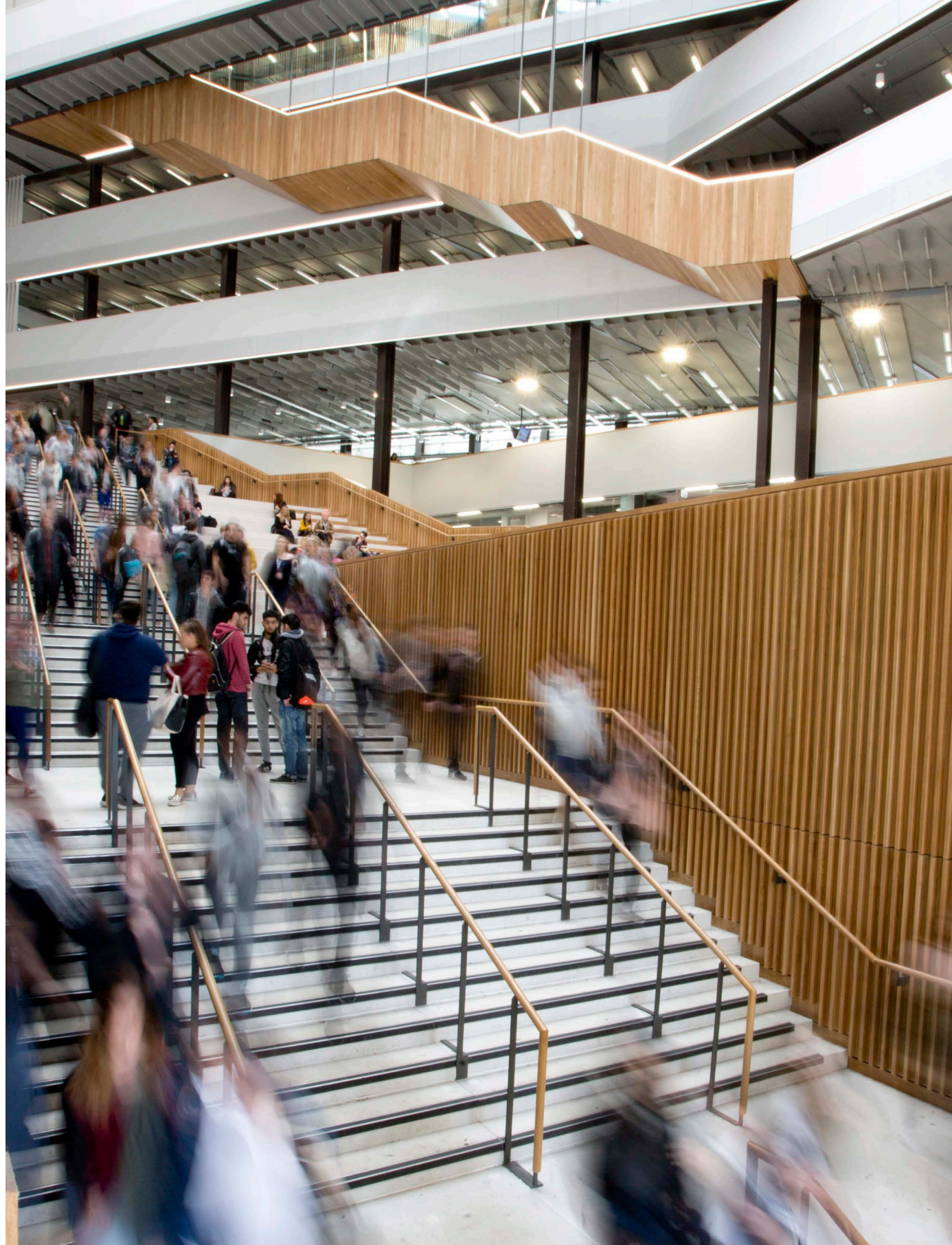




THE CUMBERFORD-LITTLE REPORT

**ONE TERTIARY SYSTEM:
AGILE, COLLABORATIVE, INCLUSIVE**



CONTENTS

Foreword	Page 4
Executive Summary	Page 8
Recommendations	Page 12
What is a 21st Century College for?	Page 16
The Future World of Work and Skills	Page 24
Impact	Page 34
Making Innovation Useful	Page 50
Exporting Scotland to the World	Page 56
System Leadership	Page 64
.....	
<i>Annex A: Evidence Review</i>	<i>Page 76</i>
<i>Annex B: Global Technological & Vocational Training</i>	<i>Page 94</i>

FOREWORD

1. We were delighted to be asked by the Scottish Government to undertake this important review of the economic impact of our colleges. This is a timely exercise, some eight years on from publication of “Putting Learners at the Centre”, the Government’s proposals for profound reform to post-16 learning. In our view, the resultant reforms and regionalisation programme that followed left colleges well placed to face the challenges at the start of the new millennium. The regionalised system created colleges of significant scale and influence, imbuing them with a more influential voice - and enabling their leadership - to have greater impact in regional and national economies.
2. Moreover, colleges now operate in an increasingly coherent strategic policy environment, led by the Government, and its Enterprise and Skills Strategic Board, and characterised by an ambition for greater collaboration across the skills and learning landscape, between schools, colleges, universities, and other providers. Indeed the concept of a national tertiary ecosystem is at the very heart of our thinking, necessitating a much closer alignment of the public agencies, most notably between Skills Development Scotland (SDS) and the Scottish Funding Council (SFC). We therefore welcome the current programme of ‘skills alignment’ between SDS and SFC, and hope that work can be completed quickly. We are mindful that the Government’s Future Skills Action Plan sets a clear direction of travel, whilst highlighting the inherent uncertainties of future labour markets, and the expected response from the supply side; and we welcome the updated Economic Action Plan, in particular, its maintained focus on inclusive growth, and the role of the tertiary education and skills system in supporting employers and increasing productivity. At the same time, we appreciate that whilst the SFC’s Outcome Agreement regime - now in its eighth year of operation - has encouraged a closer alignment between Government priorities and delivery, we still think it can be further improved. And more recent Government programmes such as the Flexible Workforce Development Fund are enabling colleges to move with agility to deliver what industry and business partners want, whilst simultaneously offering a blueprint for a more targeted and impactful way of connecting colleges with employers - particularly at a bedrock SME and micro level.
3. Elsewhere, however, we see systemic constraints to overcome if the Government wants fully to exploit the huge potential that we know colleges can offer. The existing volume target we are required to meet annually has served Scotland well in helping avert the acute spread of youth unemployment in yet another generation in the wake of the banking crash of the mid-2000s. However, it is proving much less suited to the challenges of today, let alone those to come in a more volatile future. And the breadth of ambition signalled in Ministerial

strategic guidance, whilst welcome in recognising colleges' inherent ability to have a positive impact on so many Government priorities, nonetheless risks diffusing clear attention when a more singular focus is increasingly needed to optimise economic impact.

4. The time is right to be considering these and other such constraints, and to develop collaborative responses to the emerging circumstances of this next decade. The world of work and skills continues to change – rapidly, and in ever challenging ways. Those challenges are well rehearsed, both in the evidence supporting the Government's Future Skills Action Plan, and in our own desk-based research in the annex to this Report: demographic change; an increasingly ageing population; structural shifts that have seen a 'hollowing out' of the labour market; digitalisation; and the consequences of the global climate emergency. In addition to all that, we share the view that the UK's departure from the European Union holds the potential to create an economic and social shock of a considerable scale; if there were no other reasons for acting quickly to enable our colleges better to support the economy – and there are many – then Brexit itself would make the case as a clear and present driver of systemic change. We have had this threat very much in mind since our commission from Ministers in late summer last year, and our recommendations are aimed at helping

the college sector help Government to avert some of those likely difficulties

5. We are confident that Ministers recognise the strengths and future potential of all our colleges – their investment of over £600m per year is the most overt expression of that confidence. However our aim in this report is to inspire even greater levels of confidence, so that Ministers release the latent potential we ardently believe exists in the college sector, so that, with peers and partners, we can tackle the challenges - and seize the opportunities - that lie ahead for Scotland. A holistic, coherent, and tertiary response - characterised by agility, flexibility and adaptability - is now more essential than ever if Scotland is to make a step change in delivering its national priorities. In this report, we highlight how colleges can and must play an even more pivotal role in developing our economy. And we begin by examining the most fundamental question for colleges, since so much will flow from a national, shared understanding of the answers we develop, at this, the cusp of the second decade of the 21st Century.
6. This report has been a significant, if welcome, undertaking. We have been fortunate to have had the support of everyone we have engaged, within and outwith the sector. We are very grateful to all those who took the time to let us have submissions, and for the consistently thoughtful and considered nature of those

submissions; colleagues in the sector were also quick to let us have the case studies that appear throughout this report, and we are grateful for those too. We send similar thanks to the business people across Scotland with whom we engaged, and particularly to the Chambers of Commerce in Aberdeen, Edinburgh, and Glasgow, and to the Scottish Chambers of Commerce for ensuring the employer voice was clearly represented, and facilitating direct engagement with a range of industry leaders. We were fortunate too to have the support of Scottish Government economist Annabel

Arbuthnot - her excellent report from the desk-based research she undertook was invaluable in shaping our thinking; and we are indebted to Vicky Underwood at College Development Network for her expert contribution on current export activity among Scotland's colleges, and the capacity and opportunity to do more. Finally, Scottish Ministers from a number of portfolios have been gracious in the time they have given us as this report has developed. We thank Deputy First Minister and Education Secretary, John Swinney, and his colleagues, for their support.



Paul Little
February 2020



Audrey Cumberford
February 2020

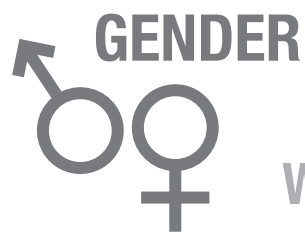
264,858
STUDENTS
IN COLLEGES



9% INCREASE
SINCE LAST YEAR



THE MEDIAN AGE OF A COLLEGE STUDENT IS **22**



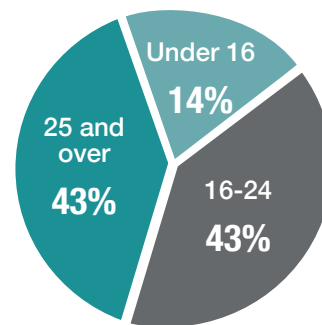
GENDER

MEN

48%

WOMEN

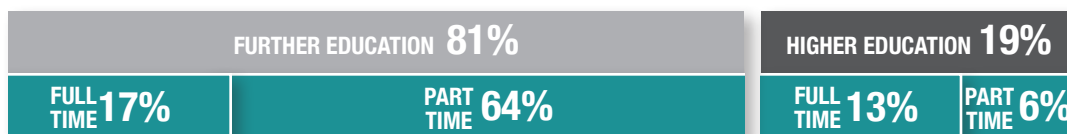
52%



MODE OF ATTENDANCE



LEVEL OF STUDY



OVER **23,000** COURSES PER YEAR

42% OF ALL
FULL TIME COLLEGE
ACTIVITY IS IN HIGHER
EDUCATION

74% OF HIGHER
EDUCATION ENTRANTS
ARE ON HNC OR HND
PROGRAMMES

EXECUTIVE SUMMARY

“...A holistic, coherent, and tertiary response - characterised by agility, flexibility and adaptability - is now more essential than ever if Scotland is to make a step change in delivering its national priorities...”

There are twenty-six colleges in Scotland, twenty-four of which operate within one of thirteen regions. They range north to south, from Orkney to Dumfries, and east to west, from Aberdeen to Stornoway. They comprise large, multi-campus, metropolitan institutions, and those of a smaller, rural nature. They are significant economic contributors in their own right, employing over 14,000 staff, around 60% of whom are women. Together, Scotland's colleges represent a huge national asset in which the Scottish Government invests considerable resource.

However, the economic impact of colleges is perhaps not widely understood, or recognised. But it is very significant. The Scottish Government's investment delivers substantial returns: the boost to GDP that arises from improved labour productivity; increased tax takes as a result of wage premia; 'spillover effects' through improved business competitiveness, and knowledge transfer among employees; and the multiplier effects of increased spending in the economy. More specifically, a single graduation cohort (2015/16) has been calculated by Fraser of Allander as creating a boost to GDP of 0.17% and delivering a present value of £3.4 billion, amounting to £59,000 per graduate. When looking at multiple cohorts over the period 2008/09 - 2015/16 this figure rises to £20.6 billion, or £2.58 billion per year.



95%

OF QUALIFIERS MOVED INTO POSITIVE DESTINATIONS

9 out of 10



OF FULL TIME FURTHER EDUCATION STUDENTS ARE SATISFIED WITH THEIR COLLEGE EXPERIENCE

OVER 10,000 STUDENTS REPORT THAT THEIR TIME AT COLLEGE HAS HELPED THEM DEVELOP THE KNOWLEDGE AND SKILLS FOR THE WORKPLACE

COLLEGES DELIVER OVER A QUARTER OF ALL HIGHER EDUCATION IN SCOTLAND

OVER 1/4

OF SCHOOL LEAVERS GO INTO FURTHER EDUCATION

Moreover, colleges offer an enormous range of provision, supporting new entrants to – and the existing workforce in – all of Scotland’s priority business sectors. Our learners – increasing again in recent years, and numbering nearly 265,000 in the latest year for which Scottish Funding Council data is available (2018/19), are a diverse community: around 17% are under 16, and getting their first taste of work-based learning; nearly 4 in 10 aged 16-24, and the majority over 25. Nearly 1 in 3 study on a part-time basis and 95% of qualifiers move into a positive destination post-college.

Colleges are inherently connected institutions: we work closely with schools, developing Scotland’s young workforce; and we provide an invaluable route to university – nearly 10,000 of our students moving there in 2017/18; indeed, colleges deliver over a quarter of all higher education in Scotland.

Colleges are diverse, and connected to the communities we serve: 31% of students come from Scotland’s most disadvantaged backgrounds; 14% have a disclosed disability; 7% of enrolments are from learners with black and minority ethnic backgrounds; and there are now over 3,000 care experienced students in our colleges.

And, crucially, students are satisfied with their college experience: 93% of full-time learners expressed that view in the latest survey.

26% OF ALL SCOTTISH
DOMICILED FIRST-DEGREE
ENTRANTS TO UNIVERSITY
WENT VIA COLLEGE

OVER A THIRD
OF STUDENTS ARE FROM
SCOTLAND’S LOWEST
SOCIO-ECONOMIC
BACKGROUNDS

40% OF STUDENTS FROM
THE LOWEST SOCIO-ECONOMIC
BACKGROUNDS PROGRESS TO
UNIVERSITY
THROUGH COLLEGE



14% OF STUDENTS HAVE A **DISCLOSED DISABILITY**,
OF WHICH DYSLEXIA IS THE MOST COMMONLY REPORTED

189 NATIONALITIES
 ARE REPRESENTED
IN COLLEGES

OVER 3000
CARE-EXPERIENCE STUDENTS
WERE ENROLLED IN COLLEGES

7% OF ENROLMENTS
WERE STUDENTS FROM
BLACK MINORITY
ETHNIC BACKGROUNDS

OVER A QUARTER
OF STUDENTS ARE ENROLLED
IN STEM SUBJECTS
IN SCOTTISH COLLEGES

This report, though, comes at a crucial time. Public finances are tighter than ever, and the UK has left the European Union with as yet unknown consequences. The Scottish Government and its Enterprise and Skills Strategic Board have identified improving business productivity as a priority, and quite properly want to see all publicly funded bodies align with that ambition. Notwithstanding the strengths of the current college system, we are clear that it can do more to engage with Scottish business of all types – particularly with our ‘bedrock’ small and medium enterprises, and our start-ups and micro businesses, to develop the skills and capacity that will help them become more competitive and to grow. Doing so with this community, which represents the vast majority of Scotland’s business base, would be an invaluable contribution to the Government’s economic and social ambitions.

In our judgement though, we are not, as yet, maximising the potential of our colleges to support business growth. We contend this is the result of a series of policy and operating measures that, while appropriate for their time,

have now become outdated, and are acting as constraints; in addition, we think that the wider learning and skills system of which colleges are a fundamental part, is itself insufficiently aligned to deliver the results the Government wants – in this respect, we echo Professor Sir Anton Muscatelli’s call in his recent report on driving innovation in Scotland - for a “national mission”.

In this report we seek both to identify constraints besetting the sector, and identify the agencies that should consider how best to release them, scoping and developing appropriate solutions. We have not sought to identify those solutions ourselves because we are clear that should be a collective effort. The college sector should absolutely be a central player in this process, and we expect our colleagues to embrace the opportunity with enthusiasm.

In the opening paragraphs of this summary, we identify the substantial economic impact colleges already have. We see that as the base from which to grow: the recommendations that follow aim to create the conditions for that to happen.

RECOMMENDATIONS

“...Together, Scotland’s colleges represent a huge national asset in which the Scottish Government invests considerable resource...”

Recommendation 1

Ministers should endorse a compelling narrative setting out the purpose of a 21st college that we propose on page 22, and:

- noting our emphasis on lifetime learning and business engagement, promote it consistently across Government, irrespective of Portfolio, to develop a clear understanding across civic Scotland of what a college is for;
- use it to establish short, multi-year, Ministerial guidance, focused on core priorities in support of the purpose;
- develop a transparent and accessible performance regime directly related to the purpose. This should be done by the Scottish Funding Council (SFC), working with the sector and other stakeholders. In the context of that work, we are clear the existing target for colleges, focusing on volume, should be replaced by a target that focuses clearly on the impact we want colleges to make;
- to allow colleges better to support business, particularly in pursuit of productivity gains, and inclusive growth, and given the priority of establishing a coherent, flexible, and efficient post-school tertiary system, reconsider the current imbalance between the SFC's college and university strategic funds; and
- again given the ambition for a coherent tertiary system, reconsider the historical balance between the SFC's university and college 'core' funding streams to ensure the allocation of resource is appropriate for today's and tomorrow's economic landscape.

Recommendation 2

Consistent with the purpose we propose for a 21st century college, **Ministers** make supporting business growth a top priority for colleges. To this end, they should:

- ask SG, SFC, the enterprise agencies (inc SoSEP) to work with the college sector - on a 'Team Scotland' basis - to develop mechanisms that incentivise effective and purposeful college/employer engagement; this work should be business centred, and avoid complexity and bureaucracy; in addition, given the integral nature of colleges to business development, growth and productivity, and as we move closer to a knowledge-based economy where the importance of place is becoming more acute, Ministers should ask SFC to consider a strategic alignment between colleges and SDS, SE, HIE, and SoSEP so as to improve joint regional planning, and the development of joint teams to enable regional collaborations with colleges (and universities). This approach would be particularly helpful for PACE related activities, and in those areas where we know we have large scale and critical skills gaps;
- ask the enterprise agencies to work with colleges to explore how their relationship could be strengthened further, using a regional model of business-college/enterprise agency engagement, avoiding cluttering the landscape in which businesses have to navigate;
- ensure the college sector plays a full part in realising the national ambition of a single portal for businesses. This will help colleges properly understand - and contribute to - the content of the portal, while ensuring college support is clearly identified as a part of the resource available to employers;

- ask the Scottish Qualifications Authority (SQA) to work with SFC, the Scottish Credit and Qualifications Framework (SCQF), and the sector to review its post-16 portfolio against the tests of the new college purpose. This should focus on the need to meet the tests of industry-related currency, credibility, and agility, and accommodating employers' wish for short, focused or bite-sized learning interventions. SQA should also consider, with colleges, and SCQF, how they might secure the freedom to design and develop their own qualifications. In addition, and again with colleges, and others where identified below, SQA should investigate:
 - o how colleges might secure wider recognition for the value of accreditation provided by a range of other awarding bodies, and industry;
 - o (with SFC) how to enhance the use of college certified qualifications, and more use of 'micro-credentials';
 - o how Ministers can better promote the value of Higher National Qualifications for direct entry into employment;
 - o the development of a two-year college degree, based on the Higher National Diploma, with additional work-placement content;
- ask Skills Development Scotland and the Scottish Funding Council, as part of the work undertaken by the two bodies on skills alignment, to discuss with colleges the opportunities for greater college participation in each stage of the 'Apprenticeship Family'
- in line with Scottish Government international ambitions, and our status as "A Trading Nation", and in the light of the experience and success some colleges have enjoyed in exporting, ask SDI to consider wider opportunities for Scottish colleges' participation in international visits and trade missions, along with invitations to participate in inward trade missions;
- ask SFC to work with the sector and business representatives to ensure its Outcome Agreements define effective and suitable impact measures for business engagement. SFC should also work with Education Scotland to ensure its quality assurance regime for colleges supports these measures;
- expand the Flexible Workforce Development Fund, allowing colleges to engage and support SMEs and micro- and family-businesses in enhancing productivity;
- Our final recommendation for Scottish Ministers draws on the benefits that our other proposals may generate. Our theme is one of identifying opportunities to reduce unnecessary bureaucratic constraints and central controls that characterise the current system and which, in our judgement, hold colleges back from making the fullest possible contribution to inclusive growth. We invite Ministers to consider if the more coherent tertiary system we propose allows scope for asking the Office for National Statistics (ONS) to revisit its current classification of Scotland's colleges. Ahead of that process, the Scottish Government should undertake a full analysis of the basis for the ONS decision (now several years old) and compare the position at that stage with the type of regime we propose.

Recommendation 3

The **Scottish Funding Council (SFC)** should:

- work with the college sector, to reform its current funding model, so as directly to incentivise colleges' agility and speed of response to employer demand. The new model should be transparent, and readily understood, and introduced as quickly as possible, no later than academic year 2021/22;
- working with colleges and universities, establish a means of learner-focused articulation from college to university. This should promote a more coherent tertiary system, incentivising collaboration, co-location, co-funding, and co-investment. This work should also address solutions to the difficulties in the south of Scotland arising from diseconomies of scale resulting from relatively small learner cohorts; the costs and challenges inherent in travel in rural communities; and the relatively low SIMD-defined areas of disadvantage;
- protect the essential diversity of the sector - which is a crucial strength – by considering how best to direct and maximise technological investment in which learner-focused provision and data innovation can be freely shared across and between regions. The SFC should consider the benefits and outcomes associated within a networked system of this kind: this should include consideration of the 'hub models' operating in the south of Scotland, UHI, and currently being explored in the Ayrshire region - which themselves help to address, but which do not yet fully resolve, the difficulties identified for the south of Scotland in the preceding bullet;
- explore how to promote collaborative solutions in considering future capital investment projects; and
- building on existing resources, explore the possibilities of a 'staff college' for the sector to develop the necessary cross-silo leadership we identify as necessary for the years ahead.

Finally, we hope it is apparent from what we say in each of the recommendations above we consider it essential for **all actors** in Scotland's tertiary sector to engage fully with the development of the solutions we propose.

WHAT IS A 21ST CENTURY COLLEGE FOR?

“...skills mastery, underpinned by technological and professional education...we must insist on excellence rather than competence...”

Colleges across Scotland are now remarkably agile tertiary education and training institutions. They are much enhanced in their scale, scope and stature. Increasingly demand-led they play pivotal civic anchor roles within their respective regional, rural or metropolitan economies. Within Scotland's tertiary ecosystem, working with and alongside schools and universities, and delivering both access and degree provision - and all points between - colleges are valued for their flexible, adaptive and inclusive approach. We think they are a Scottish treasure, whose diversity is now characterised by collaboration rather than competition.

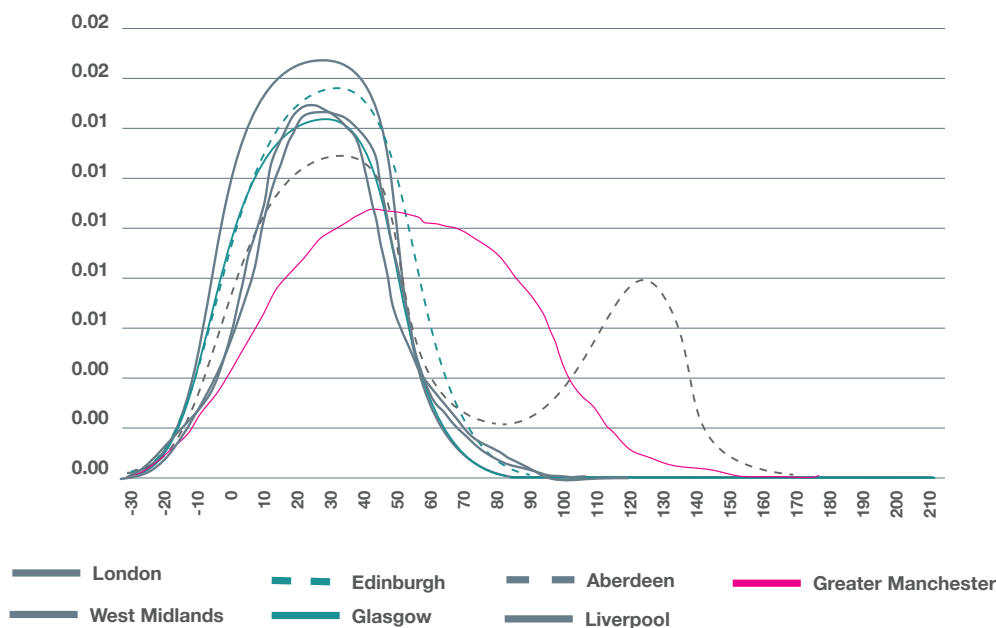
We know from experience that college leaders and their staff are committed to make an impact from the point of engagement, and that, in doing so, they effect transformation across a diverse continuum from individuals and communities to family businesses and large corporates.

Colleges have a particular – and extraordinarily important – USP through their connections to Scotland's SME and micro-business communities, the bedrock of our economy, and including many businesses in which a boost to average levels of productivity would see them move up the value chain. A recent report by Fraser of Allander on the Glasgow economy explores this point more fully (see graph below).

Staffed by dual industry and education professionals, respected within both their own local communities and national trade bodies, our colleges prioritise skills mastery, underpinned by the technological and professional education of the individual student. College pedagogy emphasises the 'doing', instilling competence and proficiency in our learners.

Today's colleges have an incredibly broad curriculum offer, extending from the senior phase of schools to Foundation Apprenticeships,

Labour productivity distributions, city regions (GVA per worker) 2014



Source: Fraser of Allander Institute, "Understanding the skills opportunity for today & tomorrow in Glasgow", September 2019

SVQ's, partnerships with the 3rd sector (such as the Princes Trust 'Get Into' programmes), access pathways, SCQF and credentialised accreditation, 'train the trainer', and national awards - through to higher vocational qualifications including Modern and Graduate apprenticeships, HNCs and HNDs, Professional Development Awards, professional chartered qualifications, and technical and honours degrees. Some institutions offer post-graduate and chartered professional qualifications and a few offer Masters Degrees and, among the academic partners forming the University of the Highlands and Islands, Doctorate qualifications. Such a broad and diverse provision is manifest in over twenty-three thousand courses across the sector - an illustration of the sheer breadth and diversity of current college provision.

Across Europe, similar economic challenges to those facing the UK - and Scotland - are driving policy makers to re-evaluate the importance of colleges as their primary expert providers of skills, vital to productivity and the economy in general. Their technological, vocational, and professional education is also crucial, whether exemplified in the Augar report in England; the introduction of outcome agreements in the Republic of Ireland or the participation of Dutch, Basque, and Finnish representatives in the appreciative enquires conducted by the UK's Independent Commission on the College of the Future, with which we are pleased to connect at both Commission and executive levels. In short, the untapped potential of colleges is increasingly being brought to the fore, often in similar discussions of value for money tertiary education.

Colleges in Scotland are nowadays metropolitan, regional, and rural powerhouses for pre-employment and technological education, sector-specific training, and in-

work reskilling and upskilling; they are beacons for social and human capital development and inward investment; they are bulwarks for social mobility, for continuing education and for lifetime learning. In Scotland, they are an essential lifeline to help some of the most vulnerable, fragile, and marginalised in society onto pathways, developing the social infrastructure to move confidently into the labour market, transforming life chances and improving life choices, safeguarding employment, and stimulating significant inclusive economic growth. Our colleges are major economic catalysts in city regions and in rural and island development, responding time and again with bespoke courses to address acute industry needs, whilst also being the champions of STEM education and capacity building for 'the internet of things' to help individuals and communities to flourish in an evolving digital era of industry 4.0. Colleges are often the first responders when firms collapse leaving widespread redundancies, rapidly putting in place measures to re-train, upskill, and re-energise individuals and their communities to move forward to new opportunities. What motivates many of our staff is that their colleges are the linchpins for developing the social capital for those of all ability and all ages to engage in purposeful, practical, and productive learning - for the many, not the few.

Imbued with such a multiplicity of roles and the inherent magnitude of responsibility it is little wonder therefore that commentators find it difficult to describe what colleges do and then translate this intrinsic public value into a shared compelling narrative. That is a fundamental aim of our report. We want to reach a clear definition of what a 21st Century college is for. In doing so, we hope to create the opportunity for a fresh approach to thinking about the impact

we want from Scottish colleges, and how they can be measured, funded, and evaluated in a way that supports those goals. This is a vital element of a new narrative for 21st century colleges, for which we also need:

- an unambiguous commitment from across the Scottish Government to a system that provides *opportunities for lifetime learning*;
- a yet more coherent, and better connected *tertiary system for Scotland*, in which colleges are centre stage partners, celebrated and resourced as such;
- *to protect diversity*, avoiding a one size fits all approach. Public investment in our critical

tertiary infrastructure – IT renewal, harnessing emerging technologies and optimising our capital estate – will yield higher returns when we promote an approach that optimises the strengths of all partners within that system;

- a diverse range of institutions, with centres of excellence pooling resource and expertise and acting as hubs to enhance the productivity of area-based economic clusters of private and public sector partnerships. The model developed in the south of Scotland, illustrated in the case study overleaf, is an excellent example of the use of technology to support learners and employers.



Case Study 1

SOUTH OF SCOTLAND SKILLS AND LEARNING NETWORK

The South of Scotland faces a number of economic difficulties: an ageing population; young people moving away from the region; a geography that challenges infrastructure, including digital connectivity; low GDP per-head, with low productivity; and sectors with traditionally low wages and fewer higher skilled jobs, whose business base is dominated by micro and small businesses.

In addition, the South's economy is shaped differently from the rest of Scotland, with rurality undoubtedly a barrier to business-led inclusive job growth. Rural economies, quite simply, do not enjoy the agglomeration economies available to city-regions. Similarly, our challenges and opportunities differ from other rural parts of Scotland such as the Highlands and Islands.

The South of Scotland Skills and Learning Network (SSSLN) has developed from collaboration between Borders and Dumfries and Galloway Colleges. Supported by the South of Scotland Economic Partnership, our major share of a £6.6 million strategic investment fund allows the SSSLN to make a sustained contribution to both the South of Scotland's Regional Skills Development Plan (2019/2020) and the Scottish Government's ambitions for a Smarter Scotland.

Interconnected specialist hub centres hosted in Dumfries within The Henry

Duncan Building Innovation & Research Centre include "The Digital Healthcare Centre" and the "The Green Energy Centre", and a third hub in Stranraer in the form of our "STEM Centre".

Meanwhile, in the Borders, there are hubs in Galashiels, and in Hawick. The accompanying digital spokes are deployed progressively throughout the region, throwing open the network to new technologies and changing the nature and significance of learning and development as a principal driver of regional economic growth. The SSSLN will play a significant role increasing the South's level of competitiveness and in tackling inequality – the two pillars of the Scottish Government's economic strategy.

As connectivity improves and broadens, our entire digital learning portfolio will be available to home learners, allowing learning to be much more accessible, in places and at the times most convenient to learners and employers.

Future economies will be knowledge driven, and effective access to relevant learning is central in managing the challenges ahead. Our particular suite of learning opportunities will focus initially on current regional growth priorities - care, renewable energy, engineering, and construction. Using our specialist hub and digital spokes, the initial portfolio will deliver the CREST sustainable bronze award for school pupils aged 11 and above. We will deliver SCQF level 6 Reablement, and SCQF level 7 Electrical Engineering programmes for a range of full- and part-time learners

and business partners. Moreover, our enhanced engagement with individuals and employers through a more systematic regional approach to labour market intelligence will create a wider and even more responsive approach to skills alignment and development.

The repurposing and future proofing of existing physical structures, modified to use green energy sources, and the consequent reduction in public and private transport to get to learning opportunities, underscores the project's commitment to the Scottish Government's Green New Deal and broader climate change strategies. And since economic wellbeing cuts across most of the Scottish Government's strategic objectives, widening access to future-looking learning opportunities will inevitably increase individual, community and regional wealth. The clear economic benefits associated with the South of Scotland Skills and Learning Network project can be successful only through the continued support of a large number of business and other partners. But being connected, especially in such a diverse rural area, has other potential individual and community benefits. We look forward to the added value that will undoubtedly derive as the project matures over time.



- institutions inspired and enabled by this new tertiary system who consistently pursue excellence. We must make better use of skills competitions, more structured industrial placements and our tertiary alumni, both nationally and internationally, to open doors for our students and their economic partners. Indeed, we are taken by the “Key Success Factors for Skills Innovation” identified by the Royal Society for the Encouragement of Arts, Manufactures and Commerce (www.thersa.org) in its publication “*Adopting Global Skills Innovation for the UK*, Sharif & Dent, May 2019”. The authors specifically identify learning and innovation as a key success factor, and point to the potential of the World Skills competitions in this respect – and Scotland has historically punched well above its weight in WorldSkills. Despite that success, it is difficult to say WorldSkills enjoys the same status in Scotland apparent in some of our European competitors, as illustrated in the images opposite. In addition, we must insist on **excellence rather than competence** within the content, assessment, and currency of technical and professional qualifications. SQA and QAA should work more closely together and with a greater sense of urgency to ensure their portfolios reflect what the economy needs, both in the short- and medium-terms and thereby further enable the agility and flexibility of colleges.
- *collective system leadership* that, galvanised by the Government’s National Priorities, also supports the medium- and long-term priorities for our colleges, valuing their contribution alongside peers in Team Scotland. This leads directly to an underpinning theme, also at the core of Professor Sir Anton Muscatelli’s report on “Driving Innovation in Scotland”, of a *collaborative commitment to a national mission for colleges for Scotland*.

If these are the necessary criteria to allow our colleges to flourish in dynamically changing operating environments, what is their purpose in this exponentially changing world? In the explicit expectation that this needs to be a collective and transparent effort across Government and all its public agencies, as well as local authorities, schools and universities, third sector partners, and, critically, Scotland’s employers, we think it leads to the following core purposes for our colleges which places employer support as their cornerstone.

Colleges provide world class lifetime learning, training and high quality business support, which:

- **shapes businesses, through value adding, symbiotic relationships that boost productivity and deliver for core economic sectors;**
- **delivers transformative technological and professional education, pre-employment qualifications, up- and re-skilling learners throughout a lifetime both at work, and beyond; and high quality cost effective public higher education, articulating seamlessly with the university offer, whilst also delivering accelerated college degrees;**
- **connects with, and builds resilience in, the communities in which they’re anchored, working in deep partnerships to minimise disadvantage and helping individuals to remain economically active; and**
- **is part of a highly connected tertiary system, whose unique contributions are accorded equal value, and where colleges, alongside schools, universities, the third sector, and other actors, support all school leavers and older learners as they progress onwards on a coherent journey to - and subsequently through - work.**



THE FUTURE WORLD OF WORK AND SKILLS: VOLATILE, UNCERTAIN, COMPLEX, AND AMBIGUOUS

*“...Multiple jobs, multiple employers, multiple careers
and longer lifespans...”*

If the future is no longer what it used to be, the future of work and skills will certainly be different. There are many elements of this 'VUCA', and we set out below those we think are most important:

Pressures on return on investment will increase... This will drive us to look at how we can leverage more value for our investment in the tertiary skills system and wider education system, including our schools, requiring an increased focus on outcomes and impact, and a need to determine the optimal balance of resource investment to maximise our return.

A growing impact of technology at an exponential rate which will be much faster than we can keep up with... directly impacting on the 'nature' of our education and training provision on our students and staff: on how both 'learn how to learn', and on how and what we teach, along with the profound impacts on work, industry and metropolitan, regional, rural and island communities.

Shocks and acute disruption to the economy will demand a rapid, agile response to tackle specific labour market difficulties, minimise skills gaps and mitigate shortages at regional and local levels, as well as nationally. Colleges must have the flexibility to respond to that, within their reinforced national role

Data driven learning improving results ...understanding and identifying the most appropriate interventions and their timing; and focusing on the pre-requisites for positive student outcomes such as retention, attainment, and value-adding destinations. Moreover, students will access and use data in ways that allow them to co-create and navigate more personalised learning journeys. Data analytics will increasingly be used to predict outcomes, increase efficiencies and deliver success.

Real-time access to education and learning... beyond MOOCs, BigTech such as Amazon, Google, YouTube, and Microsoft are offering huge amounts of free access to chunks of learning, and will increasingly offer digital personalisation. A new generation of "education consumers", will be prepared to shop around to address their specific requirements, demanding shorter learning interventions, increasingly interdisciplinary, and work-integrated – supported seamlessly with digital infrastructure. Above all, there will be a premium on increasing our focus on personalisation, funding, technology-enabled interventions, and learner feedback.

A deeper understanding that ultimately learning will remain intrinsically a social activity... albeit increasingly undertaken in micro-chunks, validated with micro credentials, with much less demand for protracted qualifications - and much more demand for better focused 'unbundled' learning opportunities, delivering valued qualifications and responsive accredited provision that plug skills gaps and tailor upskilling/reskilling for those in a continuum of work.

An imperative to remove 'friction' within the system... since improved returns on investment will be paramount, alongside an experience that exceed the expectations of students and employers, we must relentlessly tackle bureaucracy, optimising business processes to remove friction and duplication. This will apply as much to how colleges themselves operate, as to the tertiary system itself. On the latter, our consultation consistently highlighted what colleges felt was unnecessary duplication in SFC and SDS funding, for example, in respect to the present and future of the apprenticeship programmes. Additionally, we consider it curious that, over two decades on from the establishment of a joint Funding Council working

for both colleges and universities – and in an environment where a border-free tertiary system is so often cited as the goal - the respective funding streams, in all their forms, remain so starkly bifurcated.

Employers to demand micro-credentialisation and bespoke industry relevant qualifications...

with the corresponding potential to diminish the influence of our existing accreditation bodies. It is essential that colleges' capacity to respond to employer demands – which arrive in every shape and size – is not hampered by a national qualification framework that cannot respond similarly rapidly to changing demand.

An ageing population that is likely to mean a huge demand for elder care as well as social care...

combined with longer working lives, driving demand for both flexible employment practices and constant access to education and skills training.

Multiple jobs, multiple employers, multiple careers and longer lifespans...

with fundamental implications for the college curriculum, as well as creating opportunities for people constantly to enter and rely on learning throughout a lifetime. Mid-career and later-career learning, skills development, 'expertise enhancement' are all essential to meet the demands now and in the longer term for enhanced productivity and economic prosperity;

Let us consider more deeply the environment in which these factors will take shape. Change has been superseded by disruption, and its pace has accelerated to an exponential level. The financial crisis of the first decade of the 21st Century has been eclipsed by global political and economic threats looming over the next decade. Volatility, uncertainty, complexity, and ambiguity (VUCA) define the environment in

which the 4th Industrial Revolution (4IR) takes place. Difficult transitions and transformations lie ahead for those currently in employment, and employers will similarly be challenged by the expectations and values of the next generation of workers, as generations Zulu and Alpha come rapidly into the workplace.

Reflecting at a macro level on our evolving 'upside down' world we note that debt has shifted from the private sector to the public sector; our middle class take the levels of drink and drugs once taken by our working class; and, individually, we habitually (or increasingly) surround ourselves with social media echo chambers offering comforting lies rather than inconvenient truths. To mitigate against the very real lose-lose scenario of chronic talent shortages, stubborn skills gaps, mass unemployment, entrenched inequality, polarised society - with the underlying risk of social unrest - Government and college leaders will have to adopt a transformative approach to upskilling, reskilling, lifetime learning, human capital development and the consideration of personal learning accounts and social contracts.

Nowadays the future of work and skills is impacted less and less by the vagaries of a global economy and more and more by digital, artificial intelligence (AI) and gig economies. Sensible reflection on the changing nature of jobs and skills has been bedevilled by sensationalist predictions of the impact of technological disruption, cloud technology, super intelligence, the internet of things, 3D printing, Big Data and machine learning.

Moreover the prevalent fear that migrants are displacing the jobs of local workers will in time be replaced by the twin new fears of technological unemployment from robots and 'super intelligence', rendering us what the



influential futurist Yuval Harari (2018) describes as the “Useless Class”. In such a VUCA future our personal relevance is further diminished as organisations ultimately compete less and less with other organisations, and instead, network competes with network. Co-creating and collaborating more than ever, organisations will, in the future, have to shift their competitive focus from getting good at being better to getting good at being different. Achieving such competitive diversity will require a mindset of corporate growth, and greater use of disruptive thinking.

Reports on the Changing Nature of Work (World Bank 2019), the Future of Jobs (World Economic Forum 2018/19) and Towards a Reskilling Revelation (WEF 2019), are all clear that automation will ultimately eliminate routine, codifiable low skill work, whilst also bringing economic prosperity, societal progress and flourishing individuals, augmented by emerging technology and not simply replaced by it. Indeed backcasting through economic history - especially from the industrial era of the 18th century – repeatedly highlights that alarmists have regularly been scaremongering that machines are after our jobs.

These siren calls have limited or no basis in reality. For example, in the last two decades the World Bank has estimated that almost half of the total increasing employment – some 23M jobs across Europe – have been catalysed from technology absorption, whilst the growth of digital technologies has also enabled organisations to scale up quickly without mass; to transform both traditional production patterns and service delivery; to spawn new business models; and to enter global markets where a physical presence is no longer a prerequisite. Harnessing technology has also supported more

business clusters especially in rural areas and created many more accessible innovation hubs.

The rise of the robots has been particularly exaggerated. The World Bank Report (2019), for example, has identified that whilst this year 1.4m new individual robots will be in operation, the worldwide total is still only 2.6m, with two thirds of these robots confined to the automotive, electronic and metal machinery industries. Furthermore it is ironic to reflect that the highest robot density per worker is actually found in the high productivity, high employment economies of Germany, South Korea and Singapore.

Calling out this ‘*deluge of technobabble*’ in a Robot Age, acclaimed economist Roger Bootle (2019) warns against “*immersing yourself in a sea of waffle, wonder and worship at the altar of technology*” to avoid “*drowning in the onrush of loose language, flabby concepts, crude extrapolation, impenetrable jargon and lack of perspective, all wrapped up in an aura of supposed inevitability*”. Reassuringly Bootle offers five alternative visions of the changing nature of work which range from: ‘Nothing different, radically bad, radically good, catastrophic, to the key to eternal life’.

Similarly Mathew Taylor CEO of the Royal Society of Arts (RSA) has distilled his future scenarios of work (2019) into four possible futures, ranging again from the limited automation of an Exodus economy from big city capitalism; to a Precision economy where the workforce is under hyper-surveillance; to Tech abundance for the masses and the dizzying technological change and the profound wealth for the few of a Big Tech economy; to the Nirvana of contained automation, responsible stewardship and workers flourishing in an empathy economy.

Taylor also reminds us to avoid the lure of indulging in a superficial debate on automation, focusing us instead on a future vision of what he describes as “good work” for all, thereby avoiding rising inequality, stagnant wages, discrimination, bias by algorithm and ever deepening regional divisions across the UK. His RSA report (2019) calls for a comprehensive “game plan” to promote economic security through a sovereign wealth fund; piloting a universal basic income to strengthen the worker’s voice; and for the professionalisation and occupational licensing of low skills jobs to enhance their status. Interestingly, he argues for workers to update their skills through “personal learning accounts” with an entitlement for every citizen, including the self-employed.

Many of these challenges facing Scottish workplaces are already on the radar of the Scottish Government. There have indeed been improvements in the Scottish labour market in recent years in terms of pay, and qualification levels have been steadily improving and are higher than levels in the UK as a whole. However, Scotland continues to have stubbornly lower rates of in-work progression and lower rates of productivity than the UK as a whole.

The Trade Union Education Centre (TUEC) at City of Glasgow College (CoGC) working with Trade Unions and employers across Scotland has also identified that the increase in job insecurity and the gig economy, along with continuous change at work has led to a corresponding increase in the demand for ‘employability’ skills, including those in advanced communication, job search and interview, and basic IT. They also report that whilst union membership continues to grow albeit at a relatively slow pace, trade unions have taken a more collaborative organisational approach

which in turn has helped to facilitate increased worker voice.

More globally, Yuval Harari (2018) contends that the technological disruption of AI won’t simply be a single watershed event, after which the workplace will return to a new equilibrium. Instead, he forecasts that workplaces will be increasingly volatile, impacted by what he describes as a “cascade of even bigger disruptions.” In such a VUCA environment, and to remain relevant and to preserve mental wellbeing, Harari contends that employees will have to more routinely ‘reinvent’ themselves. Mental resilience will therefore be challenged by seemingly endless upheavals as individuals struggle to come to terms with a possible post-work economy, where the extremes of worker exploitation could instead be replaced by worker irrelevance.

Envisaging such an apocalyptic work environment, Harari however gives more cause for optimism, explaining that *“technology is never deterministic and the fact that something can be done does not mean it must be done.”* Significantly he particularly highlights Governments’ pivotal role in blocking or slowing down the pace of technological adoption through: regulation; the provision of a safety net of subsidized lifelong learning; and variants of the Scandinavian model of ‘protect workers not jobs’. Failing in their regulatory responsibility, Governments could inadvertently create a post work society, which Harari pointedly contrasts of *“rich super humans and poor homo sapiens.”*

We noted that the dynamic Asian city-state of Singapore offers particularly offers innovative thinking in how Governments might invest in their citizens. Their ‘second-skilling’ initiative enables workers to develop skills for a future role whilst still being simultaneously skilled and

productive in their current role, thereby ensuring individual employee flexibility and greater career-resilience. Every Singaporean of 25 and older is thus entitled to skills training of their choice, supported by a virtual Skills Future credit account.

The World Economic Forum's 'Industry-led action for the future of work' (2019) similarly emphasises the individual and corporate benefits of proactively updating skillsets. Helpfully it offers our report 2 clear definitions:

- upskilling = learning new competencies to stay in a current role, due to the change in skills required, addressing certain competencies for career progression.
- Reskilling = learning new competencies to transition to a completely new role.

This WEF Report additionally reminds us of the need for a triple investment of reskilling at-risk workers, upskilling the broader workplace, and building learning organisations to mitigate short- and long-term skills challenges. It also highlights that the full productivity dividends of technological adoption are not realised in two thirds of the workforce because of a cocktail of sub-optimal leadership, skills gaps, incomplete workforce planning, partial skills mapping, and the overall absence of a culture of lifelong learning.

These important findings build upon the WEF's Future of Jobs Report (2018) which also highlighted insufficient reskilling and upskilling within 21st century workplaces. Together with skill shifts towards active learning, creativity, complex problem solving, social influence, emotional intelligence, "ideation", and system analysis and evaluation.

This imperative for reskilling and upskilling from both WEF Reports (2018, 2019) is again






reinforced in the World Bank's 'Changing Nature of Work' Report (2019). It concludes that those countries with the lowest human capital development today will produce a future workforce that is only 33-50% productive. However, stronger human capital development will reap higher economic returns from new technology adaption *whilst simultaneously helping* employers to adapt faster to further technological change. Moreover, agile employees require both cognitive skill development (critical thinking and problem solving) and socio-behavioural skill development (creativity, curiosity, communication, empathy, conflict resolution, relationship management, teamwork, adaptability and resilience). Here again, Government has an essential role to play in creating fiscal space to finance publicly that development of human capital development. Indeed, the report highlights that such an investment should infact be done "*with a fierce sense of urgency*" in order to optimize the benefits of technological adaption. It is very telling that Big Tech giants like Amazon have already set aside \$700M to retrain 1 in 3 of their US employees for future roles.

Interestingly, this World Bank report cites the pioneering role of Scotland in human capital development, and quotes Adam Smith from the 1700s: "*the acquisition of...talents during... education, study or apprenticeship, costs a real expense which (is) capital in (a) person. Those talents (are) part of his fortune (and) likewise that of society.*"

Most recently the European Foundation for Quality Management (EFQM), one of the foremost global authorities helping organisations worldwide to secure long term sustainable value for their respective stakeholders published (October 2019, Helsinki) its 2020 Model. This holistic framework and guiding principles offers




a tried and tested blueprint for organisations of all types and sizes to thrive in this VUCA world. Drawing on 30 years of competitive insight and shared excellence, EFQM distilled the wisdom of some 2000 global change experts and 60 highly influential executive leaders from multiple industrial sectors, to offer organisations a unique strategic framework simultaneously to manage both today's operations and tomorrow's transformation and disruption. In essence EFQM experts reasoned that 21st Century organisations could secure both short and long terms sustainable futures when they could provide compelling answers to the following fundamental questions:

- Why does this organisation exist?
- How does it deliver its purpose and strategy?
- What has it actually achieved and what does it intend to achieve?

EFQM contend that sustainable competitive advantage is primarily gained by the deliberate alignment of an organisation's corporate purpose and a winning culture (direction), with the engagement of all its stakeholders to drive performance and innovation (execution) with the astute use of organisational intelligence using stakeholder perceptions, data insight and predictive measures (results).

Significantly for our report, EFQM also identified that organisations leveraged higher levels of value and performance from being part of an eco-system, with an agile mindset, an entrepreneurial spirit, and with new styles of leadership. Furthermore they highlight that leadership will have to embrace a more collaborative approach, less hierarchical, less command and control, and one that is ultimately much more dispersed throughout the entire organisation.





IMPACT

“...we cannot overstate the importance of creating an environment that supports an immersive symbiotic relationship between colleges and industry...”

We have considered a new, clear, multi-disciplinary role on which colleges might focus their unique contributions in a new operating environment, and we have defined the characteristics of that new world. Now,

we highlight colleges' impact, beginning by considering how they have performed over the last decade. The following graphs illustrate what colleges have delivered.

Figure 1: Student enrolments in further and higher education at colleges, 2008-09 to 2017-18.

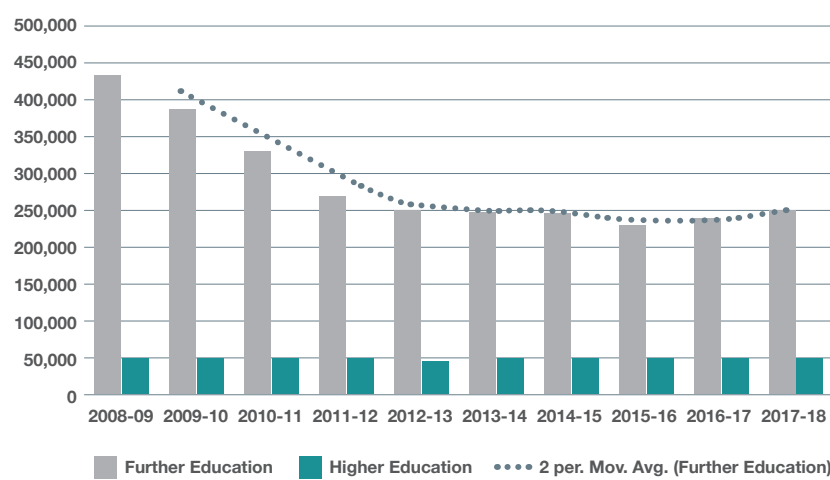


Figure 2: Number of full-time and part-time students 2008-09 to 2017-18.

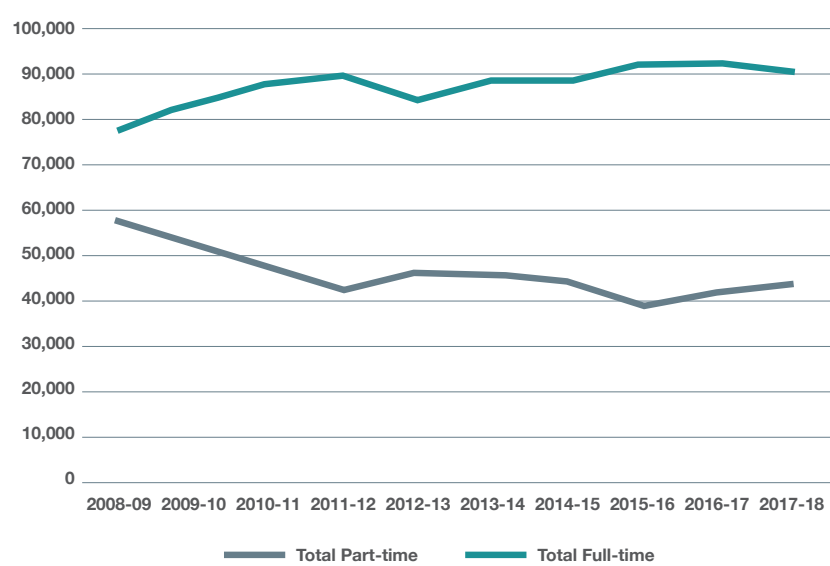
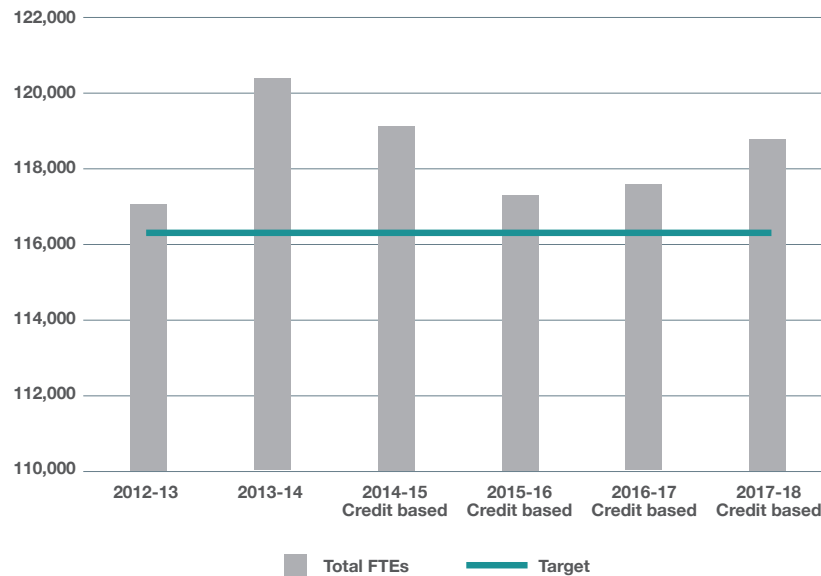


Figure 3: Number of Full Time Equivalent places from 2012-13 to 2017-18.



Colleges serve individuals, their communities, employers and industry, and the economy. We now examine the respective impact they have on their constituent stakeholders. First and foremost, colleges are inclusive and democratic: they are for all learners. For example, over 30% of our students come from Scotland's 20% most socio-economic disadvantaged areas; have learning disabilities; have experience of care; and attend school as well as college. Colleges support young students, as well as adults returning to learning. Colleges provide the essential learning and coping skills that help those furthest from education participate in society and especially to become, and remain, economically active; and they also provide professional qualifications and degrees. As a result, and as we have noted earlier, the curricular provision in colleges is necessarily diverse. This is a strength, but also risks

being a challenge: the democratic nature and diverse scope of our college sector is not always clearly understood, or, for that matter, valued by stakeholders, and we signal among our recommendations the need to promote clearer purpose of a 21st Century college, in which is implied the need for prioritisation, and ending lower value activity. However, while we understand the premium of helping more people to remain economically active and to have access to higher value and higher paid jobs, we must recognise too that colleges have to continue to reach those in society that remain furthest away from education and sustained employment. Indeed, reaching deeper into local communities will require an ever more diverse set of educational interventions and programmes and much greater flexibility for learners to move in and out of the tertiary system as needed.

We recognise too that the notion of a ‘job for life’ is now essentially defunct. So too is that of ‘an initial pre-employment education for life’. Lifetime learning and lifetime employability are vital. In this environment, and as the challenges our society faces become more complex, colleges are recognising the power of inter-disciplinary approaches to influence how we teach and how our students learn. Multi-disciplinary approaches are becoming increasingly important – learning to think in new ways, integrating knowledge and skills, working collaboratively across disciplines, and offering our students a richer understanding of the world of work. Against that background, we should consider the potential for co-locations, becoming smarter across the whole system in how we use our assets: can co-location or different forms of tertiary collaboration enhance industry connections, improve business performance, promote multi-disciplinary teaching and learning to better reflect the future nature of work? To this end, we think SFC should explore how to promote collaborative solutions in considering future capital investment projects.

“CIVIC ANCHORS”

As we have noted, colleges also help to build capacity and social and economic resilience in their respective communities, where they act very much as civic anchors: supporting inclusive growth and fair work; inspiring social enterprises; and protecting and enhancing ‘indigenous’ skills. All this helps to retain people in their communities, and as active contributors and role models to their siblings, children and neighbours. The college sector is an essential developer and deliverer of skills, employability, and business development solutions that support inclusive economic growth, both locally, regionally, and for Scotland as a whole. So, uniquely, colleges have a dual mandate, playing

a pivotal role in developing strong and vibrant economies, while providing a wide range of pathways to employment and building a more inclusive society. Colleges directly tackle social inequalities through helping people acquire skills.

Fundamentally, this is about widening access, promoting social inclusion, and providing opportunities for lifetime learning.

That is why colleges are far more than centres of learning. They are an integral part of local and regional economies, contributing to their growth, improving lives by increasing employability, and training a workforce in the essential skills local businesses need to prosper. We know that education is not simply about economic performance: there is substantial evidence of the indirect benefit to the economy of the social impact of learning. A wide range of social outcomes result from education, including building resilience, cognitive development, confidence, interpersonal trust and life satisfaction. Research demonstrates that, overall, education leads to better outcomes for individuals and society: improved job prospects, lower levels of societal inequality, higher tax income, and lower unemployment. These benefits accrue in part as a result of colleges providing routes from school to work, further training or university; continuous skills-development; and re-training people for new opportunities. And by reducing unemployment and supporting re-entry into education and training, colleges reduce economic and social exclusion in communities.

SKILLS AND EMPLOYABILITY

Skills serve as a bridge between knowledge and performance, and in the emerging performance economy, this bridge is every learner’s path to success. Skill is a mechanism by which humans lever knowledge effectively to improve

our individual and collective performance. To strengthen skills, we use the knowledge we already have and add to it; and then, through practice, we use this knowledge to strengthen our skills. Ultimately, we perform better. To ensure we thrive as individuals, businesses, and at the economic and societal levels, we all need to develop new skills, not only to help manage an environment of continuous change, but to help us excel, to collaborate and empathise with others and, as a result, to create our own futures.

We have previously discussed the value of meta-skills, the core, transferable skills, necessary in the changing world of work. Colleges are central to developing and embedding these skills. The major skills deficits in our labour market are in intermediate and higher technical occupations (Bakhshi et al., 2017), and the associated skills mismatches and skills churn have increased the need for adult skilling, reskilling, and second-skilling throughout a career. Tackling this is best done at the local and regional level through the college-employer partnerships we discuss throughout, shaped by the local and regional economic priorities.

Notwithstanding the priority Government and partners ascribe to individuals and communities, engagement with employers is the core focus of this report. Here, we cannot overstate the importance of creating an environment that supports an immersive symbiotic relationship between colleges and industry: colleges working alongside and shaping businesses, encouraging them to improve their performance; colleges educating and training students - our future workforce; and industry shaping and investing in our vocational, technological and professional system.

The current system is often described and valued (or funded) in terms of 'provision.' We think this is an anachronism. Increasingly, many colleges are, and all should be, co-producing and co-providing with industry partners. It is therefore important to consider how such an approach - and the associated co-investment - could become the default, replacing the existing transactional 'demand-supply' status quo. Deepening collaboration between industry and colleges and the wider tertiary system should be incentivised. The case studies in this chapter illustrate real life examples of the impact of successful, collaborative college/employer engagement.



Case Study 2

DUNDEE & ANGUS COLLEGE – MICHELIN

Michelin Dundee, Scotland's only tyre manufacturing plant, opened in the early 1970s. For engineers and craftsmen, the company offered a strong future and the facility instantly became one of Dundee's major industrial employers, alongside NCR and Timex. Michelin continued to operate in Dundee for almost 50 years, specialising in the production of smaller scale tyres. But on 5 November 2018, the company announced the plant would close with the potential loss of around 750 jobs.

We immediately joined other partners in implementing a planned response, predicated on supporting the workforce to retrain, enhancing existing skills; and preparing staff to transition into alternative employment, college training to consider self-employment and ultimately secure a sustained positive outcome.

We attended information days and ran a series of our own events highlighting the options we could offer to support the workforce: we provided one-to-one sessions with curricular areas, developed and rolled out a bespoke Digital Awareness course (in line with the Government's Digital strategy), information sessions in the cafeteria to speak directly with staff, using TV screens throughout the plant to promote sessions, supplemented by a wealth of written advice available throughout Michelin.

As a result, a number of staff came to the College to discuss particular options, courses, or enrolled directly in provision from SVQs to direct engagement in full time courses such as accountancy qualifications. Where the college could not support individuals, we signposted them to the appropriate stakeholders best placed to help. The College was part of a system that allowed around 200 staff to move directly into other posts, 150 staff to upskill in their current role, and 100 staff look for a complete change and retrain for new work. Michelin's internal training arm is working alongside us to take on all of the company's their MA Engineering apprentices.

Looking ahead, a new partnership - Michelin-Scotland Innovation Parc (MSIP) - will focus on sustainable transport and low carbon energy, turning the site into a world class innovation hub. The current production and manufacture buildings will be used for advanced manufacturing and there will be an innovation campus, containing a large skills academy, and a new innovation hub and space for start-ups. The College has been asked to be lead partner in the Skills Academy. There will also be bespoke buildings for cutting edge technology such as hydrogen battery production.

Thus from what was a very dire situation in November 2018 the future now has a decidedly brighter aspect for the staff of Michelin Dundee. The College is delighted to have played an important and pivotal role in this journey.

Case Study 3

FORTH VALLEY COLLEGE

FVC trains over 1000 Modern Apprenticeships each year for many industry sectors, including Engineering, Health and the Life Sciences. This includes flexible delivery models tailored to meet business needs, identified in partnership with industry partners such as INEOS and FMCTechnip. The bespoke and co-developed nature of the College-industry collaborations include dedicated training programmes and tailored vocational awards to deliver training for companies such as Diagio and PetroChina.



Case Study 4

EDINBURGH COLLEGE & DUNEDIN CANMORE

Dunedin Canmore, one of the largest housing associations in East Central Scotland, developed a new operating model focused on putting their customers at the heart of what they do and developing an approach of “right first time”.

A business critical need identified by the company was a requirement to re-skill and up-skill staff.

The collaboration between Dunedin Canmore and the College resulted in a co-developed bespoke programme, building on an existing qualification. This led to a number of benefits to the business, including material improvements in customer satisfaction measures, an increase of 10% in productivity and reduced costs on external contractors.

Case Study 5

DYW AND GLASGOW CHAMBER OF COMMERCE

Glasgow Employment and Skills Board: employers and colleges tackling youth unemployment

Background

Glasgow Chamber of Commerce's (GCoC) Glasgow Employment and Skills Board (GESB) is an employer led group providing independent comment

and oversight on Glasgow's skills and employment strategy. GESB has a track record of successful skills and employment strategic interventions, such as its 2012 ex-offender report, "Nothing Cuts Crime Like a Payslip".

The GESB's 2014 Youth Employment Action Group recommendations and findings preceded and informed similar work by the Commission for Developing the Young Workforce (DYW). Those synergies created the platform for Glasgow to deliver a strong and ambitious programme under the Commission's "DYW banner" and Glasgow subsequently launched the first Regional DYW group, followed over the next two years by 20 similar groups across Scotland. The GESB has provided guidance and leadership to the DYW team within GCoC since 2014. The strategic partnerships on which the group can draw and influence have been crucial in its success and DYW delivery has expanded to include partners in Local Authority Education and Colleges; the GESB is also closely aligned to Skills Development Scotland (SDS) and the Scottish Government.

DYW Glasgow

The Group had a long way to go in 2014: only 29% of employers recruited straight from school, and in Glasgow only 17% of school leavers went straight into a job. The Group resolved to increase industry links with education and help more young people into work. Building sustained relationships between

schools and businesses was essential and DYW Glasgow was influential in this shift change. Industry values vocational education because it bridges the skills gap between formal education and employer needs. The DYW team recognised the main influencers were teachers, parents, industry and young people, and implemented a strategy to work with these distinct groups. With relatively few employers engaging with schools, the team worked with Glasgow City Council's education department to establish a Schools and Business model covering five key areas: Enterprise; Employability; Skills and Aspiration; Transition; and Inclusion.

Supporting more young people into work

The team developed a single point of contact model with business at its heart, which had previously proved successful in securing over £1.5 million in wage support for businesses and helping young people into sustainable employment. Having industry as the key driver was crucial and helped ensure effective service level agreements with partners including SDS and GCC's Glasgow Guarantee.

Key Learning

Groups like GESB need skilled, experienced staff and personnel for successful integration into the policy arena: members are industry volunteers and need a support team to co-ordinate discussions to ensure delivery. The GESB is co-chaired by a leader from industry and Senior Director of GCoC; and it is a closed

employer group, with no stakeholders sitting as members, ensuring the Group's integrity is "employer led". However, the team supporting the board must work hard to ensure partnerships are maintained. Additionally, housing the employer-led Group within GCoC has proved invaluable for sustainability and influence. The Group is aligned to other strategic groups and boards in the region with the support team representing their views and position where appropriate.

Impact

- Our target for reducing unemployment by 40% by 2021 was reached four years early.
- 52 influencing employer partnerships across 35 secondary schools in Glasgow.
- An increase in positive Schools Leavers Destinations across Glasgow schools.
- Some 400 employers engaged collaboratively and productively in education.
- Influencing policy development through research - for example, the Regional Skills Plan and the development of accessible material outlining key jobs of the future.
- Increased awareness and recruitment of apprenticeships, in partnership with SDS
- Over 3500 young people participating in work-based activity.
- Leading on national campaigns including #NoWrongPath and

Scotland's Biggest Parents Evening. Future Plans

- Using research to ensure correct industry interventions are tailored to the young person.
- Securing more employers contributing to the curriculum to align it with the skills required.
- More work on influencing parents, in partnership with education and SDS.
- Targeting approach aimed at young people furthest from the labour market, in partnership with Glasgow City Council and SDS.
- Securing greater SME input in education (97% are based in Glasgow and are huge employers of talent).



Importantly, the benefits of creating an environment that supports and encourages a symbiotic relationship between industry and colleges has clear benefits to improving business performance. There is significant evidence of the role colleges play as a key support function for business: each college in Scotland will, on average, engage with between 200 to well over 2,000 businesses. These range from micro-businesses, start-ups, and family businesses to scale ups, SMEs, larger corporates and a diverse range of public sector organisations. They are based locally, regionally, nationally, in their regions and beyond. This type of impactful College engagement delivers:

- diversified, non-SFC income to support colleges' financial sustainability in a challenging public spending climate;
- a curriculum continually changing to meet business skills needs, increasing students' industry and employment opportunities throughout and beyond study;
- more progression opportunities for those in work, facilitating the use of new technologies and increasing chances for promotion;
- starting up new businesses; and
- improved business competitiveness and increased productivity, again securing greater economic impact.

THE FLEXIBLE WORKFORCE DEVELOPMENT FUND

Colleges welcomed the introduction of the Flexible Workforce Development Fund (FWDF) as a mechanism to stimulate closer engagement (especially with larger employers and their respective supply chains) through a range of industry-sector focused continuing professional development interventions. In only its second year, the £10m fund has reached over 1,000 employers, with a significant impact for those

businesses involved as colleges delivered bespoke workforce development services. The Fund's flexibility - compared with 'core funding' – works well, and provides a model which could be adopted more broadly to drive up colleges work with businesses.

Impressively, some 75%-90% of FWDF-supported college-business provision was bespoke. It has become increasingly clear from our consultation that employer demand for 'off the shelf' accredited qualifications remains low; instead, businesses want specific, tailored training which itself requires up-front investment and dedicated college time to develop appropriate content and tailored training strategies. Moreover, since employers do not always know precisely what they need, an important part of college-business engagement is in the design and training needs analysis stages.

Currently FWDF represents around 2% of total core funding for colleges, and was established with a focus on levy paying businesses. We welcome the Government's commitment to the Fund, but, looking ahead, we think it essential to build on its early success with a an enhanced model of what is a proven successful economic intervention. Our consultation was consistent with our own views: while it seems self-evident, a future FWDF must be business-orientated if it is to meet the needs of business. Employers prize agility, responsiveness, and a 'business friendly' approach. Yet despite being just two years into the current model, there is already 'bureaucracy creep', characterised by excessive demands for collecting, recording and reporting data. This unquestionably diverts time and resource from generating and developing the further college/business relationships that are ultimately essential to long term strategic collaboration.

Successful expansion of the FWDF will require significant infrastructure and upfront investment from colleges. The front loading of this investment is a critical feature of the FWDF model, supporting the necessary staffing resource to secure and develop the relationship between the college and business; essential investment in Customer Relationship Management Systems; the continuous requirement for training needs analysis in companies; development time to consider and create bespoke solutions and targeted interventions; and helping minimise SFC requirements.

This upfront investment is important for a number of reasons. Colleges must establish the necessary operational business models and appropriate staffing to achieve the desired outcomes of the FWDF. However, this is a significant risk when operating on the basis of annual funding allocations and where short term funding is also announced on an annual basis: colleges have put in place business development teams, administrative support, and trainers without the certainty of any continued FWDF funding, or the use to which it will be put. Additionally, the further expansion of the Fund will eventually create unmanageable tensions given the need for colleges to balance the provision of specialist, 'just in time' expertise to underpin bespoke training with a current college business model that requires us to maximise the time of lecturing staff on SFC-funded credit activity, in pursuit of delivering an increasingly anachronistic volume target. The tensions quickly become evident: the current credit funding mechanism – equating to 40 hours of learning per credit - is simply not conducive to delivering innovation and generating further business development opportunities. This is particularly so when engaging with SMEs and

micro-businesses, the overwhelming majority of the employer base in most college regions.

THE COLLEGE 'VOLUME TARGET'

It is at this point we must address colleges' existing primary target. The target of 116,300 full-time equivalent learners was set nearly a decade ago, at a point when – following the last global financial crash - there was a serious risk of endemic youth unemployment; the loss of yet another generation of employers in Scotland, and a growing increase in young people not in education or training. The Government's priority to focus colleges on full-time provision for 16-19, and subsequently 16 – 24 year olds, was well judged, both in averting those threats, and in securing for Scotland a strong position relative to other parts of the UK. However this is no longer the dominant macro-economic challenge we face, so our economic focus should shift from a singular one on keeping young people in education, and getting them into work, to helping all employees to access higher quality work, while helping key economic sectors to grow in a global market.

We therefore need to consider how we establish and maintain a fully flexible lifetime offer of vocational, technological, and professional learning, mindful of the need to stimulate and support future co-investment from employers in that lifetime provision.

Creating the environment and capacity to deepen the relationship between colleges and industry is a key theme in this report. As well as the more recent success of the FWDF, these relationships have also been underpinned by support from European Structural Funds (ESF), which prior to reform, colleges were able to access directly from the EU (for some while this support has been directed to colleges via SDS or SFC.): the number of close collaborative



relationships between colleges and businesses has grown, particularly over the past decade along with our associated product and market knowledge. Colleges have demonstrated agility and responsiveness to new economic development opportunities and specific funding that also supported upskilling and reskilling of those in employment; and promoting business start-up and entrepreneurship. They have also developed digital materials and online infrastructure for flexible workforce learning. These vital EU structural funds provided the space, time, and resource to enable closer working with businesses, better to understand their strategic development needs, their emerging skills gaps, and then helping us to develop and deliver better targeted products or services. Moreover, these working relationships would go on to generate other enhancement activities such as curriculum development, real life project briefs, work placements, sponsorship, and input from industry guest lecturers.

To an extent, the FWDF has re-energised colleges to rediscover or build up this successful partnership approach with levy paying organisations. However the focus on these larger businesses means that, the SME and micro-businesses who more urgently need our support are ineligible. From our consultation, we have identified a gap between who we need to, and who we can, support.

In a world where the future of EU funding, or any UK-based replacement is – to say the least – uncertain, we contend that creating access to a funding mechanism which is sufficiently flexible to support the individual needs of businesses - similar to the FWDF, but extended beyond levy payers - would significantly increase colleges; impact on the economy. In addition it would also have a positive effect on colleges'

cultures: experience tells us one result of direct engagement with businesses is an increase in entrepreneurial spirit and the adoption of more business-like behaviours among staff, with a corporate culture felt more widely within the organisation. These attitudes would in turn inspire the wider student body, championing employability, encouraging confident learners to move into jobs equipped with the meta-skills required by industry and the economy.

Organisational agility and resilience will also enable colleges more quickly to reconfigure strategy, structure, business processes, people and technology in response to demands of individual learners and employers. We recognise the tension between the need for greater agility and less regulation and central controls versus institutional and sector stability, particularly within an uncertain financial position. However, while creating an environment with an appropriate balance between stability and dynamism is likely to be challenging, it is now possible, post-reform, to build on the foundations that have been established through regionalisation and the growing alignment within the wider tertiary system.

Case Study 6

DUMFRIES & GALLOWAY COLLEGE

Covetrus is a global leader in animal-health technology and services for animal care professionals. Having undergone a recent merger, the company identified the need to integrate and combine technology, services, analytics and expertise to best serve their customer base. Covetrus wanted to develop human capacity within the organisation through the development of both 'meta-' skills

and technical skills. The FWDF supported collaboration with the D&G College as a key partners in the delivery of the hybrid training needs of the company. Covertus identified the importance of growing the skillsets of its employees, enhancing capabilities to drive performance and deliver company ambitions. Covertus welcomed the importance of the speed of response - and simplicity - of the FWDF model.

The case for increasing colleges' engagement with business is compelling, and resonates strongly with the Government's strategic guidance, the Strategic Board's own direction of travel, particularly in regard to the need for productivity growth in the Scottish economy. Indeed, it is the rationale for our being asked to undertake this report. We consider that, for this to happen, especially at scale, we need to see greater systemic support and more incentivised funding for college/employer engagement, crucially with unequivocal support from across Government for this as a priority.

Additionally, the integral nature of colleges to business development, growth and productivity merits closer, deeper collaboration with the enterprise and skills agencies. Such a strategic alignment with SDS, SE, HIE, and SoSEP could improve joint regional planning, and the development of teams to enable regional collaborations with colleges (and universities) - this approach would be particularly helpful for PACE related activities and where we know we have large scale and critical skills gaps.

Case Study 7

EDINBURGH COLLEGE AND CITY OF GLASGOW COLLEGE FINANCIAL AND PROFESSIONAL SERVICES HUBS

The Colleges have developed new models of delivery, now underway in the Edinburgh and Glasgow Financial Services Hubs in a collaboration between colleges, the banking and financial services industry, and Skills Development Scotland.

An initial Glasgow pilot focused on the development of flexible courses for the sector ("Fast Track") with Barclays leading in the West. Further developments are now underway in the East, with Lloyds Banking Group leading. 'Fast Track' is an initiative undertaken through the Financial Services Advisory Board (FISAB).

The pilot was co-designed and co-delivered to course participants; the curriculum recognised prior qualifications and concentrated on the skills development necessary for entrants successfully to secure roles within the sector - and perform "from day one". The emergence of the East Hub and scale-up plans presented to FISAB in September 2019, presents an opportunity to develop yet more agile and responsive funding models, including opportunities for enhancing industry investment in colleges.



Our ambition is to refine the current 'employer engagement' model to one that better supports and promotes deeper and systemic **college-employer co-production and co-investment**.

The financial services model in Glasgow and Edinburgh highlighted in the case study on the previous page is a practical, working example. The challenge was, systemically, to support and incentivise 'co-production' and co-investment. It is worth noting here, however, that the employers involved in the examples are large multi-nationals with more acute skills gaps and employment opportunities – and more resource.

This proposed new model of delivery (co-creation and co-development) is perhaps more difficult to replicate with SMEs, family businesses and micro businesses because of their inherent limited resources. We heard several times from business people who described the difficulty leaders of these businesses face in undergoing either personal or business-focused development; the comments of one – "I'd love to do an HND, but who's going to run my business?" - captures succinctly the difficulties of juggling these competing priorities. That means we need changes to existing college funding rules, and the current business model which is driven by viability, and highly dependent on economies of scale (that is, class sizes and maximising staff utilisation on direct learning & teaching activity). Moreover, there will always be an inherent tension between creating critical mass to support direct work with SMEs and

micro businesses. We need a new funding model incentivising and creating capacity for more activity directly to support SMEs; and we must explore whether and how we can cluster SMEs by shared or similar challenges – with the prospect of a solution that could be scaled up across industry sectors.

SDS's 'apprenticeship family' offers a further, significant opportunity for better alignment: for example, we expect that the current work on skills alignment underway in SDS and SFC will consider opportunities for maximising the college contribution to apprenticeship delivery. Additionally, the significant level of college participation in graduate apprenticeships in England is in stark contrast to the position in Scotland where college delivery is the rare exception. We hope that the skills alignment work will also tackle and remove the difficulties colleges face in working with multiple funding and reporting regimes operated by the two skills agencies. That work should also explore planning a combined offer with the agencies to support industry needs - for example, through the SDS Digital Skills Fund. In such instances it would be helpful for SDS to engage directly with colleges to include a top-up on each HNC/D to provide those industry accreditation top ups to people in businesses. This would have been helpful where regional SDS staff are more engaged in national initiatives and therefore able to integrate these more closely with colleges.



Teaching funding (2013/14 – 2019/20)

Colleges 
Universities 



Funding per FTE (2019/20)

Colleges 
Universities 



Strategic funding (2013/14 – 2018/19)

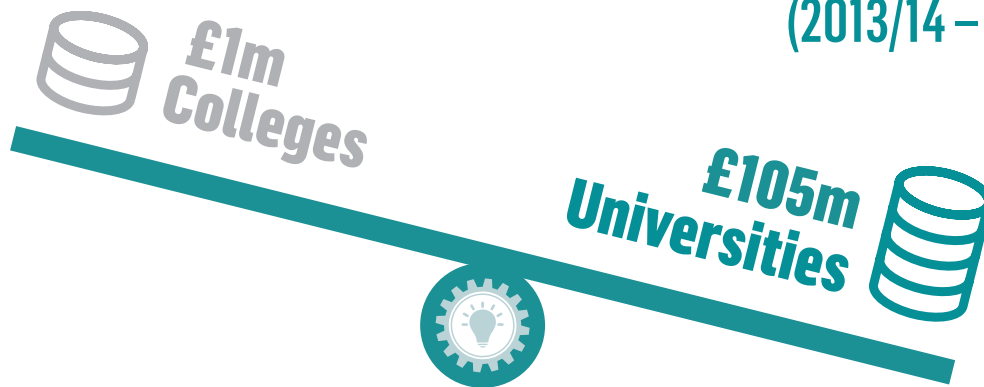
Colleges 
Universities 



MAKING INNOVATION USEFUL

“...Innovation: a ‘pipeline’ in which universities and colleges play distinct but complementary roles...We have to seize the substantial opportunity to reinforce systemic thinking within the innovation ecosystem...”

Innovation Funding (2013/14 – 2019/20)



Colleges have untapped potential - and a keen appetite - to contribute more fully to Scotland's innovation agenda. As the graphic above illustrates, current tertiary sector investment in innovation is almost exclusively focused on universities and their research, associated research, or innovation centres. We believe there is a clear opportunity significantly to enhance colleges' role in supporting business and industry sector innovation, particularly (though not exclusively) in Food & Drink, Creative Industries, Tourism, Health & Social Care, and Maritime and STEM.

We are not the first to make this point. The need for colleges to play a more direct and dynamic role in the innovation ecosystem was identified by Professor Graeme Reid in his independent review of innovation centres in 2016. Professor Reid recommended that the SFC explore and enhance colleges' involvement of in the Innovation Centre Programme, and, noted specifically that:

"... the success of the college sector in Scotland can be through innovation of business products, but is more often about delivering skills, and through those enhanced skills, improved productivity and efficiency. The delivery of skills is not some sort of "secondary" innovation – developing new skills and techniques to apply alongside new technological innovation is vital if such developments are to be embedded and made truly a commercial success".

Professor Reid's second sentence above is particularly important in making plain the fundamental nature of skills in this agenda; but our consultation has reminded us there remains work to do in considering innovation as an 'ecosystem', and in thinking of it as a 'pipeline' in which universities and colleges play distinct but complementary roles.

We have to seize the substantial opportunity to reinforce systemic thinking within the innovation ecosystem, mindful of the growing need to diffuse even more knowledge in businesses

to support product, business process, and/or service innovation. The high level of interest from colleges in the SFC's College Innovation Fund – the £500,000 available is significantly oversubscribed - demonstrates the appetite and demand for college-related innovation activity. The year two projects approved for funding have been selected for their national strategic importance and are helping address the climate change emergency and digital enhancement in the Health & Social Care sector. We contend that colleges are crucial in supporting 'how' businesses can be more innovative, by building and generating applied innovation capacity, and by developing a skilled workforce able to embrace emerging technologies and new markets. Again, we urge a paradigm shift in how we promote and fund innovation, supporting opportunities for multiple players to collaborate in ways that more fully exploit industry-focused innovation.



Case Study 8

WEST COLLEGE SCOTLAND & INNOVATION SUPPORTING INTEGRATED INNOVATION WITH THE SUPPORT OF INNOVATION VOUCHERS (INTERFACE)

James Frew Ltd. is one of Scotland's largest integrated building services firms, serving customers across the central belt, in plumbing and heating, property upgrades, mechanical services and renewable technology. With headquarters in Ayrshire and employing more than 250 people (including 33 apprentices) the company asked to work with WCS to develop an innovative training planning process.

The subsequent collaboration, funded by the first Innovation Voucher awarded by SFC to a college, identified staff training requirements, linked them to the company's business improvement process, and tailored training and development to James Frew's needs. The project included monitoring of certification renewals, development of individual training plans, and measured the impact of training through Achievement Measurement Indexing.

Through this more structured approach to investing in people through high-quality training, WCS helped James Frew Ltd improve productivity performance and make efficiency savings - helping the firm maintain a competitive advantage in a fast-moving commercial market. Roddy Frew, Managing Director, said "we are

delighted to work with West College Scotland. The relationship we have is invaluable. Over the past three years, the College has helped us align our training plans and improve the service we offer to our customers.”

Case Study 9

EDINBURGH COLLEGE & BUSINESS CENTRED INNOVATION (INTERFACE INNOVATION VOUCHERS)

UTEC StarNet has made significant strides into the energy sector by providing visual web-based integrity knowledge databases, reducing the need continually to visit offshore assets, improving safety and efficiencies. This approach has allowed the business to collaborate with major blue-chip energy partners, providing opportunities for a growing workforce within the business.

The aim of this initial joint project is to explore the manipulation of 3D datasets, over a web environment, to help support the integrity management of offshore wind turbines, as a proof of concept. Inspection data such as seabed profiling, video and camera stills will be incorporated into an interactive 3D model or digital twin of the environment.

The collaboration between the company and Edinburgh College is essential to providing a unique blend of academic knowledge and expertise in 3D Animation and Games Development. The experience and capacity within the

College for manipulating 3D datasets will help to drive achievable outcomes linked to improved business performance and competitiveness.

Case Study 10

EDINBURGH COLLEGE – THE CLIMATE CHALLENGE AND BUSINESS CENTRED INNOVATION (PHASE TWO OF COLLEGE INNOVATION FUNDING)

In partnership with UHI, Heriot-Watt University, the Institute of Motor Industry and the Scottish Motor Trade Association, this tertiary/industry collaboration addresses a demand led requirement from the automotive industry to re-skill and upskill current and future workers – in direct response to wider changes in society, and specific Scottish and UK Government policies on carbon reduction and green transport, aimed at promoting the use of hybrid and electric only vehicles.

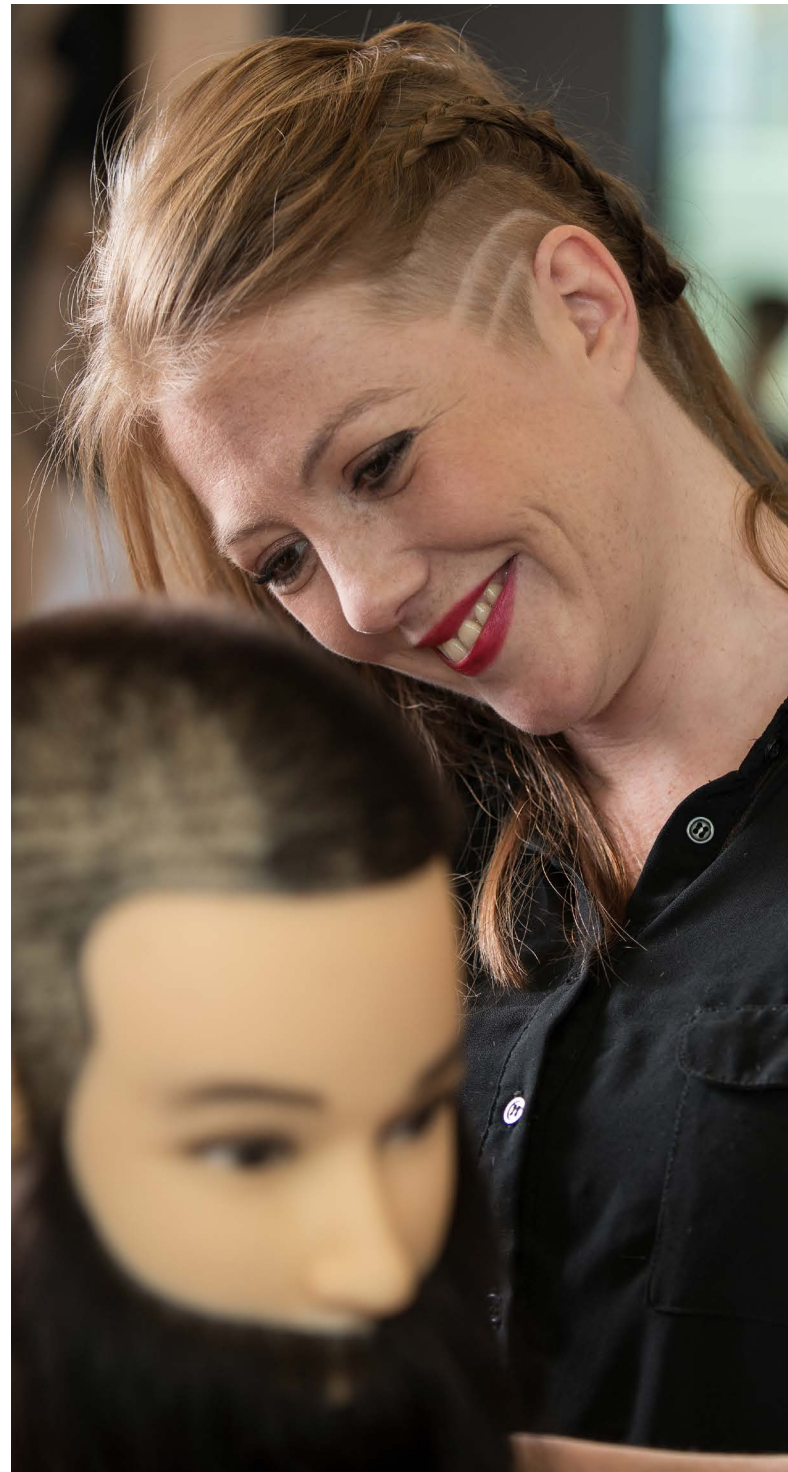
The registration figures, for new battery electric and plug-in hybrid vehicles, has grown by 46% over the past year, compared to 33% in the rest of the UK. There are currently over 10,000 ultra-low emission vehicles licensed in Scotland.

Industry partners needed Electric Vehicle/ Hybrid, Health & Safety Awareness training for painting, bodywork and recovery vehicle technicians - to raise awareness of the potential dangers of working with EV/Hybrid vehicles. This

collaboration will create and deliver a multi-media online accredited training programme where students and business employees can examine and interrogate Electric Vehicles using augmented and virtual reality technology for an immersive learning experience. This will be accessible via online learning platforms via a range of devices including computers, tablets, and smart phones.

The collaboration will:

- Create new, current and industry relevant learning resources
- Develop a proof of concept utilising AV/VR focussed observational training methodology and materials
- Improve EV/Hybrid health and safety awareness in the automotive industry
- Provide new upskilling and re-skilling opportunities for the automotive sector, in particular for painting & bodywork and vehicle recovery staff
- Strengthen and develop existing partnerships with Heriot Watt University, UHI and Perth College addressing EV/Renewables agenda
- Strengthen and develop existing and new partnerships with the automotive sector to better understand and respond to, current and future skill needs and promote the range of work based learning opportunities that Edinburgh College and the wider college sector can provide.





We have noted how technology companies are disrupting education, as well as the potential for colleges and universities collectively to pursue collaborations with big tech to better harness investment in new and emerging technology and skills. This could include single educational platforms within regions (or beyond), and data innovation implementation. For example, the Fujitsu Education Ambassador programme represents a significant private sector investment in professional and technical education. A Fujitsu Innovation Hub has been established in Edinburgh College, and, similarly, across several colleges in the sector. The Innovation Hubs are centres of excellence in digital co-creation within the education community, connecting new and emerging technologies with education to deliver digital change in education and enhance the digital skills of students.

PUBLIC AGENCY ALIGNMENT

We were disappointed to note from our consultation that the enterprise agencies have limited involvement in supporting college & business collaboration; however, we were heartened by the recognition that this represented an untapped opportunity for growing collaboration across the skills system to deliver improved economic outcomes. Once again we note that the Enterprise and Skills Strategic Board, the skills alignment work in train

between SFC and SDS, and the Government's Future Skills Action Plan all reinforce the need for greater cohesion and collaboration across the tertiary system; and our consultees recognised that Scottish Enterprise's new Strategic Plan, Building Scotland's Future Today, details a framework that aligned more closely with the priorities of colleges - with a stronger focus on businesses of all sizes, supporting their growth ambition, and boosting entrepreneurial spirit. Given the national ambition of a single portal for businesses it would be invaluable for the college sector to play a full part in these developments, so we can properly understand - and contribute to - the content, while ensuring that college support for businesses is included in the available 'resource'.

Finally, we think the regionalised college landscape, anchoring our colleges in 13 regions across Scotland (and with the majority of regions spanning multiple local authority areas), creates an important opportunity to explore how the relationship between the enterprise agencies and colleges could be strengthened further using a regional model of business-college/enterprise agency engagement, and thereby avoiding cluttering the landscape for in which businesses have to navigate.

EXPORTING SCOTTISH COLLEGE EDUCATION AND INNOVATION TO THE WORLD

“...were we to scale up our efforts, we would also export our indigenous and distinctive Scottish value set; our emphasis on universal access and progression pathways and the corresponding impact on social mobility; and our pioneering thought leadership...”

Exporting is one of the four missions identified in the Enterprise & Skills Board's Strategic Plan, and the Scottish Government's ambition for Scotland as a 'Trading Nation' is one to which the sector already contributes. It is also an area where – continuing our general theme – it could do more if the conditions were right.

'Scotland is Now' promotes Scotland as a place to live, work and study, and our colleges stand alongside our universities in making that a reality. We welcome thousands of international students each year, from over 130 different countries.

The benefits from this international engagement are palpable for colleges, for the economy, and for the Scottish Government's wider ambitions. As the sector looks outward, beyond our national boundaries, so colleges become more dynamic, innovative, globally connected and competitive, leading in the skills agenda and acting as key contributors to inclusive economic growth. They promote their expertise internationally, while bringing home best and innovative practice so that their staff and students enjoy a global perspective.

Moreover, international activity enhances the reputation of individual colleges and the Scottish sector as whole; many of the businesses with which we work are themselves international, and where colleges are similarly connected overseas, their relationships with domestic employers are strengthened through enhanced credibility, quality, and competitiveness.

The educational market in which we operate is also increasingly global: digital technology is connecting educational institutions and our student bodies, so collaboration with international partners is vital, allowing us to keep up with new and emerging trends. Finally, international activity generates income to

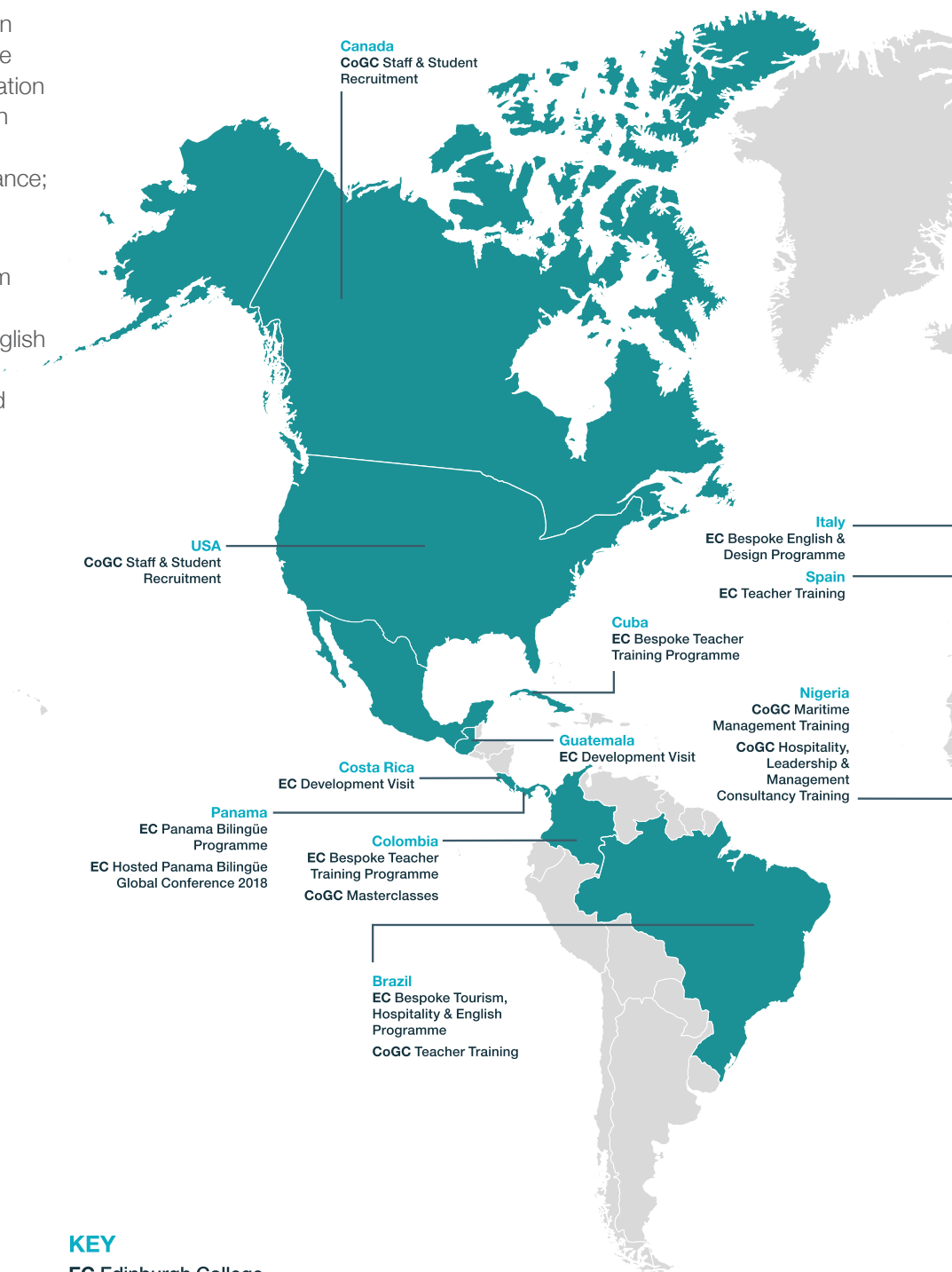
reinvest for the benefit of our students, staff and regional communities and economies.

We have considered the position of Scottish colleges at the global level against two questions: first, what is it that characterises the performance of the best skill nations worldwide? In this respect, Annex 2 summarises the position on technological and vocational training in a number of the world's advanced economies. Second, and consistent with the Government's ambition to develop Scotland as a "Trading Nation", we have considered the export potential of the sector and its individual colleges.

By way of a summary of the characteristics of our international competitors, it seems there is a number of common factors that appear to lead to high quality technological and vocational education and training (or TVET) systems, and thence to international competitiveness. These include:

- a clear commitment from the state to continuous improvement in the quality and relevance of its TVET, and of its status in civic society;
- an energetic contribution from, and engagement of, employers at all stages of the process:
 - o concentrating on good applied research;
 - o providing current labour market intelligence, and supporting future skills forecasting;
 - o supporting the development and improvement of qualifications; and
 - o sharing in investment in the system
- excellent teaching and assessment by 'dual professional' teachers with current pedagogic and vocational expertise.

- effective connections between the TVET system and effective primary and secondary education school systems, together with the provision of high quality information, advice and guidance; and
- finally, incremental change in a fundamentally stable system - rather than frequent major changes (as is the case in English TVET) - over time improves a deeper understanding of, and respect for, TVET.

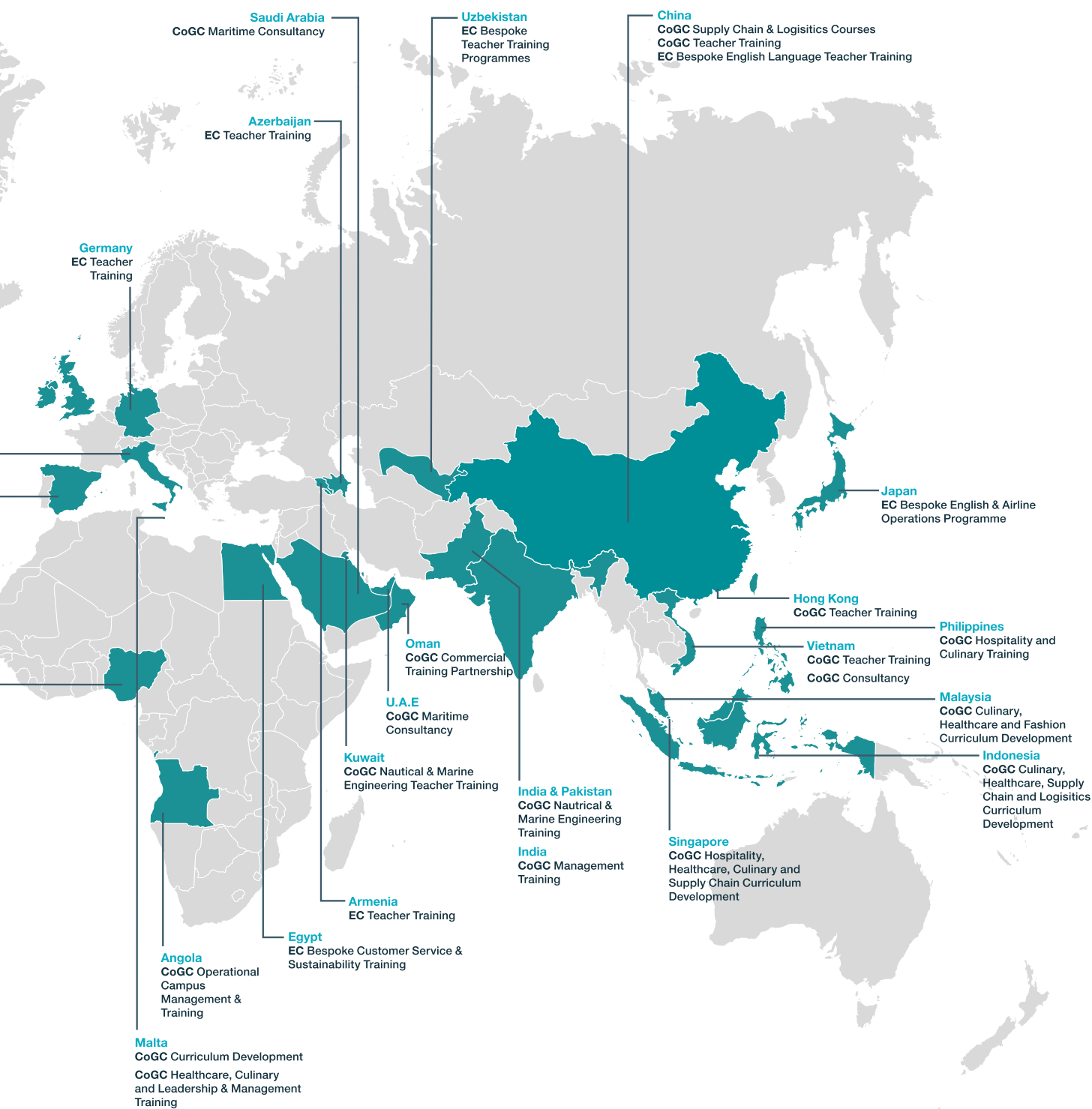


KEY

EC Edinburgh College

CoGC City of Glasgow College

GLOBAL REACH



WHERE ARE WE NOW?

Against that background, let us consider our colleges' current international activity. This is especially important because of the need to secure greater success in international markets in a context of the significant threats Brexit risks creating. However, we believe our colleges now have a scale that presents an opportunity for greater levels of export of expertise. And while Scottish expertise in technological education and professional education (especially at a higher vocational qualification level) is in demand, were we to scale up our efforts, we would also export our indigenous and distinctive Scottish value set; our emphasis on universal access and progression pathways and the corresponding impact on social mobility; and our pioneering thought leadership and system-wide approach to employment capacity building. All this would raise Scotland's profile while strengthening our economic future, deepening excellence, and supporting student and staff retention by providing global opportunities in learning and development, and the resultant outward facing culture that implies.

In 2015, Scottish education exports were valued at £780 million. A survey commissioned by the Colleges Development Network in October 2017 and a subsequent call for information this October highlighted that colleges already undertake significant and varied international activity across the world. Levels vary from college to college, but of the 15 colleges responding to the survey, 13 were engaged in international activity, over a broad field. There were, however, four areas where more than half of the respondent colleges engaged:

- Student Recruitment
- Staff Exchanges

- Student Exchange/EU Mobility
- TVET capacity building

This activity covered a wide spread of curricular areas, most commonly in Creative Industries, Engineering, Hospitality and Tourism, Digital, Sport and Fitness, ESOL and Oil and Gas. There was also more general activity in curriculum development; learning and teaching (in particular, teacher training for international TVET institutions), leadership and management in TVET, and quality assurance.

In terms of markets, and aside from the EU/ EAA as the major country identified for student recruitment and student exchanges (a significant part of colleges' international activity), no single, nor group of countries stand out as the main focus of activity for multiple colleges. Colleges are active in China, Middle-east/North Africa, South America, SE Asia, Central America, West Africa, East Africa, India, and Pakistan. The return on this engagement is significant: just over half of the colleges are bringing in between £500,000 and £2 million per year in income, while a third generate less than £250,000. Together, our two colleges have overseas income of around £3.5m

Scotland's colleges are well positioned to grow internationally from this strong base. Many have already established their brand in the global marketplace, delivering an enhanced range of successful services for international partners in Scotland and overseas. Just as colleges deliver education and opportunities to meet regional and national priorities, so too can they export their expertise to develop vocational skills and training. And Scotland's colleges can offer international clients a huge range of provision: student recruitment, Transnational Education, short-term study abroad (i.e., in Scotland),

Professional Training and Development (again, in Scotland) and consultancy services (overseas). Additionally, colleges can provide summer/ winter schools for individual students; full time/ part-time places in in-country programmes, in either an overseas campus or through a partner; bespoke programmes for student groups in English language; vocational training programmes; accredited professional programmes, teacher training (in ESOL, general, technical, and bespoke), bespoke professional training for groups (ESOL and vocational), and TVET capacity building. Alongside this sits a broad range of systemic offers in curriculum development, quality assurance, college management and operations, organisational development in TVET; recruitment and retention; employer engagement and employability; and both developing and providing content to support learning and teaching.

Beyond all this, our colleges have many strengths which make them attractive partners internationally. Building on these, while developing new ones will be an important part of growth. And it is through collaboration that the sector will be able to build confidence and experience internationally. Its strengths include:

- the international reputation of Scottish education
- Scotland's distinctive brand, continually developed through Connected Scotland;
- a robust and comprehensive offer in vocational skills and English language;
- significant experience of building, developing and sustainably delivering a skills sector, something many countries are now looking to build or improve;
- national partnership working eased by relative proximity between colleges;

- strong engagement with national and international stakeholders and agencies including the Scottish Government, Scottish Development International, Department of International Trade, British Council, Association of Colleges, Scottish Qualifications Authority and other awarding bodies.

GLOBAL EDUCATION TRENDS – OPPORTUNITIES FOR COLLEGES

As part of its success in services exports, Scotland we saw an increase in overseas trade of Scottish education from £685m in 2014, to £780m in 2015. There is scope to increase still further, as colleges build on the global reach, reputation and profile of our education sector, unlocking new business opportunities and making more of the flows of talent, to and from Scotland.

VOCATIONAL TRAINING

Economic growth and demographic shifts in emerging markets globally are unlocking new opportunities. By 2030, it is predicted that emerging economies will contribute 65 percent of the global GDP. But demand for skilled labour is growing faster than supply, with many markets limited in providing the necessary high-quality technical skills education to meet industrial demand. They therefore look to international education partners for support in – for example - developing skills strategies, capacity building, technical and vocational curricula that meets international standards, teacher training, and English language development.

E-LEARNING

The world growth in e-learning is a further opportunity for our colleges. A market worth an estimated \$165bn + in 2015 is expected to reach \$240bn by 2023, with around 40%

of this market formed of job-specific technical skills (the largest share), and job-specific soft skills. Again, our colleges have the requisite breadth and depth of subject expertise and internationally-recognised qualifications, and we can strengthen our capacity to deliver education and training through high-quality e-teaching to capitalise on this rapidly-growing industry. This reinforces the need for investment in digital technology in the college sector. New capabilities to deliver engaging e-teaching developed through international opportunities will – again - bring benefits to the mainstream of our domestic college learners.

LARGE SCALE INTERNATIONAL EDUCATION PROJECTS

In November 2015, the UKG announced a £1.3 billion Prosperity Fund over the next five years to promote the economic reform and development needed for growth in partner countries. As well as contributing to a reduction in poverty in recipient countries, the reforms are expected to create commercial opportunities for international businesses and institutions, including those from the UK. The Prosperity Fund China Skills Programme is centred on skills reform to support sustainable development in China, and the objectives of the most recent Five Year Plan. Alignment with UK expertise and strengths should provide new market opportunities for UK education businesses and institutions to increase exports to China.

BARRIERS TO GROWTH

However, working in isolation, it is difficult for individual colleges in Scotland to attain the capacity necessary to participate in large-scale projects such as the Prosperity Fund China Skills Programme. A Team Scotland approach, however, could provide the necessary capacity and sharing of resources to develop international

activity of scale. In order to compete seriously at this international level, our colleges need to demonstrate their ability to deliver in partnership; and these partnerships need to be legally constituted so as to manage shared liabilities, and to build the confidence in international clients.

Indeed, a lack of capacity and resources was cited by most colleges as a barrier to growth, and a lack of knowledge and/or confidence by several.

TIER 4 SPONSORSHIP LICENCE – STUDENT RECRUITMENT

Current UKG policy on Tier 4 has been a significant challenge for colleges, and those both in Scotland and across the U.K. have suffered. The Migration Advisory Committee (MAC) Report on the Impact of International Students in the UK (September 2018) noted that:

“the number of international students in higher education has grown nearly 30 per cent over the past nine years, though much more slowly in recent years. The further education sector saw a boom in international students following the introduction of the Tier 4 Points Based System, and a subsequent contraction with the tightening of the rules and ending of licences for many further education colleges.”

The new Graduate Immigration Route (replacing Post-study work) which was announced in September 2019 applies only to international students who have “*completed a degree at undergraduate level or above at a Higher Education Provider with a track record of compliance and who have a valid Tier 4 visa at the time of application.*”

THE COLLEGE DEVELOPMENT NETWORK (CDN)

CDN has established an International Development Network, an important community of practice in the sector, bringing together colleges active in international trade, wider partners such as SQA and SCQF, and stakeholders such as SDI, the British Council and Education Scotland. The group meets quarterly to share best practice, develop collaborations for international work and share opportunities. Outside of this group, CDN also provides a central point of contact for wider stakeholders such as DIT and the Association of Colleges to disseminate international opportunities across the network.

In addition, this February, CDN launched an Invitation to Tender for an analysis of the Scottish college sector's capacity and USP for international business development. This work will:

- assist the sector to demonstrate comparative capacity, promoting and responding to opportunities in specific markets, subject and thematic areas
- inform a comprehensive set of marketing and case-study materials, highlighting comparative strengths
- provide the College International Group and its partners with an evidence base for its partnership work, and for promoting Scottish college expertise internationally
- inform the sector of the international opportunities available on which colleges can capitalise, both as individual institutions and through cross-sector collaborations. This could include full cost recovery opportunities and those which support market entry, capacity building, and unlock strategic forms of support (e.g. part-funded opportunities)

- inform the sector of the wider opportunities and benefits of internationalisation of colleges more broadly, particularly in the context of EU exit
- inform the sector of how colleges can better utilise their international alumni networks at an institutional level, and through a Team Scotland approach



SYSTEM LEADERSHIP

“...Our aim should be the pursuit and promotion of ‘Cross-Silo Leadership’, creating more value for our economy, our society, our nation - and especially our students - by connecting and energising experts from both inside and outside our tertiary institutions...”

Finally, we consider perhaps the most important determinant of success - leadership. We examine in particular how clear leadership, within and across system boundaries, is essential for success. Scotland's tertiary education system, together with its wider skills system, has all the building blocks in place to get results. But are these the right results; and are they at the right level?

Our starting point is that in order to build on the very successful regionalisation reforms of the sector from 2011 on, we now need Government support for reform of the tertiary education system, to help future-proof the economy itself against current and future challenges that have been well rehearsed throughout this report. They include the need:

- for more and deeper college-industry alliances characterised by co-creation, co-investment and co-production in a more aligned tertiary system, delivering a properly flexible and accessible lifetime learning offer;
- to engage ALL – including in work learners, adult learners and those individuals furthest from economic activity;
- to ensure the sector more rapidly harnesses new and emerging technologies, better to support learning, upskilling and reskilling, ensuring we stay at the forefront of the changing nature of work and skills;
- for professional and technological education and skills training to create resilient and adaptive learners and agile and resilient employers who help ensure the individual's skills go beyond their existing role in work and the employer's short-term needs.

Imagine a tertiary system in Scotland in which all our citizens have lifetime membership, where they are immersed in work-integrated learning, and where they 'touch' industry from the very

beginning of their college experience. A system to which they readily return, again and again - throughout their lifetime and careers - when they need to develop new skills and/or prepare for the next life stage. In this highly connected and inter-dependent tertiary system, colleges are valued and celebrated with fundamental and equal place, in contrast to the current bifurcated FE/HE system which is unhelpfully hierarchical and poor at engendering substantive, sustainable partnerships.

Imagine too colleges in new, symbiotic, relationships with business, industry, the third sector, and across the wider public sector, where they are delivering relevant transformative upskilling and reskilling throughout an employee's career - and beyond work for an active retirement; where the system encourages and supports business and college co-investment and co-production; and where colleges can drive greater economic growth by more direct engagement with businesses to support step change improvement in performance and productivity.

We argued at the outset that the current and forthcoming technological revolutions require a learning revolution too. We need to make sure this learning revolution is fully nurtured and inspired with dynamic system leadership: regionalised colleges should take the opportunity to be at the heart of a strategic place-based approach, more fully integrated into a tertiary system which shares a common purpose; which supports the development of priorities across metropolitan, regional and national partnerships in education, industry, public sector and their respective communities; and which optimises the investment, resources, and collective capacity to support inclusive economic growth.

A more holistic system approach is not a pipedream. In fact, there are already many examples of our colleges actively engaged in regional systems. The 'Accelerating Growth' Edinburgh and SE Scotland City Region Deal sets out a new integrated regional employability and skills partnership to widen access, address skills shortages and gaps, and deliver improvements to increase the flow of people from disadvantaged groups into good career opportunities. This is carefully designed to open up new talent pools for business. All the colleges and universities in the region are bought into collectively driving towards achieving shared outcomes.

Meanwhile, the Borderlands Inclusive Growth Deal will focus on investing £7m to develop the South of Scotland Skills and Learning Network, concentrating on the region's visitor economy. Advanced technology will support the delivery of education and skills delivery in the region to support the priorities identified in the South of Scotland Regional Skills Investment Plan.

The Further Education Trust for Leadership (www.fetl.org.uk) published in June 2019 "Colleges as Anchors in Their Spaces". In it, the authors reflect on the role of college leaders as their organisations change in scale and scope. They note that leaders of such colleges recognise the need for multifaceted management, and the need to avoid localised silos, instead locating themselves in wider systems, collaborating with key figures to promote and sustain regional economic developments and civic unity. As colleges are progressively embedded within their regions, the success of the college become interconnected with that of the region. The report goes on to discuss the importance of the altruistic leader who looks across the region as a whole, promoting action that creates mutual benefits for

the common good, and who sees the well-being of the wider system as important to the well-being of their own institution.

Case Study 11

SYSTEM LEADERSHIP & COHESION - RENFREWSHIRE'S ECONOMIC STRATEGY 2020 – 2030.

Led by the Renfrewshire Economic Leadership Panel, bringing together leaders from industry, the public sector, enterprise agencies and education and skills experts, the Economic Strategy is underpinned by:

- *economic leadership – local and central government, knowledge institutions, and business working 'collaboratively to create better conditions for economic growth, social cohesion and employment generation';*
- *a robust evidence base and alignment with the national policy context; and*
- *partnership working and coordinated effort in co-designing and implementing actions to maximise the positive impact of the strategy.*

The analysis underpinning Renfrewshire's Economic Strategy revealed diverse sectoral strengths in manufacturing, construction and transport & storage with new sectors emerging in creative industries, tourism and care. Manufacturing is the most productive sector of the Renfrewshire economy with GVA per head significantly above the Scottish manufacturing level.

A growing Renfrewshire economy means boosting business productivity, higher-level skills and increasing research and development activity. Renfrewshire is improving its competitiveness with investment in innovation, economic infrastructure and skills. Improving the competitiveness of local companies that are innovative and internationally focused is a core objective. In support, West College Scotland and Renfrewshire Council shared development of a skills pipeline and training support for local SMEs, in turn equipping manufacturing SMEs with the technical and cultural skills required to grow and prosper within Industry 4.0 through collaboration with the NMIS Skills Academy, Digital Factory and Innovation Collaboratory.

The system-wide collaboration in Renfrewshire, including the regional College creates a single entity for education and skills, led by the College, with potential to align the skills and education systems, co-design with industry a skills-based curriculum, support local people to reach their personal and professional potential, and reduce business skills gaps and skills shortages through targeted and tailored interventions - as well as horizon scanning to meet future skills demands.

The College will also work with employers in designing learning to deliver industry relevant skills and integrate STEM skills across all its programmes. Foundation, Modern and Graduate apprenticeships will expand, including plans to develop, with the College, a

Renfrewshire Apprentice Academy, upskilling the existing workforce and equipping people with the skills that will help them navigate a fast-changing labour market and directly improve business performance and boost the productivity of Renfrewshire businesses.

JOINING UP THE MULTIPLE SYSTEMS? THE REGIONAL PARTNERSHIPS?

Fundamentally, a determined focus on consistently delivering positive impact should create an environment where all system stakeholders collectively aspire to help make the difference the Government wants to make. It should feature intrinsic 'permission' to challenge where the system perpetuates an organisational focus on unhelpful duplication or imbalances in funding.

As colleges increasingly do more to deliver inclusive economic growth and improved business productivity, we should more regularly examine what works, for whom, and why (and why not). In essence we should challenge the system continually to ask itself what do we need to start doing, what should we need to keep doing, and what should we stop doing?

As we have already said, current college activity is narrowly driven by performance measures and funding – so colleges simply do what they are measured to do, with the underlying risk this fails to create a joined up system that works seamlessly for learners, for employers, and businesses, nor deliver the impact to which we collectively aspire for a sustainable and competitive economy.



In particular the current system for colleges is heavily weighted towards a transactional approach, where the emphasis is on regulation, performance, activity targets, and accountability. Imagine instead a future in which colleges confidently support the overall system, clear about their purpose, clear about the impact they seek to achieve, and clear about their responsibilities to the wider tertiary system in which they operate. Ultimately this would mean delivery in the right way to the right people to achieve the right outcomes.

OUTCOME AGREEMENTS (OAS)

Currently, both colleges and universities operate within the Scottish Funding Council (SFC) Outcome Agreement regime. Introduced in 2012, Outcome Agreements (OAs), and their associated processes have now been in place for 8 years. At the time, their introduction represented a significant – and important – change in the relationship between the Government, the SFC, and colleges. In principle, OAs would allow for a clear expression of Government ambition, clarity over the deployment of funding to deliver that ambition, and provide a basis for measuring success. The SFC's most recent guidance describes the purpose of OAs as “help[ing] colleges and universities demonstrate their distinct contribution to SFC's core objectives, in particular, improving life chances, well-being and successful outcomes for students, and contributing to sustainable economic prosperity, in return for public investment”.

“The OA is essentially a joint funding commitment, in which each institution (or college region) sets out the outcomes and outputs it will deliver, reflecting its regional context and specialisms, in response to the priorities set out in the Scottish Government's National Performance Framework. The outcomes will

contribute towards meeting the SFC's national ambitions".

The reality of this process however is that a college OA - currently featuring over 100 individual targets - risks perpetuating an focus on a wide range of inputs, with a lengthy accompanying narrative often describing processes. The development of an OA takes several months, and involves teams of people in each college working with an Outcome Manager from SFC, themselves with responsibility for several institutions, all of whom are developing their own OAs. In short, this has become a labour intensive process, rarely meeting the aim of setting out succinctly what an institution is delivering for its public sector investment, and diverting precious resource from focusing on improved delivery. As it is, it is hard to see the real value the current OA process adds.

In our view, in future, that process should support, rather than conflict with, the increasing need for greater collaboration, greater coherence, shared measures, and collective contribution and alignment across the system to achieve the desired, shared outcomes. For colleges, this must include the sector's contribution to inclusive economic growth and deep collaboration with business and industry, including in partnership with the highly successful Chamber of Commerce network in Scotland.

ENTERPRISE & SKILLS STRATEGIC BOARD

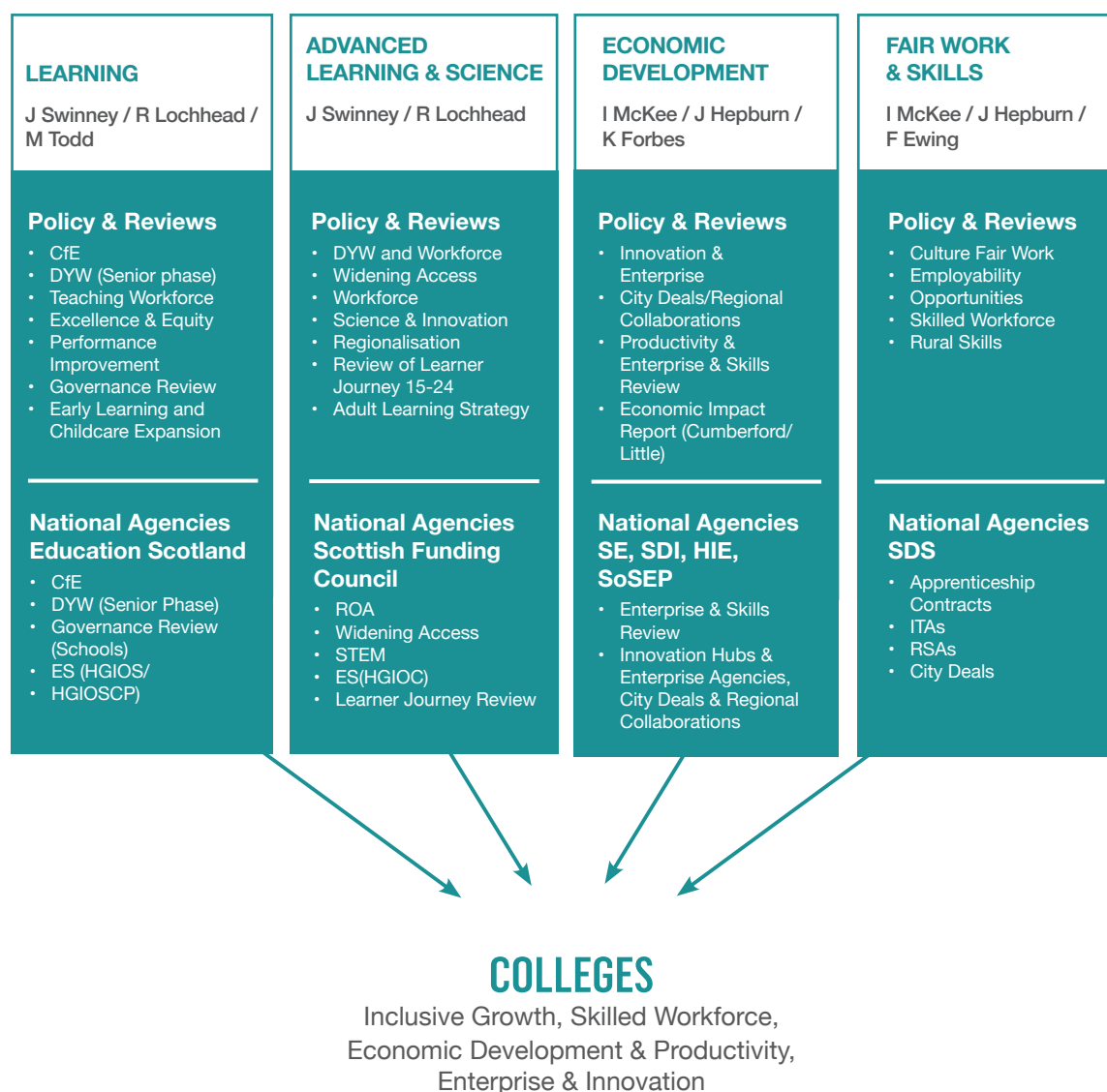
System cohesion is a fundamental goal of the Scottish Government's Enterprise and Skills Strategic Board, established in November 2017. Ultimately the Board's role is to maximise the impact of the collective investment Scotland makes in enterprise and skills development. The Board's approach is to consider how public and private sector partners, locally, regionally and nationally, can provide place-centric, industry-focused assistance that will drive inclusive growth. The ambition is for greater collaboration not just between the enterprise and skills agencies themselves, but right across the whole tertiary and public/private system, with colleges a central part of that landscape.

We have already asserted the inevitability of significant disruption in the near- and longer-terms, and we know the speed of that disruption will also increase (exponentially), not least as a result of the impact of Industry 4.0. We anticipate tensions between the desire for the creation of a coherent administrative tertiary system enabling individual organisational agility and at the same time, the comfort of the status quo and the illusion of stability. We are confident that colleges can become even more agile, flexible, responsive and dynamic and play their full part in a more connected tertiary system and the wider skills system.

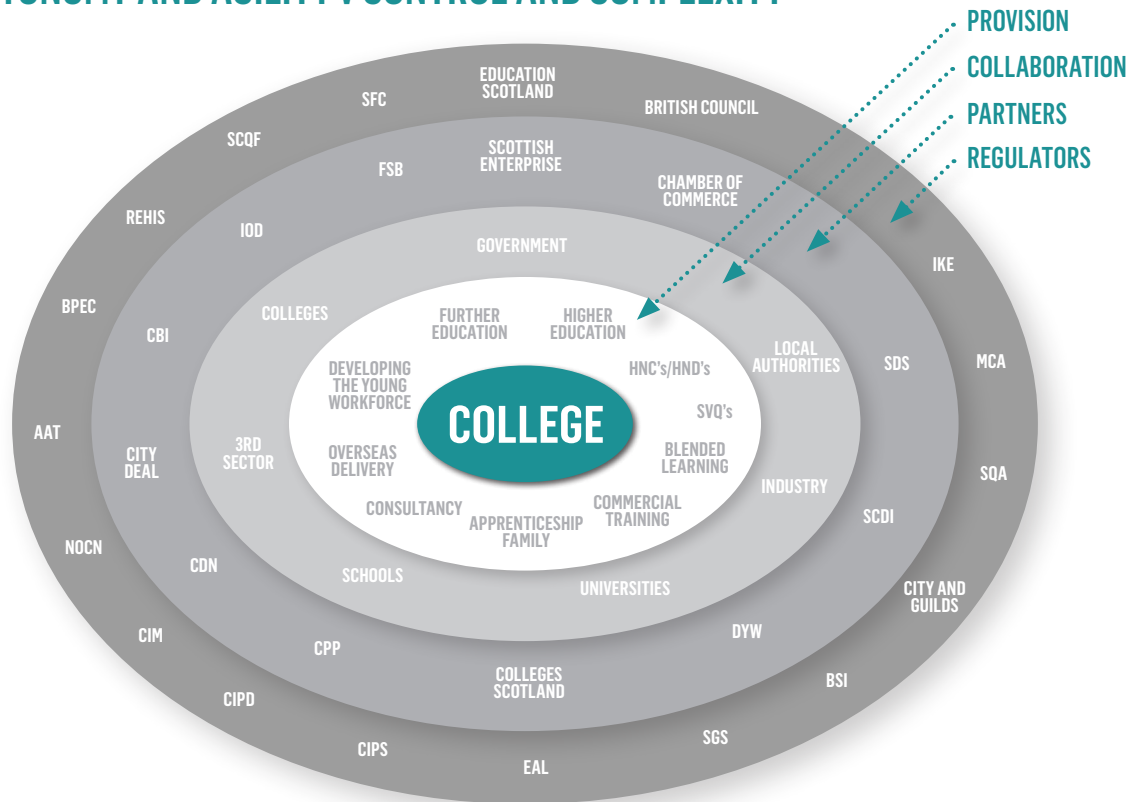
POLICY DRIVERS AND COHESION

The graphics below aims simply to illustrate the breadth of policy drivers, and influencers to which colleges are subject.

Current Policy Landscape - November 2019



AUTONOMY AND AGILITY v CONTROL AND COMPLEXITY



HOW TO LEAD IN A COLLECTIVE LEADERSHIP CONTEXT

The complex VUCA challenges and multiple stakeholder demands confronting college leaders - and leaders across the wider tertiary system – will require leadership across boundaries. However, in a regulatory environment characterised by multiple controls, bifurcated policy, separate performance targets, and an ever tightening public purse, leaders might instinctively ‘hunker down’, avoid high profile innovation and risks, and shy away from adopting or sponsoring new ways of working. In short, leaders default to a defensive posture – the very opposite of what ultimately is required in leadership for a rapidly changing world.

Thought leaders are now advocating innovative leadership styles that transcend hierarchies and embrace eco-system collaboration. Nurturing such collective leadership across the whole educational and skills continuum - and indeed across the wider public sector, and business - must be a Government priority.

To enable this, we have to move away from annual, or short-term funding cycles and ‘biscuit tin’ initiatives which perpetuate the status quo, and distract from medium- and longer-term value creation. As leaders, it is essential to see the big picture, and to realise one’s part in the overall system in an inter- and intra-dependent way if we are to solve the challenges we face. A systems leadership approach must trump self-

and institutional interest in favour of collectively and proactively co-creating the future.

Our consultation has highlighted that the college sector sits in a system where the emphasis is on regulation, performance, activity targets and accountability – direction and regulation come from the top down. While we do not contest the need for robust governance, we must move to greater system leadership, the achievement of shared outcomes, and the collaboration that ensures impact and focus. Remaining wedded to a system overly dependent on reporting, regulation and controls implies a lack of trust in the leadership teams within the overall system and thence to a self-fulfilling prophecy. To this end, we should explore the opportunities for college leaders to take a more active role in the Scottish Leaders Forum, with an explicit brief to develop ways in which better to connect to their peers: investment in discovery and leadership learning across our system is essential. And we should pursue thinking about the possibilities of a ‘staff college’ for the sector, in which best practice in 21st century leadership can be considered co-created, and shared.

Our aim should be the pursuit and promotion of ‘Cross-Silo Leadership’, creating more value for our economy, our society, our nation - and especially our students - by connecting and energising experts from both inside and outside our tertiary institutions. We recognise that many more innovation and business development opportunities lie at the interface between institutions, agencies, regulators and Government. In essence the integrated solutions the economy needs, and that our students and employers want, often requires ‘horizontal’ collaboration. We are mindful that it’s not who is right but what is right for our economy and the future prospects of our students – and our ambition for a highly

connected tertiary system could unleash the potential for this cross-silo approach. We encourage greater boundary crossing, building bridges and go-betweens, and system leaders who ask better questions to help them understand the whole system, create system-wide role models, and help colleagues to learn how to take the perspective of others, to organise dialogue, to hire for curiosity and empathy.

The core challenges of operating effectively at interfaces necessitates ‘learning’ about people on the other side and learning how to relate to them. Humans have struggled throughout time to understand and relate to those who are different. The temptation for government and/or agencies will be to abandon the hard yards required for a new organisational structure for the system. However appealing this might seem, for every problem solved by the new structure it will inherently create other problems as an unintended consequence.

We conclude by identifying the characteristics of 21st century leaders. They are collegiate, collaborative, outward- rather than upward-looking rather, influencers, and open. They routinely build consensus and trust; think at a system level; exhibit emotional intelligence, curiosity, and creativity as they solve problems and as they interact with others. They are accomplished in innovation and delivery, [and use project management ‘cleverly’ to that end]. They solve, problems, are adaptable, creative, innovative, and exhibit social and emotional intelligence. In short they have, and they model, all the meta-skills that our connected, collaborative, agile tertiary system routinely embeds in all its learners. This is the human future we foresee in a VUCA world of AI and robotics. We look forward to working with a peers and partners to make it a reality.

Colleges and the National Performance Framework



1. Globally competitive economy

Both Colleges delivers FT and PT HE and FE vocational and technical learning opportunities to around tens of thousands of students each year, and professional development, international and other courses to many more learners and businesses. Both are similarly extensive providers through the Flexible Workforce Development Fund.



2. Open and connected

Both colleges welcome many thousands of international students each year, and, together have an active export footprint in all six continents. In doing so, they are promoting Scotland's distinctive value set to a global audience.



3. Tackling poverty

Both colleges welcome a disproportionate number of learners from disadvantaged backgrounds, and serve care experienced young people and a range of other protected groups. They similarly engage with community planning partnerships, directly tackling poverty and inequality.



4. Resilient communities

EC welcomes over 30 community and voluntary sector groups to its campuses every week. CoGC's Community Benefits Strategy was part of the new campus project, exceeding targets for (e.g.) new employee entrants and work experience.



5. Growing up loved, safe, and respected

Both Colleges growing childcare provision, consistent with 1140 hours commitment. EC nursery at its Granton provides nursery education to ~ 160 children



6. Well educated and skilled

Both colleges have aligned curriculum strategies with the Government's Economic Action Plan, Future Skills Action Plan Strategy and SDS regional skills assessments. Over 9/10 students secure a positive destination, and nearly 9/10 are satisfied with their college experience.



7. Thriving, innovative businesses

Together, our colleges work with thousands of employers each year, upskilling, and re-skilling in multinational corporates, and family-run micros. They are living wage employers, and deeply engaged with local Chambers of Commerce. EC is working on major economic development and regeneration projects in the region, for example such as the St James Quarter Development. CoGC's Riverside campus delivers world-class maritime training around the globe.



8. Healthy and active

CoGC hosts Scotland's National Chef and its College restaurant models healthy diet. EC's student association runs a wide variety of sports and leisure club activity, and wellbeing activities, engaging/e and support 100s of students each year.



9. Valuing our environment

EC has achieved a 36% reduction since 2013/14 in carbon emissions; CoGC exceeded carbon reduction target with 17% reduction 16-17-18/19.



10. Creative and diverse cultures

CoGC "Embracing Diversity" Competition innovates in embedding diversity culture in curriculum; college is Stonewall UK Workplace Top 100 Employer, top 15 in UK in education sector. EC "BeSafe Group" work on student safeguarding, tackling hate crime, and preventing violent extremism. Extensive art, design, performance, and music courses at both Colleges.



11. Respecting, protecting Human Rights

CoGC protecting freedom of expression, locating 'PREVENT' in a safeguarding context, using student documentary as the basis for PREVENT training -recognising human rights dimension, and cited by multi-agency approach as innovative approach. EC anti-human trafficking and slavery statement ensuring all suppliers comply.





ANNEX A & B

Annex A

CUMBERFORD-LITTLE REVIEW OF COLLEGES: EVIDENCE REVIEW, OCTOBER 2019

INTRODUCTION

1. The Cumberford-Little Review into the impact of Scotland's colleges was launched in August 2019. The review will deliver evidence on the economic impact of colleges, and specifically their role in supporting business. This literature review summarizes the current evidence of both the Scottish college sector and other comparable tertiary education sectors across the UK.
2. The college sector in Scotland provides both further and higher education, with vocational and non-vocational programmes. Colleges in Scotland therefore provide SCQF levels 1-10 which covers higher education up to and including honours degree level. Colleges in England, Ireland and Wales differ and this is noted when discussing the evidence.
3. The report is split into the following sections:
 - The Future of Colleges
 - Economic Impact
 - To individuals
 - To communities
 - To employers
 - Exports
 - Diversity
 - Innovation
 - System Leadership
4. The literature considered covers the above subjects, with specific focus where possible on the connection between college and business. The literature also considers the different players involved in further education: learners, colleges, businesses, government and the broader society including local communities.
The main section on economic impact considers reports on colleges and further education more generally. These look at costs and benefits of provision to calculate a Net Present Social Value. This will be considered in more detail through the Post-school Education and Skills Economic Impact

Framework (ESIF) project launched in 2019 for the Enterprise and Skills Strategic Board.

THE FUTURE OF COLLEGES

5. The future of colleges depends on the economic context in which they operate. From responding to a new post-Brexit economy and the global trends of digitalisation, globalisation and an ageing population. Colleges are well placed to respond agilely to changing skills demand and sectoral shifts. The following section summarizes this environment.
6. In October 2018, the Enterprise and Skills Strategic Board published their Strategic Plan which had four key missions . One of the missions was future skills and an initial response to this was the publication of the Scottish Government Future Skills Action Plan in September 2019 . Accompanying this was an evidence and analysis paper which presented current challenges for Scotland's labour market, focusing on: quality of work, demographic change, structural shifts in the labour market and inequalities in labour market outcomes.
7. In particular, it noted that Scotland's further education colleges are flexible and therefore could be well placed to respond to local labour market demand. Flexibility is a mark of a strong skills system. The German system is seen as an example of a strong vocational skills system, including through understanding the skills needs of manufacturing and business services .
8. The Skills Plan evidence highlights the key challenges to the labour market including demographic change. With an ageing population and accompanying risks to labour supply, workers are expected to stay in the labour market for longer. Demand for retraining and reskilling is therefore likely to rise. Reskilling needs could be exacerbated by Brexit due to the potential ensuing job losses. Therefore a focus on lifelong learning could be beneficial to the economy. The OECD supports a focus on lifelong learning and strengthening adult learning systems. And further evidence supports lifelong learning also in respect to responding to the impact on skills demand and supply by digitalisation.
9. Colleges are also operating amongst significant decades long structural shifts in the labour market. A shift from middle income work to both high and low paid employment has been accompanied more recently by increased employment in medium to high skill level jobs.

10. Another aspect considered was skills demand and the response of colleges. Labour market churn – flows of people in and out of work – is expected to be based around SCQF 7-10 (HNC to Honours degree level) which is expected to comprise around half of labour market churn, followed by SCQF 5 (National 5) comprising around one quarter.
11. Colleges will also face the need to respond to global challenges including the climate emergency. Employment opportunities will arise in the sectors involved in the response to this emergency; however, European Commission analysis has argued that for the UK, this job creation will be concentrated in lower skills work.
12. A second global condition is digitalisation, and the Action Plan comments that to date, most analysis has concentrated on highlighting potential job losses. However, the 2018 report conducted by the Scottish Government in conjunction with the Scottish Trades Union Congress (STUC), 'Technological Change and the Scottish Labour Market', finds that views on the potential impact differ. And 'that the labour market could prove as resilient as during previous waves of technological change'. Soft skills are also expected to be in greater demand with greater digitalisation; with low skilled and repetitive jobs at most risk with automation. The Fraser of Allander Institute note that around 3 in 10 Scottish jobs are at risk of automation. FoA also notes that while many jobs will be replaced, many will also be created. Possibly of more relevance to the localisation of college provision, is that where employment impacts take place there could be negative distributional effects.
13. As the Skills plan evidence presents the OECD argues that skills gaps could be a reason for recent lower labour productivity. In Scotland, across 2015-17 there has been an increase in skills gaps. The ESS divides skills gaps into technical and practical skills and people and personal skills. For businesses in Scotland reporting skill shortages vacancies, the most common technical skill gaps among applicants were: specialist skills needed for the role (59%), knowledge of the organisation's product and services (39%), and solving complex problems (34%). For people and personal skills there were gaps in: ability to manage and prioritise own tasks (46%), managing their own feelings, or those of others (42%), and customer handling skills (40%).
14. In addition, evidence from the ESS (2017) suggests there is variation in skills gaps by sector and occupation. In 2017, the highest skills gap was in manufacturing (7.2%) and the lowest skills gap (2.3%) was in IT and

communications. The density of skill gaps changed markedly from 2015 to 2017. The largest percentage point increase was for both Primary Sector and Utilities and Public Admin (+2.8 percentage points) and the largest percentage point decrease was for Manufacturing (-3.7 percentage points).

15. Upskilling is also important, with 69% of employers expect that at least some of their staff will need to acquire new skills or knowledge over the next twelve months. In 2017, Scottish employers, prompted by ESS interviewers, reported that several reasons induce them to expect higher training needs – new legislative or regulatory requirements (42%), the introduction of new technologies or equipment (41%), and the development of new products and services (39%). However, there is also evidence of skills under-utilisation within Scotland's labour force. With ESS (2017) reporting that, a third of employers (35%) reported having at least one under-utilised employee, that is staff with qualifications and skills beyond those required for the role (up from 32% in 2015). A possible cause may be a mismatch between employees' qualifications and employers' needs.

ECONOMIC IMPACT

16. The economic impact of colleges is significant. This section looks at the impact to individuals, communities, and employers. These are realised through various transmission channels including initial spend on supply of education, and multiplier effects traced through to demand in the local and national economy. In summary, the economy as a whole is benefited via:

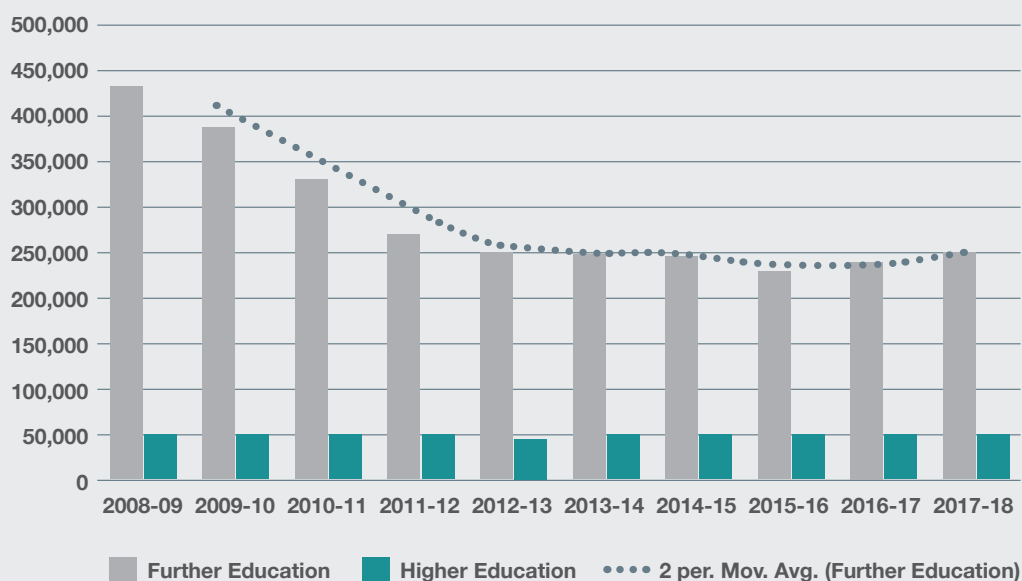
- A boost to GDP due to improved labour productivity
- Increased tax intake due to wage premium
- Spillover effects: increased competitiveness of businesses, knowledge transfer to other employees.
- Multiplier effects: increased wages meaning increased spending in economy, and colleges spending in economy also.

17. The economic impact of colleges can be estimated through various lenses. Firstly using cost benefit analysis and calculating a Net Present Social Value of Benefits of the Scottish further education system. Secondly, looking at the impact on the Scottish economy in terms of the impact of a higher skilled workforce on productivity, the method undertaken by the Fraser of Allander. Thirdly, the importance of considering the numerous multiplier and spillover effects which, though more difficult to monetise, are significant; perhaps more so on the local economy and local communities.

... TO INDIVIDUALS

18. The latest data from the Scottish Funding Council (SFC) show the number of enrolments (303,115) and the headcount (242,488) of Scotland's 26 colleges increased in 2017-18 on the previous year by 3.9% and 2.9% respectively.
19. The overall delivery of college enrolments has reduced over the last 10 years, by 180,357 (37.3%). The number of enrolments in Higher Education has stayed relatively constant at almost 50,000. Therefore HE has accounted for an increasingly higher proportion of all enrolments over this time from 11% to 20%. **See Figure 1.**

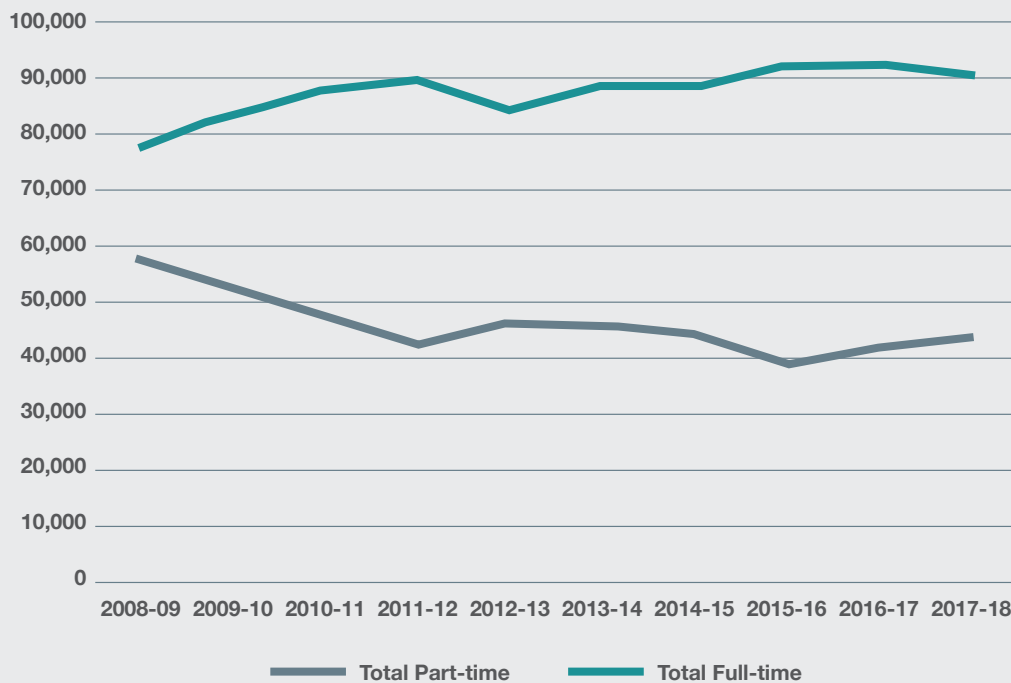
Figure 1: Student enrolments in further and higher education at colleges, 2008-09 to 2017-18.



20. This reduction is partly explained by the reduction of part-time activity whilst full time activity has increased as shown in **Figure 2**. Over the last two years, this trend has started to reverse. In 2017-18, 68% of students were full-time, and 32% part-time. Over the last ten years there has been

focus towards full-time young students in colleges. However, with the expected shift in age demographics across Scotland meaning fewer young people, this may change again towards more part-time activity with colleges enrolling more school age and older students.

**Figure 2: Number of full-time and part-time students
2008-09 to 2017-18.**

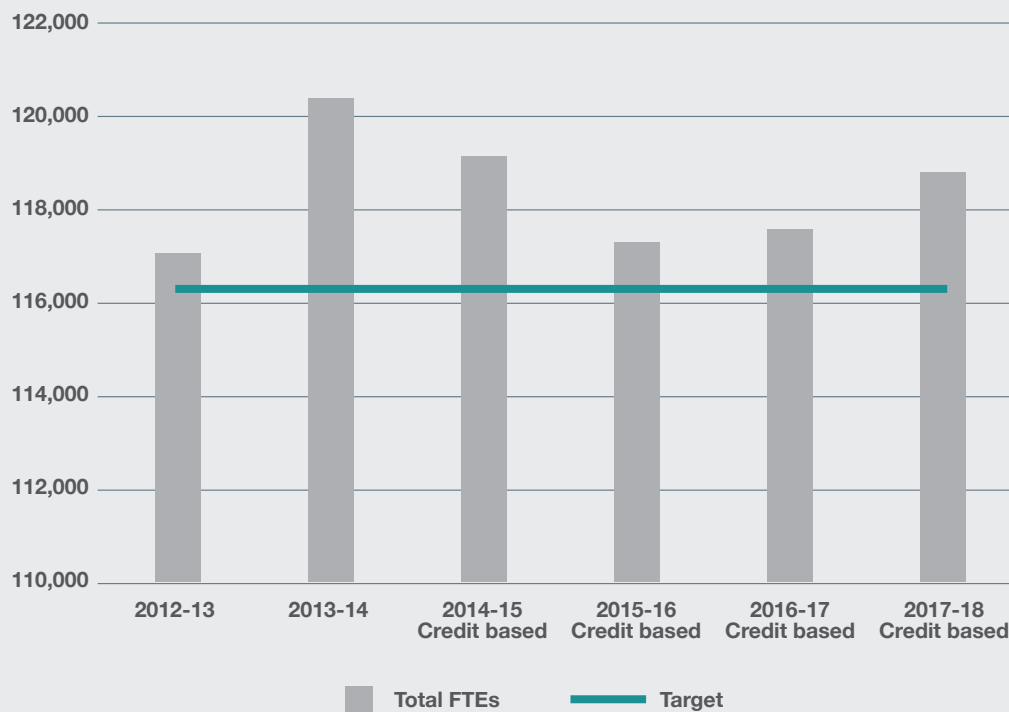


21. Enrolments at colleges split by mode and level in 2017-18 are:

- 32,529 enrolled on full-time HE courses
(1% decrease since 2016-17, 25.4% increase since 2008-09)
- 45,340 enrolled on full-time FE courses
(2% decrease since 2016-17, relatively stable over the last 10 years)
- 17,057 enrolled on part-time HE courses
(5% decrease since 2016-17, 23.9% decrease since 2008-09)
- 208,189 enrolled on part-time FE courses.
(7% increase since 2016-17, 46.6% decrease since 2008-09)

22. In 2017-18 there were 99,031 enrolments on 'Non-recognised qualifications' and 'courses lasting under 10 hours'. This is an increase of over 23% (18,653 enrolments) since 2016-17 and a 53.3% decrease since 2008-09.
23. Since 2012-13, the Scottish Government has set a national target for the college sector to deliver 116,269 FTE student places. This was achieved in 2017-18, and the sector has exceeded the target every year. Exceeding the target by around 2,400 FTEs in 2017-18 and shows in **Figure 3**.

Figure 3: Number of Full Time Equivalent places from 2012-13 to 2017-18.



Costs and Benefits to Individuals

24. The costs associated with undertaking education at college include postponing earned income and purchasing college materials. However, evidence also increases human capital by raising the skill level of individuals. Therefore on the benefits side, students receive a wage premium post-graduation and evidence suggests that students have a higher probability of being in employment (BEIS, 2015). Also, 35% of men and 29% of woman reported that they got a better job because of further education.

Wage Premium

25. Evidence agrees that undertaking further education increases a student's future wage; this is called the wage premium. While many studies on the wage premium analyse university higher education alone, there are a few studies relating to Scotland, the most recent in 2017 by the Fraser of Allander Institute (FoA). The reports noted that individuals undertaking education and training have a higher probability of employment as well as higher wages. A micro-to-macro method is used, first developed in 2014 (Hermansson et al, 2014 and 2016) and lately used in 2017 (Hermansson et al, 2017). This uses relative wages to reflect labour productivity. The evidence concludes that higher education institutions have a significant impact on regional economies due to higher levels of human capital of the graduates. And that this generates greater GDP impacts than demand-driven spending of HEIs.
26. The 2017 study used the same methodology and follows a prior paper by the same name published by The David Hume Institute. The 2017 report looked at a single graduation cohort, concluding that Further Education Colleges (FEC's) are an important source of additional human capital. Using a CGE (Computable General Equilibrium) model of Scotland, it calculated that single cohort created a boost to GDP of 0.126% over a number of decades and a present value of £2.3 billion (relating to the 2011 graduating cohort). The FoA report looks at the 2015/16 cohort, and estimates the boost to GDP at 0.17%, in present value terms £3.4 billion. This amounts to £59,000 per graduate. Looking at multiple cohorts – 2008/09-2015/16 – this rises to £20.6 billion (£2.58 billion per year) and £55,000 respectively.
27. The UK Government carried out studies on the returns to college and further education and in 2015 linked higher education and tax data together to create the Longitudinal Education Outcomes (LEO) dataset. LEO data uses actual HMRC income tax returns to show the true wage premia for cohorts. For colleges in Scotland, this data is still experimental.

28. Prior to having LEO data, the Department for Business Innovation and Skills (now the Department for Business, Energy and Industrial Strategy, BEIS) published a report in 2013 which used the Individualised Learner Record, and the Work and Pensions Longitudinal Study to calculate wage, employment and benefit premiums. For all who achieve a level of learning, compared to non-achievers of a certain level of learning, a wage employment premium were found. The report was updated in 2014 and with similar results. The average wage premium was 5.6%.
29. A report published by BEIS in 2013 used another method of calculating the wage premium: a student survey. This questioned 4000 students also found a wage premium of 2.75%. Of those in employment before they began training, 22% saw a salary increase.
30. Therefore, taken together the evidence is in agreement that a wage premium could be expected following an individual undertaking further education.

...TO COMMUNITIES

31. Our colleges are placed in communities; the individuals and business that live, work and operate alongside the college. There is limited evidence in this area, but a 2011 Commission on Colleges in their Communities (related to English further education colleges only) found that investing in colleges results in social returns. The report found that colleges are embedded in their communities and were benefited from local decision making. Two levels of engagement were highlighted: employer engagement, and learner involvement in design of curriculum.

Wage Premium as Part of Cost Benefit Analysis

32. The wage premium can also be used to measure impact to society by measuring Net Present Social Value of Benefits using cost benefit analysis. This includes the wage premium as one of a basket of benefits, which is compared to costs. This method does not report a direct impact to the economy, but an overall value to society.
33. For England, BIS commissioned research in 2009 estimating the Net Present Value (NPV) of further education in England. The English FE system is not directly parallel to the further education system in Scotland however provides a useful comparison. For the benefits, the report considers the wage premium but also better employment prospects for learners and 'spillovers' to other individuals and employers. For the costs the report considers: foregone output during training, student funding and fees paid

by individuals or employers. The evidence shows a positive NPV for all levels of further education analysed. A 2015 update to the analysis shows the Net Present Benefits of a single cohort (2013/14) as £79 billion and Net Present Costs as £9 billion: therefore a NPV of £70 billion.

34. A 2015 report by Emsi, an international consultancy estimated the economic impact as well as the Net Present Value of the Scottish college sector. For 2013/14, the estimated NPV across learners, society and the taxpayer, at £6.2 billion, £16.7 billion, and £2.8 billion respectively. The report also considered the economic impact of staff and college expenditure (£700 million) and the impact of added skills to the Scottish workforce (£14.2 million).

Anchor Institutions

35. In recent years the concept of anchor institutions has been increasing in the UK, having originated in the United States. Although the UK definition of anchor institutions is not clear, the UK Commission for Employment and Skills note three main characteristics: strategic contribution to the local economy, large size, and spatial immobility. Their 2015 report does not specify further education colleges as anchor institutions, however it could be argued that since the uniting of several colleges in Scotland, a number of Scottish colleges more closely match the three characteristics mentioned. Therefore acting as an anchor institution, a college can contribute to encouraging economic regeneration of an area. They do this directly by employing staff at the college and indirectly by stimulating investment from other businesses.

Wider Social Impacts

36. Colleges can also contribute to wider social conditions. Evidence gathered for the Future Skills Action Plan finds a relationships between education and health and social outcomes. Those with higher levels of education are more likely to be engaged politically and socially and live healthy lives. On the later, self-reported health data shows that increased education levels links to better general health and lower levels of long-term physical or mental health condition.

...TO EMPLOYERS

37. The economic impact of colleges to employers includes the supply of skilled labour and encouraging innovative business practices. In 2017-18, 42.4% of full-time college qualifiers are known to have left the sector, with 57.6%

remaining in the sector to continue study. Of those known to have left the sector, 89.6% confirmed their destination 3-6 months after qualifying: 49.3% went into work; 39.8% went on to university, and the remaining 11.0% were unemployed or unavailable for work.

Skills and Productivity

38. The Skills Action Plan evidence highlights that education and skills are key drivers of economic growth and productivity. Skills development can raise productivity by enabling individuals to do more advanced tasks. Research published by the Department for Business Innovation and Skills estimated that around one fifth of the UK's productivity growth between 2001 and 2013 was attributed to improvements in skills levels – rising to one quarter when including workforce training. High-level skills development was also found to have been a particularly strong driver of productivity in the UK compared with other European countries. In addition, the OECD report that job-related training can respond to skills gaps more efficiently than formal education.

39. As well as the college leavers entering work, one key aspect of college provision is the flexibility of students to simultaneously work and study. Therefore allowing for the potential of new skills to be quickly applied. Data from the Scottish Funding Council shows that nearly 30,000 students undertake day release studies, and over 10,000 undertake assessment of work based learning. These figures do not include other part time and distance learning study, all of which might allow students to continue working while studying. Overall it's recorded that in 2017-18, 74,594 students are in permanent or temporary employment. Even with the trade-off of staff working part-time, businesses could be supported through this supply of labour.

Apprenticeships

40. Another key partnerships with business is through Modern Apprentices (MAs) which will be included in the above figures. Skills Development Scotland data notes that as at 28 June 2019 there were 36,767 MAs in training. Of all MAs, 81% are in higher level frameworks (VQ level 3 and above, or SCQF level 6 and above). These can either be delivered in the workplace or in partnership with a college or other training provider. Scottish Funding Council data shows that in 2017-18 there were 10,650 college students on YT/Skillseeker/New Deal/Modern Apprenticeship; highlighting that a level of training aligned to MAs is not delivered by colleges.

EXPORTS

International Students and Staff

41. Colleges play a role in the global sphere by welcoming students and employing staff from across the world. The latest data shows there were 1,115 student enrolments from overseas: a fall from a peak of over 2000 in 2014-15. In 2017-18 there were 553 student enrolments from the EU, an increase from previous years. Most of the evidence on the economic impact of international students concerns universities due to the low number of international students at colleges. Over the past 18 years, the proportion of international students in higher education has grown from around 10% to 22% of the overall student body. The number of international enrolments at colleges as a proportion of all enrolments is small however these students will then join an international group of alumni and support the soft power efforts of spreading awareness of the Scottish college sector.
42. In 2018, the Scottish Government published a report in response to the UK Migration Advisory Committee on the impact of international students to Scotland. The direct economic impact includes the income to colleges from fees and spending by students in the local economy. Of interest also is the cultural and social aspects of learning across nationalities. An earlier report, commissioned by Colleges Scotland in 2012, looked at the impact of international activity of Scotland's colleges. The report notes the revenue that international activity generates, and the additional impact of international student expenditure on the local economy.
43. Scotland's export strategy, A Trading Nation, highlights the power of international networks of universities, colleges and their alumni. The strategy notes that the education sector has links with similar institutions around the globe, and these are often underutilised. Alumni can benefit Scotland by using networks and connections to support exporting and promote Scotland. This is an untapped resource the strategy notes. In addition, the export strategy highlights that evidence suggests a two-way link between exporting and innovation.

DIVERSITY

Widening Access

44. In 2016, the Commission on Widening Access published its final report 'A Blueprint for Fairness' with 34 recommendations. One key recommendation was

'By 2030, students from the 20% most deprived backgrounds should represent 20% of entrants to higher education. Equality of access should be seen in both the college and university sectors.'

45. The latest data published by SFC shows that that percentage of entrants to HE (universities and colleges) from the 20% most deprived areas was 18.9% in 2017-18. It's noted that this is in part to colleges receiving a relatively higher proportion of entrants from deprived areas. Colleges have higher numbers of students from the most deprived 20% than universities. With data for 2017-18 showing that the proportion of entrants from the 20% most deprived areas is over 30% in Further Education, and over 20% in Higher Education. These figures are also increasing over time.

Technical and Vocational Education

46. In 2013, the OECD published a report in 2014 as part of the Reviews of Vocational Education and Training on 'Skills beyond School'. The report highlights that such education systems play an under-recognised role in the skills system. This is partly because no more than a one or two years of career preparation beyond secondary school is required for many professional and technical jobs. Moreover, it's predicted that job growth is expected to be mainly in sectors most linked to this type of learning.
47. A main theme of the OECD report is the importance of collaboration to ensure training provision matched training needs in the labour market. As well as overcoming institutional and funding barriers including: offering short-cycle professional programmes in a tier of institutions separate from universities, and consolidates training providers into institutions of adequate size. And related to the later, to have an institutional framework to co-ordinate the offer of post-school education, engage employers and organised labour. Thereby supporting stakeholders understanding and access to programmes and qualifications.
48. The quality of post-secondary programmes are seen through ensuring integrating work-based learning, vocational teaching with industry knowledge, and ensuring adequate literacy and numeracy of students. The OECD also highlight key characteristics of effective vocational systems:
- Deciding on provision and meeting needs: How the mix and content of vocational programmes are determined
 - Delivering quality: How vocational skills are imparted to learners

- Using learning outcomes: How skills are assessed, certified and exploited
- Supporting conditions: The policies, practices and institutions that underpin vocational education and training

INNOVATION

49. Colleges play a role in the innovation landscape of Scotland. The independent review into Innovation Centres in 2016, highlighted that the success of Scotland's colleges can be:
- 'through innovation of business products, but is more often about delivering skills, and through those enhanced skills, improved productivity and efficiency. The delivery of skills is not some sort of "secondary" innovation – developing new skills and techniques to apply alongside new technological innovation is vital if such developments are to be embedded and made truly a commercial success.'*
50. The review recommended closer alignment of colleges with Innovation Centres and noted the potential of this partnership is partly due to the links colleges have with local business.
51. The Enterprise and Skills Review (ESR) 2017 report on Phase 2: Innovation notes the good connections between colleges and the local business base. Therefore colleges are well placed to support innovation in that group. Also highlighted was the need to ensure alignment between innovation, and the accompanying technical development and skills. Businesses reported a mixed experience of interacting with universities and colleges. A key issue is businesses not having the time to find out what innovation activities are taking place. The report also notes that colleges need to be freed up and encouraged to work more closely with businesses on innovation. Actions embedded in the report concerning colleges were around improved communication to business of ongoing activity and further consideration of in-work training.
52. The Phase 2 report reiterates that workplaces are at the heart of innovation processes. A priority is to make use of university and college research, knowledge and talent. A priority of the Innovation Action Plan is to make best use of university and college leadership to enable innovation. This includes colleges delivering leadership and entrepreneurial skills training; and encouraging demand-led research.

SYSTEM LEADERSHIP

53. In Scotland, the Enterprise and Skills Review also played a significant role in the system leadership in Scotland by recommending the creation of a new board. The non-statutory Strategic Board was formed in November 2017. Its objective is to align and co-ordinate the activities of Scotland's enterprise and skills agencies: Scottish Enterprise, Highlands and Islands Enterprise, Skills Development Scotland and the Scottish Funding Council. The Board consists of representation from these agencies plus education providers including colleges.

54. In the UK as a whole, the independent Skills Commission published a report in 2016 on innovation and leadership in the further education and skills system in the UK. Innovation in this context was seen as 'how every new generation of leaders adapts and responds to their context'. Key themes emerging included providers having an understanding of who they were serving at the delivery level; and being responsive to learners, employers and regional and national economies. At the forefront of providers innovation approach was employer engagement and ownership over what the colleges delivered. Therefore a focus emerged of developing strong partnerships with stakeholders including industry. The report sets out 14 recommendations including on flexible provision that is responsive to needs and partnering college employees with industry to 'future proof' staff.

55. A previous UK wide report in 2014 looks closely at college and employer engagement. Leadership is reported to be the key ingredient for a college's ability to contribute to economic growth. The type of leadership skills of greatest importance was where colleges were strongly connected to employers. Notably they possessed strategic leadership that determined the purpose and fit of colleges in the local economic ecosystem. The report summed up their thinking with four key statements:

- Colleges are central to their economic community
- New leadership skills needed to develop strategic partnerships
- Colleges credibility is connected to their offer
- Employers need to engage in dialogue about their workforce plans

56. As referenced earlier, the Commission on Colleges in the Community also find that to achieve the social returns possible, a college needs entrepreneurial leaders, developing partnerships and ensuring college involvement in local level planning.

CONCLUSION

57. Colleges have much to offer learners, employers and the community in which they operate. Although the type of students study – part time or full time, further or higher education – is changing, the role of colleges remains the same: to skill learners for work. Individuals have the potential to earn more, and have better employment opportunities due to college. Employers have better skilled employees. And communities are supported through colleges acting as anchors in the locality in which they operate.
58. The future of the labour market and economy determines the agility required by colleges going forward. Faced with automation and ageing population to name only two, means the labour market demand will change and colleges are in a good place to flexibly respond.
59. But colleges have a wider role. In international relations, local strategic economic leadership and improving diversity of intake and outcomes across education, colleges can create significant impact. Evidence shows that colleges have a role to play in innovation too, through linking with local business and contributing to improving productivity.
60. Overall, the evidence shows that colleges play a significant role in contributing to economic impact. This is notably seen in supporting local business through creating partnerships, learning skills needs and delivering an offer fit for purpose.

- ¹Scottish Government (2018), 'Enterprise and Skills Board: strategic plan'.
- ²Scottish Government (2019), 'Scotland's Future Skills Action Plan'.
- ³Augar et al. (2019), 'Post-18 review of education and funding: independent panel report'.
- ⁴Hutfilter et al. (2018), 'Improving skills and their use in Germany'.
- ⁵Scottish Government (2019), 'No-deal Brexit: economic implications for Scotland'.
- ⁶OECD (2019), 'OECD Employment Outlook'.
- ⁷Keep E. (2019), 'The impact of digital innovation on education, training and skills – some initial thoughts', unpublished.
- ⁸Bell and Eiser (2013), 'Inequality in Scotland: trends, drivers, and implications for the independence debate'.
- ⁹Skills Development Scotland (2017), 'Job and Skills in Scotland: the evidence', page 15.
- ¹⁰European Commission (2019), 'Employment and Social Developments in Europe 2019'.
- ¹¹Scottish Government (2018), 'Technological change and the Scottish labour market'.
- ¹²Bakhshi and Schneider (2017), 'The Future of Skills: Employment in 2030'.
- ¹³ONS (2019), 'Which occupations are at highest risk of being automated?'.
- ¹⁴Fraser of Allander (2018), 'Scotland in 2050: Realising our global potential'.
- ¹⁵Centre for Cities (2018), 'The rise of the robots could compound Britain's North/South divide – with 1 in 4 jobs at risk in cities outside the South'.
- ¹⁶OECD (2017), 'Getting Skills Right: United Kingdom'.
- ¹⁷UK Department for Education (2018), 'UK Employer Skills Survey 2017'.
- ^{xviii}UK Government (2013). 'The Impact of Further Education Learning'.
- ^{xx}Fraser of Allander Institute, September (2017). 'The value of college graduates to the Scottish economy'.
- ^{xxi}Hermannsson, K. et al. (2014). 'The Regional Economic Impact of more Graduates in the Labour Market: A "Micro-to Macro" Analysis for Scotland'. *Environment and Planning A*, vol.46, pp. 471-487.
- ^{xxii}Hermannsson, K., Lecca, P., Lisenkova, K., McGregor, P. G. & Swales, K. J. (2016). 'The External Benefits of Higher Education. *Regional Studies*, (Accepted for Publication) forthcoming.
- ^{xxiii}Hermannsson, K. et al (2017). 'How much does a single graduation cohort from further education colleges contribute to an open regional economy?'. *Spatial Economic Analysis*, (Accepted for Publication) forthcoming.
- ^{xxiv}The David Hume Institute, October 2012. 'Further Education, the Scottish Labour Market and the Wider Economy'.
- ^{xxv}The FoA report does not monetise the wage premium, but uses wage premium rates as given by Walker and Zhu (2007). This is used to calculate the efficiency units of each worker and therefore the increase of available efficiency units of skilled labour. The latter is inputted as a productivity shock to the CGE model.
- ^{xxvi}Scottish Government (2019). 'Longitudinal Educational Outcomes (LEO) from Universities: 2016/17: Scotland'
- ^{xxvii}UK Government (2013). 'Estimating the Labour Market Returns to Qualification Gained in English Further Education using the Individualised Learner Record (ILR)'
- ^{xxviii}UK Government (2014). 'Further Education Learners - Average Earners Post Study – 2010/11 to 2012/13'.
- ^{xxix}UK Government (2013). 'The Impact of Further Education Learning'.
- ^{xxx}Independent Commission of Colleges in their Communities (2011). 'The Final Report of the

Independent Commission on Colleges in their Communities

^{xxx}UK Government (2015). 'Measuring the Net Present Value of Further Education in England'.

^{xxxi}Emsi (2015). 'Demonstrating the economic value of Scotland's Colleges'.

^{xxxii}UK Commission for Employment and Skills (2015). 'Anchor institutions and small firms in the UK: A review of the literature on anchor institutions and their role in developing management and leadership skills in small firms'.

^{xxxiii}UK Government (2012). Evaluation of the Impact of Capital Expenditure in FE Colleges

^{xxxiv}OECD (2013). 'OECD Skills Outlook'.

^{xxxv}Hahn and Truman (2015), 'Education improves public health and promotes health equity'.

^{xxxvi}Scottish Government (2018). 'Scottish Survey Core Questions 2018 Supplementary Tables'.

^{xxxvii}Scottish Funding Council (2019). 'College Leaver Destinations 2017-18'.

^{xxxviii}BEIS (2015). 'UK Skills and Productivity in International Context'.

^{xxxix}OECD (2019), 'OECD Skill Strategy 2019'.

^{xi}Scottish Funding Council (2019). 'Analysis of Further Education Awards for year 2017-18: Mode of attendance'.

^{li}Scottish Funding Council (2019). 'Analysis of Further Education Awards for year 2017-18: Student category'.

^{xiii}Skills Development Scotland (2019). 'Modern Apprenticeship Statistics'.

^{xiii}Scottish Funding Council (2019). 'Infact database'

^{xiv}Scottish Government (2018). 'The impact of international students in Scotland: Scottish Government response'.

^{xiv}Colleges Scotland (2012). 'The economic impact of the international activity of Scotland's colleges'.

^{xvi}Scottish Government (2019). 'Scotland: a trading nation'.

^{xvii}Scottish Funding Council (2019). 'Report on Widening Access 2017-18'.

^{xviii}OECD (2014). 'OECD Reviews of Vocational Education and Training skills beyond school'.

^{xlix}Scottish Funding Council (2016). 'Independent Review of the Innovation Centres Programme'.

ⁱScottish Government (2017). 'Enterprise and Skills Review report on Phase 2: Innovation'.

^{li}Scottish Government (2016). 'Enterprise and Skills Review: report on Phase 1'.

^{lii}Skills Commission (2016). 'GOING PLACES Innovation in Further Education & Skills'.

^{liii}157 Group, Gazelle Colleges Group and UK Commission for Employment and Skills (UKCES) (2014). A New Conversation: employer and college engagement'.

Annex B

GLOBAL TECHNOLOGICAL AND VOCATIONAL TRAINING – A BRIEF SUMMARY

How does Scotland compare internationally? In short, the standard of our technical and professional proficiency compares favourably, and the innovation of our pedagogy and campuses is currently of a global role model standard. We are involved in much more than international student recruitment or institutional partnership building.

The countries against which we benchmark have been selected for three key factors:

- those with the largest GDP;
- the UK's top trading partners; and
- those performing well in WorldSkills competitions over the last 8 years.

China, Germany, and France meet all these criteria. (So too does Italy, but since it is represented in WorldSkills by South Tyrol whose TVET system is not aligned with Italy's we have excluded it from consideration).

We have also considered Switzerland (a top 10 UK Trading Partner, regarded as having the most successful skills system in Europe); Austria (the second most successful TVET Country in Europe); and Brazil and Japan since both top are 10 GDP Countries with successful TVET systems. Finally, we have considered Russia in the light of the skills policies established by its Government over the last 5 years which are starting to have a major impact.

We have not conducted a comprehensive review of college systems in these countries; rather, we are looking at the strong factors, including Government influence, that combine to produce 'skills success'.

CHINA

The motivation for China's enormous investment in TVET over the past 20 years has been its Government's concern of a 'missing technician class' and that the recent stall in growth is in part the result of a labour force with insufficiently high skills. China also needs to develop skills in the centre and west of the country to encourage employers to locate there, helping raise living standards nearer to those on its East Coast, and stem the drift of millions of Chinese eastwards. Individual cities and regions have considerable authority to develop TVET, subject to approval by the central Government. This blend of

centralisation and semi-autonomy has served China well. Moreover, employers are more closely aligned to the State than in almost any other country, ensuring their voice in the TVET agenda is de-facto that of the Government. This has to date paid dividends.

Chinese colleges train to a good, though not excellent, standard. 'Centres of Excellence' are being created in a limited number of colleges, and are responsible for the raising of standards taking place. College students, and those in Centres of Excellence are used to living away from home for extended periods, allowing significantly more 'contact time'. And students attending colleges in the east increasingly arrive with basic education standards higher than before, in turn raising College standards.

China's ambition is for a workforce trained to a standard where 'Made in China' is a positive brand, and its focus on quality rather than quantity is bearing fruit.

GERMANY

TVET is embedded as part of the German culture, highly respected by parents and industry alike. The dual system is a model of vocational education, fundamentally unchanged for 50 years, though adapting to take account of labour market demands, themselves well researched by both employers and government. This stability and flexibility has ensure a clear understanding of the system among the German population, allowing continual improvement rather than wholesale change.

Labour and skills targets are set and revised by employers, ensuring that both encourage employers to invest in skills for the long term. The main strength of the German system is the integration of employers and other social partners in the research, development and delivery of TVET. Moreover, the Government at Federal, State and Municipal levels, is, with employers, careful to maintain the quality of TVET through considered policy leadership. Importantly, the 'Dual System' has always been a legal requirement for German business which readily complies, despite the cost.

Schools and colleges delivering 'out of company' work are well resourced and teachers/trainers are experienced in the areas they teach; workplace trainers are likewise trained to teach, a major factor in keeping teaching methods up-to-date. Participants in the Dual System are considered the 'crème de la crème', and normally move on to become 'Meisters'. They have high levels of core skills such as literacy and numeracy. Throughout, the TVET process is highly regulated.

SWITZERLAND

Switzerland uses the German Dual System Model (calling it “in-Company” training) but, like Austria, has adapted it to reflect national needs. Switzerland has the highest level of secondary education in Europe, ensuring schools and colleges can bring a particular focus to TVET.

Schools and colleges are well resourced, staffed by excellent teachers and they playing a a strong role in the Social Contract underpinning the Dual System. The Social Contract, while driven by employers, is closely monitored by the Federal and Canton Governments which conduct national assessment. The cost of training is generally borne by employers who consider the benefits well outweigh the cost. Employers in Switzerland, like in Germany and Austria, carry out considerable skills forecasting which is fed back into the system.

‘Graduates’ of the Swiss Dual System are highly qualified and well respected, and excellent careers guidance during secondary school ensures that TVET is regarded as a quality path.

AUSTRIA

Like Switzerland, Austria has adapted the German Dual System to its requirements, integrating college/school learning with work. Again, this creates high levels of cooperation between social partners on TVET design and delivery. However, the system is acknowledged to be very expensive.

TVET Colleges in Austria, more so than Germany and Austria, have a dual purpose. First, they are the route for high achievers, with many courses lasting five years, with progression to ‘professional’ careers and high paid jobs. Second, they act as a safety net for those who have failed at secondary school level. However, those that succeed in the Dual System have very high level of secondary school achievement. Austrian teachers in TVET schools and colleges must have industry experience.

FRANCE

France’s TVET System is in a period of transition with the historical ‘centralised’ model giving way to an industry-driven decentralisation of authority and policy to the regions. More than almost any other country, France has focused on ‘lifelong’ learning and its apprenticeship schemes build on this concept. In addition, the social partnership comprising Government, employers, educators and trades unions is particularly strong, emphasising the importance of citizenship and full engagement in social life.

RUSSIA

President Putin and the Government of the Russian Federation have been clear on the priority of improving the quality and efficiency of its workforce. The aim is to move Russian's economy from a reliance on fossil fuels and extractive industries to a 21st century manufacturing base where it can sell goods made in Russia domestically to Russians (reducing its reliance on imports); and develop a more lucrative export market for quality "Made in Russia" products.

To this end the Russian Government has embarked on a programme of modernising colleges in all cities and regions of Russia and radically improving the standards of TVET teaching and teachers. Russia has integrated global standards of excellence into new curricula, and those are now mandatory. Regional improvements in skills are rewarded with greater budgets, and failure is judged unacceptable.

Russian industry has been pushed to participate in the development of apprenticeship and in-work programmes to deliver excellence. There is some evidence this programme is working and that standards are rising, though from a very low base.

BRAZIL

The improvement in TVET in Brazil was driven by employers who are liable to a levy on labour costs. SENAI, an agency of the Employers Association (CNI) is charged by both the Federal and Regional Governments, and its very strong employer base, to deliver skills to a level determined by the needs of employers.

There is no National Qualifications Framework at present, although there have been attempts to develop one; likewise, there is no Federal Quality Assurance Programme. Colleges and Schemes run by SENAI are of a high standard, but programmes run by the Regional or State Governments less so.

The one strength in Brazil's TVET is that administered by SENAI using the employers' levy and the subsequent engagement of employers at all parts of planning and delivery.

JAPAN

Japan has the lowest regard for TVET amongst OECD countries, with a vocational study and career path afforded a considerably lower status than an academic route. Historically, most high quality TVET has been delivered within businesses, and a few very good private TVET Colleges. But this position is changing because of Japan's economic position, and the 'offshoring' of much

of Japanese manufacturing. And while the Government is developing a range of specialist TVET Colleges to respond to industry requirements, there is very little in the way of federal quality assurance and no National Skills Framework.

USA

The USA has the most decentralised TVET system of all major Countries. This is both a strength and a weakness. The 'system' is very flexible and highly responsive to the needs in each State and its employers. But there is very little federal control or planning of quality and coherence of qualifications and credentials across State lines; as a result, there is a large degree of short-term planning and labour forecasting. In many states, basic skills of literacy and numeracy among many school leavers is low; Community Colleges, which are often good at teaching TVET, are therefore also required to make up ground by teaching basic skills. There is concern among state educators that skills across the US are falling behind many global competitors, a position that may be compounded by the current Federal Government's "America First" philosophy.



cityofglasgowcollege.ac.uk

edinburghcollege.ac.uk

CITY OF GLASGOW
COLLEGE

 **Edinburgh**
College