



South of Scotland Skills & Learning Network PROJECT **UPDATE**





This eNewsletter aims to highlight some of the progress being made.

The south of Scotland is benefiting from an investment of just over 6.6 million pounds as part of plans approved by the South of Scotland Economic Partnership (SoSEP), in July 2018, to enable the creation of a digital learning platform and infrastructure that aims to provide access to learning

opportunities for individuals of all ages, irrespective of location.

The investment sees a partnership between Dumfries & Galloway College and Borders College

to develop a network of Science, Technology, **Engineering and Maths** (STEM) Hubs across the South of Scotland, to address the immediate skills gaps in areas such as Energy and Engineering, Construction and Care. These will be accessible to school and college students and employers wishing to try the latest technologies or upskill their current workforce. A number of digital Spokes, located across the south of Scotland

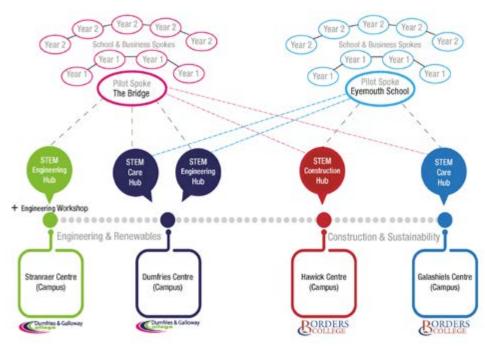


in schools, community venues and in local business premises, provide inclusive access. Lessons delivered elsewhere will be open for others to participate in, along with online learning resources.

Through this investment, the colleges are collaborating to develop their offer within their respective regions, especially at

higher levels, and grow their online flexible learning provision over the next five years.

This newsletter aims to report on the progress and developments being made.



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Construction progress — Ogilvie begins Hawick Innovation Hub revamp



Ogilvie Construction has started work on a redevelopment of the Borders College Hawick Campus Innovation Hub.

The firm will undertake internal works to extend the upper floor of the Hub, creating flexible space for businesses and individuals to meet or undertake training and development sessions. The project will be completed in July this year and is part of a wider investment by the South of Scotland Economic Partnership.

Donald MacDonald, Managing Director at Ogilvie Construction, said: "We are delighted to be working with Borders College and look forward to delivering a high quality facility that will play an important part in supporting business support and development in the area."

Hazel Robertson, Vice Principal at Borders College, said: "This investment shows our long-term commitment to the Hawick campus and the exciting and flexible ways in which businesses need to learn to operate if they are to compete successfully in the 21st century."

As well as hosting the successful Business Development Unit, which provides business and training opportunities for businesses across Scotland, the investment will see the launch of a number of forward thinking technological developments, which both local and national businesses will be able to benefit from. These include the expansion of a partnership with Worcester Bosch, allowing access to renewable technologies in the provision of heat and power. Added to this there will be an 'Eco' room which will house the latest technologies in low-carbon



and sustainable construction, linked to flexible workshop areas for the studying and testing of renewable technologies, such as air tightness insulation and thermal imaging.

The Hub will give local and national businesses the opportunity to find out about, and be trained in, technologies that are transforming the construction industry, and will include 3D printing, augmented reality, Business Information Modelling (BIM) software, analytical software and the use of drones.



Eco Room Substructure 1



STEM Hub Manager for Hawick

Campus appointed

Holly Farnham, our new STEM Hub Manager, talks about her priorities and plans for the development of the Hawick Campus



I am delighted to get the opportunity to be involved in such an exciting project, in the role of STEM hub co-ordinator.

Having spent time working as a Medical Physicist in the NHS and then as a Physics teacher, I can't wait

to bring my passion for STEM to a new platform.

As a Medical Physicist, I specialised in radiation protection and this meant having to communicate with a huge spectrum of society, a part of the job I thoroughly enjoyed; it also meant the use of a huge range of technologies in teaching, learning and regarding room shielding and construction. I am hoping this insight will serve me well as I navigate this role.

My priority going forward is to connect with industry contacts to discuss emerging construction technologies with regard to

current sector gaps and needs. A progressive workforce will future-proof the construction industry within the south of Scotland. My aim is to implement a Hub that is a synthesis of learners, local businesses, community and industry that enriches all parties, implementing best practice as standard. This would include continually identifying new technologies within the construction sector (with a particular focus on renewable and sustainable technologies and approaches) and being a champion for local businesses through development, innovation and entrepreneurship. Therefore, key within the College is collaborating

with local businesses with both in-reach and outreach events which will hopefully enable the College to work closely with local businesses to set up new career pathways, placements and apprenticeships so that our students leave the

> College inspired and siteready. An example of this is the College's partnership with Worcester Bosch, which we are extending with regards to renewable technologies in heat and power.

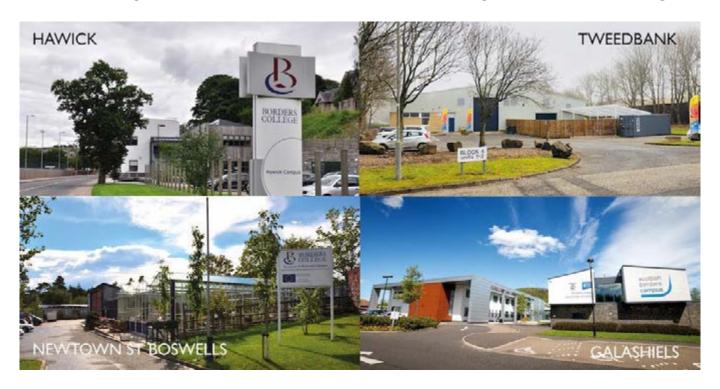
The Hubs and Spokes enable the community to upskill as it is a priority that this technology is available to all and used as much as possible. As someone who loves teaching and sharing my passion for all STEM subjects, I could not resist applying for this role when I saw it. Whilst I will not be

teaching directly, I am thrilled to have the opportunity to be part of something that will impact the process of learning and tackle the geographical barriers some face by the implementation of cutting-edge distance-learning technology. I am so looking forward to meeting all those involved in the Hubs and being a part of such an incredible project.



College commits £100k to Digital Hub project to aid equity of access

Borders College has committed £100,000 to create seven 'Digital Hubs' across the region.



The new suites, which are being installed at its Galashiels, Newtown St Boswells, Hawick and Tweedbank campuses, will be fitted with top video conferencing facilities and will give students who live further afield the chance to work remotely – by connecting them with their

lecturers online.

The College has teamed up audiovisual specialists Mediascape to install the equipment, and Ajenta to provide the video conferencing service.

New screens, microphones and video cameras will be put in the Hubs over the coming months as part of the project, which is being partly funded by the South of Scotland Economic Partnership. E-learning Manager for Borders College Conor Bradley said:

"The Digital Hubs will provide opportunities for new ways of delivering remote teaching and

learning across the Borders.

"These new delivery modes are designed with the aim of improving students' equity of access to a wider range of subjects.

"Where currently a student located further away

from a College site may find the travel time and cost prohibitive for study, future College courses will offer opportunities to participate remotely via a combination of remote delivery over video conferencing and



online learning materials.

"The College is pleased to be working with Mediascape and is looking forward to delivering new ways of accessing learning to students."

For further information, please contact Conor Bradley, E-Learning Manager – email cbradley@borderscollege.ac.uk or call 08700 50 51 52.

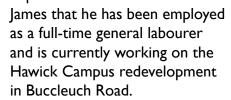
Campus redevelopment pays

additional local benefits

Apart from the obvious benefits of the redevelopment of the Hawick Campus, which is currently underway, there is also an additional advantage for one local man who has gained full-time employment from Ogilvie Construction, who are the main contractor.

James Kirby, 41 from Hawick, who has been unemployed for eight months, undertook a two week placement as part of his

jobseekers
benefits
requirements
and the local
Community
Benefits
scheme. Ogilvie
Construction
were so
impressed with



Commenting on his appointment, James said:

"I was more than happy to take part in the unpaid two week placement so that I could learn some new skills and show that I am keen to learn, and a hard worker.

"When they said they would like to take me on as a general labourer, I was delighted and jumped at the chance. Already I have benefitted from a number of training opportunities,

from getting my CSCS card (Construction Skills Certification Scheme), as well as first aid and Health and Safety training."

Ben Allard, the site Manager for Ogilvie Construction, said:

"I met with John Mallin, from Scottish Borders Council, who explained how the Community Benefits scheme worked, and we were more

than happy to participate.
"After the two week placement we saw that James had real potential and could prosper and develop within the industry, so were more than

happy to offer him a job."
"Ogilvie are a forward-thinking company, who value the communities that they work in and realise that you can develop local talent if we create the opportunities."

In addition to employing James, Ogilvie are using local contractors for some of the work at the Campus, including John Laidlaw from Jedburgh, Ferguson and Aitken from Hawick, and are also considering Swinton Builders for some of the building work.

The Hawick redevelopment project will see the Campus, which was opened in 2007,



reconfigured to accommodate the Innovation Hub, which is being launched as part of investment by the South of Scotland Economic Partnership (SoSEP).

The Community Benefits
Scheme, which is operated by
Scottish Borders Council and
is all about adding value to
local communities through the
'Community Benefits Policy',
looks to ensure that additional
benefits are considered
when companies undertake
construction works, service or
supplies contracts within the
Borders.

And the next construction job that Ogilvie are moving to, in the Borders, is not that far from the Hawick Campus as they head to Galashiels, to construct the new building which will house the Great Tapestry of Scotland. The redevelopment of the Hawick Campus is set to be completed by August.

Photos: Top right: James Kirby outside the Hawick Campus. Middle left: James with Ben Allard - Site Manager

Construction Progress



Oberlanders Architects were selected by Dumfries & Galloway College to design the new STEM Hubs at their campuses in Dumfries and Stranraer. Oberlanders Architects LLP, Edinburgh, established in 1983, are an award winning architectural practice who have managed projects in a variety of sectors, throughout the UK, Ireland and mainland Europe. The aim of the facilities is to strengthen links between the College and industry partners, furthering opportunities for effective training, research and commercial outreach.

STEM Hub - Engineering Stranraer Campus









https://youtu.be/BTNQ23Irmaw

https://youtu.be/vO Jr3QRA7k

TAKE A TOUR......SCAN THE QR CODES OR FOLLOW THE LINKS



Dumfries & Galloway College have appointed a contractor to carry out the construction works for Dumfries and Stranraer STEM Hubs. The successful contractor is Bell Contracts, who are based in Northern Ireland. Bell Contracts have a wealth of experience in working on Public Sector sites, specifically education, and have carried out refurbishment works at the Stranraer campus previously. Bell Contracts intend to bring localised benefits and have named local contractors and suppliers within their bid. There will also be opportunities for students to

benefit, which will be discussed and arranged in due course. Colm Bell, Project Director at Bell Contracts, said: "We are delighted and excited to have been awarded the contracts to undertake the extension of the STEM facilities Hub at Stranraer Campus, and the extension works for the new renewables energy Hub, and refurbishment of the Care Hub at Dumfries Camus. Our contracts management team have a wealth of experience in delivering construction and refurbishment projects within live education facilities. We have previously completed refurbishment works for Dumfries & Galloway College, and look forward to working with the College and their design team again."

Dumfries Campus



STEM Facilities STEM Hub (Renewables):

This will be housed within a new extension to the side of the Henry Duncan building / Solway Centre adjacent to the Dumfries Campus Building and will be used for the delivery of teaching renewable energies. The building will showcase the use of renewable technologies as a teaching tool, eg with energy generation and usage on display.

STEM Hub (Care):

This will be housed within the reconfigured Henry Duncan building / Solway Centre and will have a simulated dementia friendly home, equipped with the latest digital health equipment.

Design approach:

The new STEM Facility is providing flexible education space for all departments and will be used in conjunction with the rest of the College building. The Hubs will be incorporated into one facility, with a dedicated entrance and reception area independent from the main Campus building to enable out-of-hours access.

The approach to the design of the facility was to unite the new extension and the existing Henry Duncan building / Solway Centre to form a simple and coherent building in keeping with the modern design of the main building, with an enhanced public realm to activate the pedestrian approach to the College. A key element of the existing building is the long 'wing' wall that projects from the entrance area. This wall is being extended to form the front elevation of the new facility, wrapping around to form the external envelope of the Renewables Hub.

The accommodation is comprised of three main components: a generously proportioned single storey flexible teaching / exhibition space, adjacent to a two storey block of supporting accommodation, with a small glazed link connecting into the Henry Duncan building. The materials selected for the building are in keeping with the College building, namely sandstone-coloured rain screen cladding, zinc cladding, structural glass entrance screen and aluminium curtain walling.

Eco Features:

Due to the emphasis of the use of the building for the teaching and promotion of renewable technologies, the design features the following:









- Roof-mounted solar thermal collectors
- Solar PV panels
- Ground-sourced heat pump
- Wind turbine

Electric cars:

A key element of the renewables teaching programme is the promotion of electric cars. The College is investing in a pair of electric vehicles, and there will be parking spaces and charging points for these located adjacent to the disabled spaces.

Changes to existing building approach:

As part of the development, the College is making some changes to the existing approach to the building, to approve accessibility and overall appearance. The

existing wheelchair access is separated from the main pedestrian approach to the entrance by a projecting wall, with a glazed canopy overhead. Over the years this shady space has been misused, with loitering being an issue. The projecting wall and canopy above are being removed, to open up the space in front of the new STEM facility. A wider, more prominent and welcoming ramp is being constructed as part of the main pedestrian route, closer to the disabled parking area. This ramp will also provide wheeled access for large and heavy equipment into the STEM Facility.

Work on-site is now well underway in relation to the ground works for the new extension and removal of existing fixtures and fittings from the Henry Duncan building.

Stranraer Campus





STEM Hub (Engineering):

This will be housed in a new extension to the Stranraer Campus, and will have a flexible open plan space for hosting various engineering equipment and technologies.

Enabling ground works have been completed ready to take the steel framework for the new extension. This has included the demolition of existing outbuildings, relocation of power cables and the preservation of original sandstone blocks and landscaping. The original workshop will be maintained but will be adapted to provide access to the new facilities.

Design Approach:

Stranraer is a smaller, single storey extension of the courtyard side of the existing 1980s building. Its splayed lines and crisp materials add a dynamic vibrancy to the campus, providing the 'wow' factor that the College was looking for.



Green Economy – Support Funding

Dumfries & Galloway College was awarded £195,000 funding from Scottish Power Energy Networks' Green Economy Fund, which the College will use to install additional renewables technologies to complement the existing development of the renewables STEM centre.

The £20 million Green Economy Fund, established earlier this year by the electricity network operator Scottish Power Energy Networks (SPEN), supports the ambitious green targets of the Scottish Government to boost local economic growth, improve air quality across the country and deliver a better future, quicker.

Frank Mitchell, Chief Executive of SP Energy Networks, said: "Dumfries & Galloway College is leading the way in renewables education and local business support; the new facility will help expand the area's green economy and accelerate local economic growth. The Green Economy Fund will provide them with the financial boost required to add quality and diversity."

William Currie, Head of Corporate Services, recently attended a meeting to discuss the Green Economy Fund with Scottish Power Energy





Networks (SPEN). Full contracts have now been signed and the College has started placing the orders for the renewables equipment. This will provide the power and heating to the new Hub. SPEN are looking forward to working closely with us to explore further benefits as the project grows.

New Learning Technology — Delegate Visit

On 14 May Dumfries & Galloway College hosted a trip to Ajenta's office in Edinburgh to enable delegates from Dumfries & Galloway Council, Head Teachers from the appointed schools/Spokes and College Staff to see a demonstration of the Vscene kit set up as it will be in the nominated locations.

The visit provided the opportunity to gain knowledge and understanding in respect of the technological capabilities, and see first-hand the learning/teaching options and opportunities.



School Digital Spoke sites announced











Earlston High School, Eyemouth High School, Kelso High School, Selkirk High School and Berwickshire High School

Students will soon be able to learn off-campus, thanks to a new collaborative initiative involving Borders College and Scottish Borders Council with funding from the Scottish Government, as part of the South of Scotland Economic Partnership (SoSEP) project.

Earlston, Eyemouth, Kelso, Selkirk and Berwickshire high schools will all be kitted out with new high-tech video conferencing equipment to allow pupils to work on their higher-level courses from their classrooms without leaving school.

The five 'Digital Spoke' sites are set to open in the new academic year as part of the new Digital Hub and Spoke project, which aims to see a step change in the opportunities for accessible education and training for youngsters in the Scottish Borders, and will aid the alignment of the present skills to those of the future skill needs of the economies of not only the Scottish Borders, but also the national economy.

The initiative is being run by the College with the support of Scottish Borders Council, and is partly funded through the Scottish Government South of Scotland Skills and Learning Network as part of the SoSEP project, with an investment in this phase of the project totalling over £100,000, which is part of the total investment of over £6.6 million pounds announced last July.

The money is part of a package of funding awarded to Borders College and Dumfries & Galloway College to develop a network of Science, Technology, Engineering and Maths (STEM) Hubs across the South of Scotland to address the immediate skills gaps in areas such as Energy and

Engineering, Construction and Care. Four schools in Dumfries & Galloway have also been identified as recipients to become Digital Spokes. They are: Annan Academy, Castle Douglas High School, Douglas Ewart High School and Sanquhar Academy. In addition, The Bridge, located in Dumfries, will also become a Digital Spoke.

Councillor Carol Hamilton, Scottish Borders Council's Executive Member for Children and Young People, said:

This exciting project will help tackle some of the challenges we face as a rural area, making it easier than ever before for our young people to access courses at Borders College. "Hopefully this initial phase will prove successful and can be expanded to other sites, so even more of our young people can benefit. "Ensuring that we provide the necessary training and skills within the Scottish Borders, to enable young people to gain jobs in sectors

where there is greatest need or growth, is vital

to the long-term economy of the area and our

communities.

"It is key that this region's education and training provision aligns to the present and future skill needs of the south of Scotland and wider national economy, and this project is an important step towards that long-term goal.

For further information, please contact Conor Bradley, E-Learning Manager – email cbradley@borderscollege.ac.uk or call 08700 50 51 52.

Dumfries & Galloway Schools Announced











The Bridge, Annan Academy, Douglas Ewart High School, Castle Douglas High School, Sanquhar Academy.

Along with the building of two Digital Hubs at the College campuses (Dumfries and Stranraer) there will be 10 Digital Spoke rooms in regional secondary schools. In phase one, four schools—Annan Academy, Castle Douglas High School, Sanquhar Academy, Douglas Ewart High School and The Bridge—will become Digital Spokes. They will be enabled as modern video conferencing facilities equipped with hi-definition touch-screen displays, hi-spec video conference cameras, advanced microphones and updated learning spaces. The equipment will enable remote and on-site

learning, providing staff with opportunities to expand online, provide remote delivery of courses and link with other educational establishments worldwide. This will significantly enhance curriculum choices without the need for travel. The four schools in Dumfries & Galloway were chosen for phase one because of rurality, equal opportunity, geographical location (one in each area), and existing partnership links with Dumfries & Galloway College. An additional five schools in Dumfries & Galloway will be enabled in phase two next year.



Andy Glen, Acting Principal, Dumfries & Galloway College, said:

"We're pleased to be working in collaboration with the Council to provide students across the region with the opportunity to access the very latest virtual classroom technology, to enable them to realise their full potential."

Councillor Jeff Leaver, chair of the Children, Young People and Lifelong Learning [CYPLL] committee, said:

"This investment can deliver a significant improvement in opportunities to access education across our region. In a regional economy such as ours, it's vital that we overcome barriers to education, to ensure that people can develop the skills and knowledge they need."



Ajenta to kit out new Hubs

Both colleges have teamed up with communications company Ajenta to install video conferencing technology and facilities on campus. High-tech equipment is also being installed at new 'Digital Hub' and 'Spoke' sites, which have been set up to allow students to work remotely by connecting them with their lecturers online.

Ajenta will power the rooms with its VScene video conferencing service as part of the project, which is being partly funded by the South of Scotland Economic Partnership.



As the colleges' new Digital Hub sites are installed over the coming months, staff will begin to undergo training on how to use VScene in a variety of scenarios, including classroom delivery, continual professional

development training and staff meetings.

Planning is currently underway for a number of courses in 2019/20 that will involve remote delivery to students, offering more opportunities closer to home with reduced travel times.

Conor Bradley – E-learning Manager for Borders College (pictured) said: "We were particularly impressed by Ajenta's support of the e-Sgoil online school based in Stornoway. Using the VScene service, e-Sgoil has now been delivering remote learning to pupils across the Western Isles for over two years, significantly expanding the choice of subjects available to students."



Vscene overview

Vscene is a video collaboration platform for education and research used by thousands of

schools, colleges and universities across the UK and globally to effectively extend the curriculum and promote inclusive learning.

Vscene is used to connect classrooms and deliver teachers from any location over high-quality video with a toolkit that can support the pedagogy of

enhanced teaching such as distance learning, flipped classrooms and multi-class delivery.

Vscene can also support in-class delivery with an innovative learning and teaching spaces design service, helping to deliver various types of class technology with a suite of hardware solutions, such as the V-Room technology for immersive

classrooms and the V-Board interactive touchscreen.

DUMFRIES & GALLOWAY COLLEGE

Colleges Scotland are holding their annual twoday College Expo event in June. There will be a joint presentation of the SoSEP funded project by Ajenta's CEO John Wilson, Calum Rodgers, ICT Manager at Dumfries & Galloway College, and Conor Bradley, Project Manager from Borders College, on the 19th June. The team will be presenting the following topic:



The Evolution of the Connected Classroom & Remote Teaching Delivery

There has been a significant rise in the concept of the Connected Classroom in recent years, enabling colleges to connect with schools to provide support for curriculum and skills enhancement across a multitude of subjects and components.

A number of institutions have taken the connected classroom an evolutionary step forward by delivering teachers virtually into the classroom in a variety of ways, delivering immersive teaching to many locations at the same time, creating significant new opportunities for learning communities. Borders College and Dumfries & Galloway College are presenting at this event on their journeys towards improving equity of access to learning for learners across the South of Scotland through delivering remote learning in campuses, schools and colleges.

Calum Rodgers – ICT Manager, Dumfries & Galloway College Calum is new to the education sector, having joined the College in October 2018. Calum has joined the College at an exciting time and will play a key leading role in the digital transformation of the College. He has spent the last 17 years working in IT, originally as a field engineer, but most recently as the IT Support Manager for a leading international renewable energy consultancy. While in that role, Calum led the team that designed and built the infrastructure for a world class 24/7 operational control room, featuring the latest in audio-visual technology, and also for its disaster recovery site. Calum is highly experienced in all areas of technology including telecommunications, video conferencing, networking and servers. When not in the College, Calum is involved as a Section Leader in his local Scout group.



Digiskillscotland

The name chosen by both colleges for the joint platform to host all curricular materials needed for the initial pilot courses is digiskillscotland.

This name was chosen as it reflects the key elements of the overall project and gives us scope to grow beyond the south of Scotland. As the digital skills and learning network grows, working behind this brand name will allow us to make changes or upgrades to the back end without the end user noticing or having to change sites. The vision for digiskillscotland is that it will be an online resource for learning that will allow for

online collaboration easily and give equity of access to those who need it.

Working with our key partner, Ajenta, we will be able to link directly from digiskillscotland into our virtual classrooms for seamless delivery to any of our Spoke sites. Beyond the Spoke sites, we can use the digiskillscotland platform to deliver to businesses, community groups or even individuals with ease.



Looking to the future











The curriculum development for the PDA Acute & Community Care has been specifically funded by SoSEP, and it has provided us with the opportunity to expand our curriculum delivery to SCQF level 8. We have worked in close collaboration with NHS Borders in developing this curriculum, and have recruited senior Staff from NHS Borders from the Acute setting to deliver on the course also.

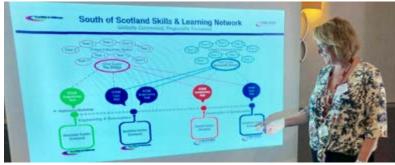
The current cohort will be the first group to benefit from our new clinical skills lab, and our new simulated home care environment.

For further information, please contact Lesley Anderson, Curriculum and Learning Manager – email Lesley Anderson @borderscollege.ac.uk or call 08700 50 51 52.

COLLEGE DEVELOPMENT NETWORK EVENT "REFLECTING BACK - MOVING FORWARD"

Learner Journeys, Inspirations and Challenges

The College Development Network event "Reflecting Back – Moving Forward" was held in May. This event was designed for School/College Partnerships. The Thursday morning started with a focus on the learner journey, and key speakers sharing inspirations and



CHALLENGES AND OPPORTUNITIES

- Digital and online learning experience and expertise
- Cultural change required within colleges and with partners
- Engagement with and managing expectations of key stakeholders
- Capacity collaborative approaches
- Future structure to ensure sustainable progress

challenges for delegates. After coffee, delegates broke up into workshops. Hazel Robertson led one of the workshops, on Globally Connected, Regionally Focussed. A dozen people participated in the workshop and showed significant interest in the physical design of the Digital Hubs and Spokes, the development of shared material across the south of Scotland, and how this was working in partnership with schools. The presentation opened up an interactive discussion with the group and showcased the journey we are on. Delegates were keen to hear how students would be supported whilst experiencing their learning via a Hub. The group were impressed with our progress and were keen to hear about the next stages of our work, including our intended coverage, and how we plan to roll this out more widely to businesses and community groups.

Curriculum Design Progress

Discussions have progressed around the creation of a joint VLE platform (Moodle/LearnNet) with Borders College. This will impact the workflow as the platform has to be built, courses transferred, IS systems incorporated and tested.

Three curriculum areas were identified as part of this project: Engineering, Care and Construction. Each curriculum area has identified units to develop, whilst working closely with Borders College, with whom we will share the content. There are three units currently being developed which are very different in terms of content:



HNC Electrical Engineering: DC AC Principles - Lecturer: David Paterson

• Learners include F/T, P/T, Infill, Schools.

Challenges:

- Content: around 150-200 formulae having to be written using special editor.
- In one section alone, 70 electrical circuit drawings to be produced.

Reablement and Self Management - Lecturers: Lyn McCourtney & Susan Johnstone

• Learners include Care Workers and F/T students.

Challenges:

- Large amounts of theory, legislation, which is very flat in terms of content.
- Large amount of human biology, which has numerous complicated labelled images, which need to be improved.
- About 30 podcasts (existing) that need to be edited and shortened.

Crest Bronze Award - Lecturer: Roz Anderson

- Learners include 13-14 year old school students.
- Team project work looking at sustainability in housing design.

Challenges:

- Engagement of learners in online collaborative tasks.
- Making improvement of learner's digital capabilities a focus.

