South of Scotland Digital Pathfinder

Final Report

Borders College

Dumfries and Galloway College
One step ahead

Scottish Funding Council
Comhairle Maoineachaidh na h-Alba

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Introduction

1. In the autumn of 2022, the Scottish Funding Council (SFC) funded Borders College (BC) and Dumfries & Galloway College (DGC) to undertake a pilot programme to test new ways of responding to regional skills needs, as part of the SFC's Regional Tertiary Pathfinder programme.

2. The South of Scotland's (SoS) Digital Pathfinder (DP) became one of the SFC's seven pilot pathfinder projects which aimed to take a 'learning by doing' approach to understand how the education and skills system could become more responsive, integrated, and supportive of local economic recovery and inclusive growth.

3. The SoS DP, a collaborative programme led by BC and DGC, focused on helping the region become more competitive by facilitating the delivery of higher-level digital skills to students, individuals and employers. It built upon the pre-existing work of the South of Scotland Digital Skills Hub[1] and aimed to help align provision, programmes and curriculum offerings to the current and emerging digital skills needs of students and employers across the region.

4. This report presents details of the DP's work and outlines how partners worked together to address the region's digital skills needs.

What was the Digital Pathfinder responding to?

5. The DP was created to help the SoS become more competitive.

6. The region is different to other parts of Scotland as there are a range of place-based factors which, together, present significant challenges for the Scottish Borders and Dumfries & Galloway (D&G).

7. Some of the challenges faced by the region include:

- low levels of productivity and economic resilience;
- an over reliance on certain sectors for the majority of employment, which include human health activities, retail, land-based industries and social work;
- many of the key sectors within the region are characterised by low wages and there are few higher skilled jobs;
- there are a high number of small businesses with a low appetite for risk;
- there has been less investment in innovation, research and development, compared to the rest of Scotland;
- there are high levels of self-employment, 19% compared to 12% across Scotland;
- between 2024-2033, employment within the region is set to decrease[2] .
- an ageing population, with high levels of youth migration and
- transport and digital connectivity issues.

[1] BC and DGC established the SoS Digital Skills Hub in December 2020. The Hub was created to help the region overcome the challenges posed by the Covid-19 pandemic and to enable the SoS to become more competitive by facilitating the development of higher-level digital skills.
[2] Regional Skills Assessment Borders, January 2021 and Regional Skills Assessment D&G, July 2021.

8. The DP aimed to align with both employer and societal need across the region, and its activities were based upon regional evidence and linked to key regional and national strategies such as the:

    - Regional Economic Strategy for the South of Scotland;
    - South of Scotland Enterprise's Digital Strategy;
    - Digital Economy Business Survey 2021;
    - Digital Economy Maturity Index;
    - Scottish Borders Council's Digital Strategy;
    - D&G's Digital Strategy;
    - Digital Skills Strategy for D&G;
    - Digital exclusion research from Third Sector D&G;
    - National Digital Strategy;
    - Scottish Technology Ecosystem Review;
    - National Strategy for Economic Transformation;
    - Digital Learning and Teaching Strategy for Scotland and the
    - Regional Skills Investment Plan for the South of Scotland.

9. The DP set out to achieve five objectives.

    - To develop a highly skilled and adaptable digital workforce by equipping learners with the digital skills required by employers across the region.
    - To increase diversity and inclusion in the digital skills pool.
    - To increase the number of post-sixteen learners on digital courses.
    - To strengthen employer connections to reinforce digital skill pipelines and strengthen the capacity and capability of college staff.
    - To simplify the digital skills landscape and focus on continuous delivery for learners, employers and the regional economy.

10. To achieve these objectives the DP:

    - provided digital upskilling to college students studying core college courses so that they could transition into employment with the digital skills required by local employers.
    - developed an online events programme in which a diverse range of learners at school, college and university discussed their learning journeys in computing science and cyber security in order to encourage others to move into digital technology roles.
    - developed a digital course recruitment programme to encourage more young people to enhance their digital skills.
    - identified the digital skills needs of local employers in order to modify existing courses and to create new curriculum provision.
    - created a digital skills map which outlines the digital provision available from partners across the region, so that employers know where to source the local digital education, training and development they need.

11. All of the activities undertaken by the DP aligned to one or more of the Pathfinder's aims of securing:

    - Simpler pathways and improved outcomes for learners.
    - Enhanced coherence and sustainability across provision.
    - Alignment of provision against societal and employer needs.

What was working well for your partnership and what features did you want to build on?

12. Prior to the formation of the DP, BC and DGC were working in partnership with their local councils, businesses, universities, enterprise agency, innovation centres and Skills Development Scotland through the **South of Scotland Digital Skills Hub**.

13. The colleges established the Digital Skills Hub in 2020 to help protect employment, promote productivity and support their communities due to the challenges faced by the Covid-19 pandemic. The Hub's work was shaped by its partners and offered a new model of delivery for digital upskilling and retraining in the key and growth sectors of the SoS economy.

14. The first phase of the Hub's work focused on upskilling and reskilling educators and businesses through targeted skills development programmes and through the creation of educational pathways.

15. The Hub was supported by a formal programme board[3] of external stakeholders and an industry advisory group[4] which met on a quarterly basis. These groups provided strategic guidance and helped to develop and support the digital programmes which were delivered.

16. This pre-existing provision and support from external partners, through the Hub's management groups, worked well. These factors helped the colleges and their partners to transition into the DP, as the joint provision, joint aspiration and commitment to collaborative working to support digital skills development across the region was already firmly established.

17. Before the DP could begin however, the colleges actively engaged with their partners to discuss the Pathfinder project, so that all stakeholders understood what this would involve and how this would impact on the Hub's work. The Pathfinder opportunity was welcomed by all Hub partners which meant that the Hub's work seamlessly transitioned into the DP in the autumn of 2022.

[3] The following organisations were members of the Digital Skills Hub's Programme Board: BC; CENSIS; D&G College; D&G Council; Developing the Young Workforce D&G; Digital Health & Care Innovation Centre; Edinburgh Napier University; ScotlandIS; Scottish Borders Chamber of Commerce; Scottish Borders Council; Skills Development Scotland; South of Scotland Enterprise; The Data Lab; Third Sector Dumfries & Galloway; University of Edinburgh and the University of the West of Scotland.

[4] The following organisations were members of the Digital Skills Hub's Industry Advisory Group: Adarma; CGI; Eco Group; BG Technologies; ICEFLO Ltd; Inforgen; IQX; Mesomorphic Ltd; So Connect and Wood Mackenzie.

What inspirational practice, or new ways of working emerged via the pilot?

18. There were a number of key factors which enabled the colleges to deliver the DP. These 'enablers' included:

    - the **support of senior managers** within the colleges. Senior managers provided the authorising environment for the DP, ensured that appropriate colleagues across the colleges dedicated their time and expertise to the Pathfinder's projects and empowered their staff to innovate in the delivery of the DP's activities.
    - having **access to the right partners** who brought a wealth of expertise and skills to the DP's working groups. Without their dedication, support, creativity and time it would have proved difficult to carry out the DP's projects.
    - the **DP's six working groups** which were composed of a range of key stakeholders. These working groups were responsible for taking the DP's objectives and outputs and translating these into operational plans. Once the plans were approved these groups were, in most cases, responsible for supporting the delivery of the plans. As the partners within the working groups had co-developed the DP's action plans there was a level of shared ownership of the DP's activities which grew organically from this process.
    - having **a dedicated project manager** to develop and drive forward the DP's activities.
    - having **access to specialist staff**. Specialist lecturing staff were required to develop the DP's curriculum resources, whilst the communication and marketing leads from the colleges and the SFC provided their expertise to guide the development of the Digital Skills Provision Map (DSPM).
    - having **access to specialist resources**. For the 'Meet the Learner' (MTL) online events programme, filming and an online platform needed to be sourced, which was provided at no cost by Developing the Young Workforce (DYW) Borders, DYW D&G and Scottish Borders Council.

19. During the DP the colleges did things differently.

20. Within the **curriculum developments** the colleges embarked on a process of joint curriculum planning. Within the construction curriculum development, the Heads of Departments at both colleges developed a joint curriculum development plan which identified members of staff from both institutions who would take responsibility for developing aspects of the new curriculum. This shared approach to curriculum planning and design meant that lecturers' development time was reduced and a greater number of curriculum enhancements could take place.

21. Twenty curriculum development projects were delivered as part of the DP. Each project had a laser focus on identifying and then embedding the digital skills required by local, sector employers into the curriculum.

22. To identify employers' digital skills needs the DP's Programme Manager (PM), together with college staff ran four online round table events for businesses in the construction, social care and health sectors. At these events local employers were asked a number of specific questions in order to identify their digital skills needs. At the health and social care events the colleges invited businesses which regularly recruited college students and asked them to identify the digital skills which were missing within their new recruits. As a result of the dialogues with local recruiters, the identified missing skills were embedded into the curriculum and delivered to students.

23. The online event for local construction companies needed to be approached differently due to the lower levels of digitisation within the sector. As a result, this online round table session did not ask local businesses to specify their digital skills needs but instead asked employers to tell the colleges about their business challenges. In this way the colleges could identify which digital skills and tools could help the businesses to address their operational issues. The digital skills which the colleges identified through this process were then embedded into the curriculum and delivered to students.

24. The DP's curriculum developments have acted as a catalyst, helping the staff teams who participated in the DP, to move in a new direction. Lecturing staff, from the departments which were involved in the DP, are now reflecting on what digital means within industry and this has changed their practice and the colleges' provision. As a result of the DP, BC will now offer 3D digital drawing to students on all its construction courses and DGC will be using digital mobile apps with students on construction apprenticeships and full-time courses.

25. The DP's **MTL online events programme** at **Figure 1,** has provided the region's schools, colleges and universities with a new way to market their digital courses to young people. This successful, new programme uses peer advocacy as an approach to encourage learners at school and college to consider moving into digital technology roles.

What innovative outputs can be seen as a result of your pilot project and who will benefit?

26. The DP has developed two innovative products.

27. The DP created **the MTL programme**, an online events programme in which learners at school, college and university discuss their learning journeys in computing science and cyber security. The events act as a market stimulation to help build the digital talent pipeline by encouraging more young people and individuals from neurodiverse and ethnic minority backgrounds to consider moving into digital technology roles by illustrating what the learning journey looks like. Each event focuses on a different stage of the learning journey, starting with school-based provision, then moving on to college and university-based study.

28. During events learners talked about:
    - why they took their course;
    - what and how they learn;
    - what they enjoyed about their courses;
    - why others should think about taking a computing course and
    - what they intend to do after the course.

29. Evaluation has shown that the events can change young peoples' perceptions of training and learning in tech, making them more likely to consider training or learning in digital technologies.

30. This programme will benefit a number of different parties. Young people across the SoS will be able to use the footage from the events to help inform their course choices. Whilst schools, colleges and universities will be able to utilise the online events to promote their digital courses to young people and other students.

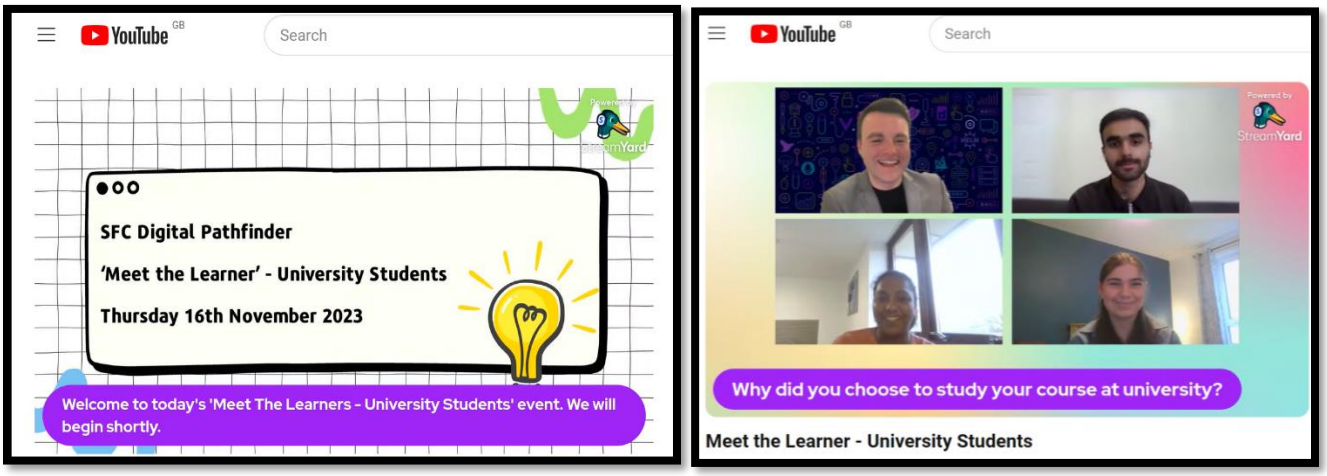

Figure 1 – Meet the Learner – University Students event.

31. Key stakeholders are aware of the MTL programme, due to extensive marketing of the programme in the autumn of 2023.

32. The programme has been so successful that the partners who were involved in the MTL development have committed to its continuation, as they recognise the significant value it has brought to learners across the region.

33. The working group for this area of the DP reconvened in March 2024 to discuss how to sustain the programme. DYW D&G has become the new lead partner and will work closely with DYW Borders to manage the programme moving forward. The university and college members of the group agreed to continue to source student speakers for future events and Scottish Borders Council will support in the delivery of the events. A series of online events is being planned for the autumn of 2024.

34. The DP also developed an interactive Digital Skills Provision Map (DSPM), shown in **Figure 2 and 3**, for employers across the SoS. The map illustrates the digital skills provision provided by the main public, third sector and education sector providers across the region, so that businesses can access local digital education, training and development for their employees.

35. As a result of this development, businesses will be able to find the digital skills training they need far more easily, as the provision is brought together in one place. Employer feedback on the map has been positive, with businesses stating that it is 'very helpful' to have an overview of the support which is available.

36. Other parties who will benefit from the map are the providers who are mentioned on the map, as they will potentially be able to support a greater number of businesses with their digital skills requirements.

37. The key public, third sector and education sector providers are well aware of the map and its benefits as they were involved in its development and helped to shape the resource. These partners, who are the key business support agencies across the region, have featured the map on their respective websites, which not only helps to promote the digital provision to employers but also helps to reinforce the region's digital offer to businesses.

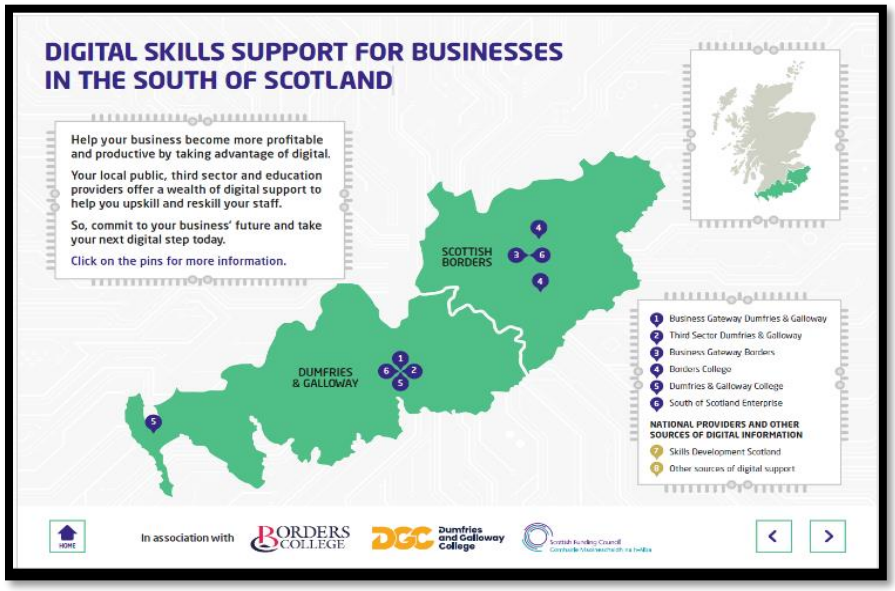

Figure 2 - Digital Skills Provision Map – home page.

38. The DSPM will become a lasting legacy of the DP. It will be updated on an annual basis by BC and DGC. The colleges will contact organisations featured on the map each year requesting updates to their copy and the revised map will then be re-circulated to partners for use with their clients.

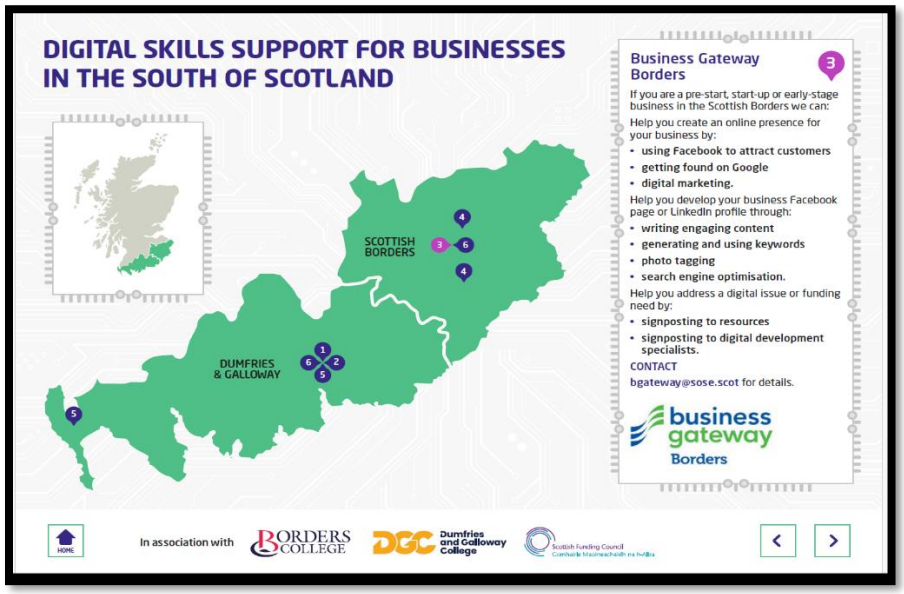

Figure 3 – Digital Skills Provision Map – example of provider entry into the map.

39. Another innovative output relates to the DP's **curriculum developments** which have helped to change the way in which the colleges consider their curriculum developments. The Pathfinder has shown that such developments do not need to focus entirely on developing subject specific knowledge and skills. The DP's focus on embedding the digital skills required by sector employers has added a new dimension to curriculum development. In many instances previous curriculum developments had focused on developing students' generic digital skills, such as how to use a virtual learning environment, but the DP has placed employers' digital skills requirements at the forefront, which in many cases had not been explored before.

40. **Figure 4**, shows students at DGC learning how to use AutoCAD and becoming familiar with CITB's Construction Design and Management app.

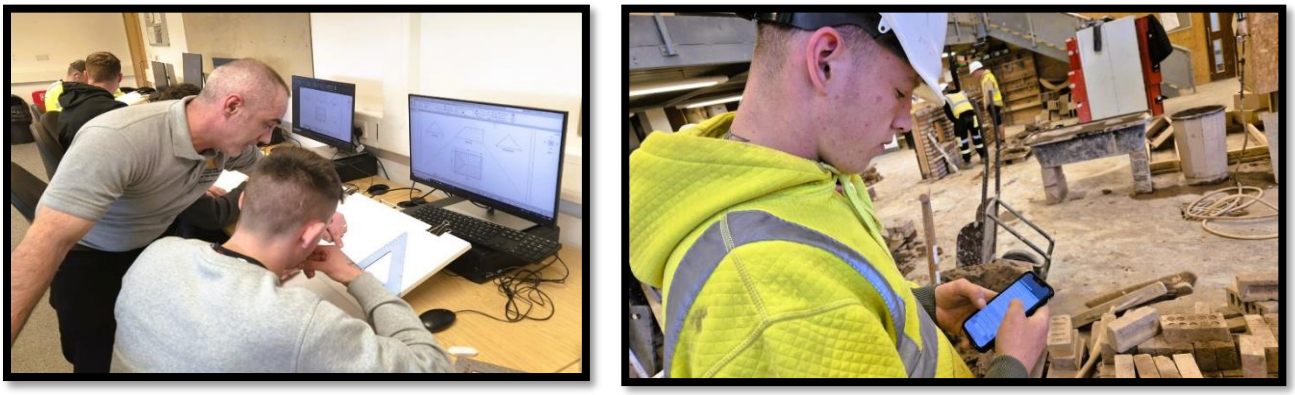

Figure 4 – Construction students enhancing their digital skills at D&G College.

What is your ambition for your learners and what is your future aspiration for the outcomes from your project?

41. The early successes of the DP are outlined in **Figure 5** below.

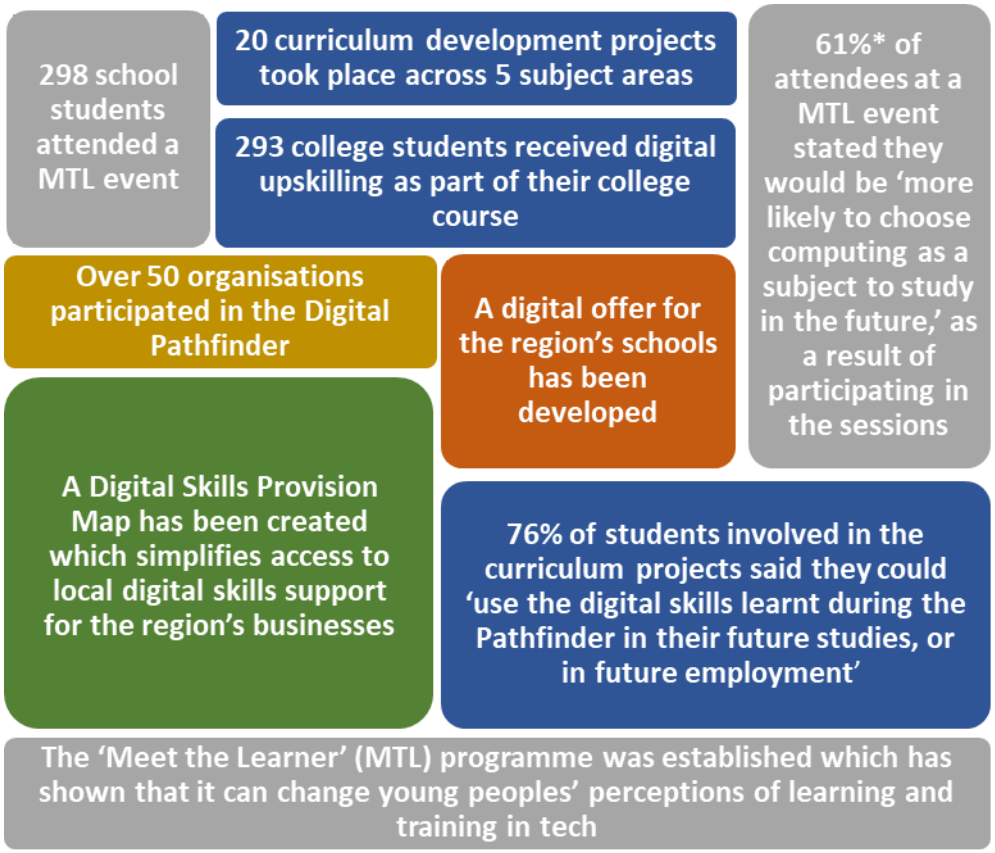

Figure 5 – Summary of the Digital Pathfinder's early achievements.

42. The ambition for students is to develop a comprehensive understanding of digital technologies which enable them to develop skills for life, learning and future employment. Students should understand the basic forms of software, and platforms relevant which may assist their learning or career aspirations. In addition, this may assist them in being able to apply digital solutions to real world problems.

43. A further ambition is that students develop strong problem-solving skills utilising digital technologies. This will enable them to analyse complex problems, identify solutions and be able to implement them effectively.

44. In terms of future aspirations, it is hoped that learners will develop higher levels of confidence in their usage of digital technology which will help them navigate technological choices and enhance their problem-solving skills.

45. A further, future aspiration for this project is that it develops the skills needed by industry in the short and longer term. This will provide future learners with more options, so that they can follow a wider range of career pathways.

46. As a result of the DP there is also an ambition that there will be wider and deeper collaboration between the lecturing staff at both colleges to help develop and share future curriculum resources which will enhance the breadth and quality of provision across the SoS.

47. In terms of regional skills planning, the aspiration is that the DP enables strong partnerships with key stakeholders, including businesses, D&G Council, Scottish Borders Council and both education departments. Continued partnerships will prove vital in helping to ensure that digital skills provision aligns with the needs of the region's workforce and economy.

48. The success of the DP can be gauged in a number of ways. Its initial success has been demonstrated by the following outcomes:

    - that the majority of students who were involved in the DP's curriculum projects recognise that they have developed new digital skills which will help them in their future studies or within future employment.
    - through the development of an events programme which changes young peoples' perceptions of learning and training in tech and encourages young people to consider learning or training in tech.
    - that the majority of the DP's work will be sustained in the years ahead by either the colleges or their regional partners.

49. However, a key measurement of the success of the DP will take place through the monitoring of participation rates in digital qualifications across the region. This will help to identify whether more students are choosing subjects related to the digital economy.

50. In the longer term the colleges anticipate that more young people would be able to access digital qualifications from the senior phase, at SCQF level 5 onwards. It is anticipated that this would address the lack of digital provision within the secondary school system, as currently less than half of the secondary schools across the SoS have a computing teacher.

51. In terms of the region's workforce, if the construction curriculum developments continue at the level provided during the DP, then the colleges anticipate that learners will take the digital skills they have learnt into the workplace, which will help construction businesses digitise more of their operations.

52. If the DSPM is successful in the years ahead then its success could manifest itself in the following ways:

    - that providers who are featured on the map will receive a greater number of enquiries from businesses relating to the digital courses they offer;
    - that providers will receive enquiries from different types of businesses which they have not dealt with before;
    - that more businesses will participate in digital training or development provided by one of the providers featured on the map;
    - that more businesses will receive digital support across the region;

- that more businesses will become digitally engaged and
- that ultimately less businesses will report facing digital challenges.

Conclusion

53. One of the resounding successes of the DP was the delivery of the **curriculum developments** to students studying core college courses in construction, health, social care, hospitality and meta / core skills. In all 293 students were the recipients of the newly enhanced curriculum and as a result 76% (n=162) of learners involved recognised that they had gained new digital skills which would equip them for roles within businesses across the region.

54. In addition, the colleges are proud to see that one of the lasting legacies of the Pathfinder is the development and maintenance of the **DSPM**, which showcases the digital skills provision which is available to businesses and their employees across the region.

55. Another area of strength within the DP was the **level of collaboration between lecturing staff** across both colleges. Curriculum colleagues worked together to identify the digital skills needs of local sector businesses, to establish the gaps in college provision and subsequently developed and shared resources which enhanced digital provision across both institutions.

56. In terms of the key learning points from the DP. We found that the **DP's working groups**, which were established to support the delivery of the Pathfinder worked well. These groups which were comprised of a range of key stakeholders were tasked with creating action plans, which would deliver the DP's outcomes. Workstream partners commented that the process was 'inclusive and clear' and that the discussions and subsequent production of agreed action plans created 'buy-in' and high levels of partner engagement. The plans also provided all parties with clarity on what needed to be achieved and by when.

57. The role of the **project coordinator** was an important factor in the successful delivery of the DP. Managing a fast-paced, multi-faceted project with a wide range of stakeholders required a project lead with strong project management and interpersonal skills in order to motivate partners and to ensure that the DP's projects were delivered on time and to the required standard. This role coupled with an effective **authorising environment** for decision making were critical elements within the DP, so that risks and issues could be managed and mitigated effectively.

58. One of the aspects highlighted by the colleges for policy makers to consider is the way in which colleges are funded. Currently this means that full time provision generates most credits. However, it is felt that consideration should be given to a credit premium for national shortage skills areas, or areas where upskilling of employees is required.

59. In terms of project improvements, the key aspect to address is the timeline. The most significant issue for the DP was timing. Curriculum colleagues advised that an August starting point would have worked more effectively, as the DP's curriculum developments would then have been included within the colleges' planning cycle and would have been delivered in line with curriculum delivery. In the case of the Pathfinder the curriculum developments were not identified and agreed until mid-December 2022; part way through an academic year. This meant that lecturing staff had not planned for and were not expecting to deliver the new curriculum projects. If the Pathfinder had started earlier in the year, the curriculum

developments would have been scheduled in advance and could have been delivered in a more meaningful way.

60. Despite the timing issues the DP demonstrated that a significant number of curriculum developments across multiple curriculum areas could be delivered at pace across two institutions. This approach has been carefully considered by the colleges and there are indications that a similar approach to curriculum development could be adopted by one of the colleges in the future.

Acknowledgements

61. Borders College and Dumfries & Galloway College would like to acknowledge and thank all of their partners who have supported the Digital Pathfinder.

62. The colleges would also like to thank the Scottish Funding Council for its investment in this programme.

Borders Community Action
Border Safeguard Ltd
Broatch Construction
Built Environment – Smarter Transformation
Business Gateway Borders
Business Gateway Dumfries & Galloway
CENSIS
CGI
Cunninghame Housing Association Ltd
David Hardie Engineering
Developing the Young Workforce – Borders
Developing the Young Workforce – Dumfries & Galloway
Digital Construction Skills
Digital Health and Care Innovation Centre
Digital Skills Education
Dryfre Mount Care
Dumfries & Galloway Council
Dundee & Angus College
Eco Group
Edinburgh College
Edinburgh Napier University
Hoddam Contracting Co. Ltd
Iron and Pine
Jobcentre Plus
Mesomorphic Ltd
Morgan Sindall
Nairn Construction
NHS Borders
NHS Dumfries & Galloway
Oberlanders
Police Scotland
Scotland 5G Centre
ScotlandIS
Scottish Borders Council
Scottish Care
Scottish Council for Voluntary Organisations
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