, where they had the opportunity to trial a variety of VR headsets. These visits were a great inspiration for all partners and the opportunity for Swansea University's VR team to share their knowledge of the technology and its educational applications.</p> <p>An observation was made that although Swansea University's College of Engineering has a dedicated team working on VR and developing educational apps this is not the case for all partners. This gap of skills was identified as a potential threat to the sustainability of the VR technology in the future. Therefore, Swansea University's VR team offered to deliver an introductory course to Unity<sup>26</sup> – a free game engine used to create content for VR headsets.</p> <p>This 4-week training course is designed for staff and students and its objective is to introduce attendees to the use of the Unity software to develop basic apps like "memory palaces" that could be adapted to any subjects and learn how to take the app from Unity to the VR headset.</p> <p>Sessions of this training course will take place in the second part of the project, thanks to the additional funding secured.</p>

<sup>25</sup> <https://www.oculus.com/quest/>

<sup>26</sup> <https://unity.com/>



### **Impact 5: Growing Comms' visits have encouraged students to consider entering HE.**

Student visits within the project have offered the chance to FE students to discover what HE is all about and what options were available to them. Meeting University staff, lecturers and current students, experience lectures and undergraduate activities has helped them consider HE as a possibility, an approachable option. Moreover, the activities offered to them on these visits were highly interactive and used up and coming teaching approaches (refer to case study in Chapter 7.1). As proof of the high impact of these visits, a majority of students interviewed mentioned the visit made them consider applying to HE (see Chapter 7.3 for more details).

### **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.

A first article detailing the objectives of Growing Comms was written by Gower College Swansea on their website<sup>27</sup> and was also published<sup>28</sup> on FE News – an Education and Employability news channel for The Future of Education. Jisc contributed to the dissemination of the project with an article<sup>29</sup> detailing Growing Comms, its background, its achievements, and its objectives.

Growing Comms and its expected impacts were detailed along with other active learning approaches in a paper called "*Active classrooms enabling regional, national and global collaboration*"<sup>30</sup> that was presented at iCERi2019 Sevilla<sup>31</sup> on the 12<sup>th</sup> November 2019. The project was also presented through a workshop at two conferences, first the Universities UK TNE 4.0<sup>32</sup> on the 27<sup>th</sup> February 2020 and then at Digifest<sup>33</sup> on the 10<sup>th</sup> March 2020 where the Principal Investigator was invited as Community Champion.

<sup>27</sup> Gower College Swansea, "FE/HE collaboration sees classroom transformation," 15th October 2019, 2019. <https://www.gcs.ac.uk/news/fe-he-collaboration-sees-classroom-transformation>

<sup>28</sup> FE News, "FE/HE collaboration sees classroom transformation," 17th October 2019, 2019. <https://www.fenews.co.uk/press-releases/36955-fe-he-collaboration-sees-classroom-transformation>

<sup>29</sup> Jisc, "Getting Connected for Education 4.0", 4th November 2019, 2019. <https://www.jisc.ac.uk/news/getting-connected-for-education-40-04-nov-2019#>

<sup>30</sup> P. Holland, "Active classrooms enabling regional, national and global collaboration," ICERi2019 Proceedings, pp. 7691-7699, 2019. <https://library.iated.org/view/HOLLAND2019ACT>

<sup>31</sup> <https://iased.org/iceri/>

<sup>32</sup> <https://www.universitiesuk.ac.uk/events/Pages/Technology-and-TNE.aspx>

<sup>33</sup> <https://www.jisc.ac.uk/digifest>

## 10. Conclusion

This investment from HEFCW has highlighted that there is the room and the need for FE/HE collaboration and has provided an opportunity to build strong working relationships between all the partners and other industrial and public sector organisations, including Jisc.

Growing Comms is an impactful and successful project as it has met all the achievable targets<sup>34</sup> initially described in Chapter 3. It has:

- Defined the needs for a CCP, chosen MS Teams and tested it to assist with cross institution collaboration
- Studied existing literature and examples of Collaborative Spaces, defined the needs of each partner, designed, procured, installed and tested Collaborative Spaces at each institution
- Promoted HE to Level 3 students from all partner FECs by organising visits to Welsh Universities
- Engaged with local companies and organisations to share knowledge

The fantastic success of the Growing Comms and the cross institutional collaboration has underlined a need for a continuity. Even more so today, the need for effective online collaboration and communication is enhanced in these times of crisis where students and staff might not be able to be present physically. This analysis has motivated the application for further funding to deepen the FE/HE collaboration, which has been granted.

Growing Comms will carry on its work until the end of December 2020, with a focus on online collaboration between HE/FE, online activities with students and local companies, and support its partners through the changes to teaching delivery required by the Covid-19 situation.

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<sup>34</sup> Due to the Covid-19 situation, activities with Level 2 FE students and further activities with local companies for Level 3 student, which require the use of the Collaboration Spaces, have been paused until further notice.