9. Getting further education right in innovation policy

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9.1 INTRODUCTION

Skills and skills development for innovation have long been a pillar of UK innovation policy. The 'People'' pillar of the UK Innovation Strategy focuses on skills for innovation, entrepreneurial skills, and technical skills, and stresses the importance of expanding and diversifying skills pipelines (BEIS 2021). A variety of initiatives, such as the Lifetime Skills Guarantee, Skills Accelerator Pilots, Institutes of Technology, and Further Education Innovation Fund, have elevated the role of further education in contributing to the innovation economy. The present period is one characterised by policy experimentation that focuses on two key aims: (1) increasing skills development and improving alignment with labour market needs, particularly through expanding engagement with business, and (2) embedding further education colleges (FECs) as innovation intermediaries by expanding expectations and programming around business engagement and support.

While this experimentation may contain the seeds of sustainable policy strategies, what has resulted to date could be described as tentative and overlapping, often anchored in short-term or pilot programmes, with several initiatives that have been significantly delayed or cancelled. Regulatory changes and unevenness in devolution (and capacities of recipient authorities) have further complicated things.

Far from an indictment against policy architects, the status quo reflects the traditionally uneasy relationship that exists between further education and innovation policy. While they are clearly instrumental in skills delivery, given the wide range of offerings from 16-to-19-year-olds, adult education, accredited technical programmes, level 4–6 courses that overlap with university curricula, and bespoke training courses, policy makers and researchers have struggled to zero in on *which skills* are most crucial to the innovation agenda

(and how best to support them). As anchors in local innovation ecosystems, there has been an expectation that FECs can, and should, deliver more than just skills to the business community, and colleges have been variously urged, supported, and incentivised to provide business innovation support via consulting services, facilities, shared capital access, data and knowledge sharing, and network facilitation (Baxter 2019). FECs have countered that there are many barriers to delivering on these expectations, and predictably foremost among these has been a chronic lack of consistent resources to support these activities (Vorley et al. 2021).

Mirroring similar debates in the higher education space, these tensions are fueling ongoing conversations about what further education is for, and for whom. Should colleges prioritise the interests of learners and communities or industry and an innovation agenda? What are the overlaps and trade-offs between these two objectives and how can they be reconciled? In the short term, policy will continue to link the two with hopeful claims that they are mutually reinforcing while pursuing largely parallel interventions spearheaded independently by the Department for Education (DfE) and branches of the Department for Science, Innovation, and Technology (DSIT). In the longer term, a wider view is needed.

Recent research has provided new insights, which could potentially help chart a new course and catalyse innovations in further education innovation policy. This work has highlighted how FEC diversity challenges the 'one size fits all' approaches, how linear thinking has led to the misidentification of economic impacts, how exogenous forces are an important part of understanding skills gaps and mismatches, and suggested that FECs may generate more impact by deepening, rather than expanding, business engagement. We argue that understanding and analysing the role that FECs play in innovation using a systems lens opens up the potential for a variety of innovations in innovation policy. These findings, unpacked in more detail in the following sections, suggest that the potential for innovation in this policy area lies in embracing the diversity of and empowering business engagement and innovative outreach efforts that are already underway in FECs and using the tools of devolution to build on and create space for local impact. They also argue for a broader understanding of impact, taking into account the influence of feedback loops and time lags and recognising key intersections and interdependencies. These efforts would be facilitated and enhanced by greater coordination between DfE and agencies within DSIT.

9.2 RETHINKING THE PLACE AND POTENTIAL OF FECS IN INNOVATION POLICY

Recent research conducted in partnership with the Gatsby Foundation, The Productivity Institute, and the Innovation Caucus, which linked stakeholders across DfE and Innovate UK (IUK), has challenged some of the core precepts around the role of further education in innovation. That project interviewed 16 FECs to get a sense of their engagement with their local economies and contributions to their innovation ecosystems. The findings contradicted many expectations based on a previous review of the literature and, in so doing, revealed nuances that can contribute to innovating in this policy area.

First, while there were common threads to the experiences of FECs across the country, there were significant differences that suggest that 'one size fits all' approaches are not likely to be appropriate across differing contexts. FECs in the UK are incredibly diverse on a wide variety of metrics including size, governance arrangements, offerings, industrial expertise, and local milieu, to name just a few. The sample was selected in part to maximise this diversity. For instance, it included one urban FEC with specialised programmes in hospitality and rail equipment maintenance, and another urban college with close relationships with professional sports teams and a programme in broadcasting. But it also included a college group that spanned three different LEP areas with campuses that were relatively distant from one another and embedded in different community contexts. Some colleges were quite far from any other further or higher education provider while others were in close proximity and had relationships with these competitors/potential partners that differed in cordiality.

How colleges build relationships with businesses, which specialisms they elect to develop, what courses they offer and at which campuses, how those programmes are funded, and how they interpret the most significant needs in their communities will all differ significantly with the contexts within which they are embedded. Given this variety, it is unreasonable to expect that they are all equally well equipped to deliver on national innovation priorities or that those priorities are appropriate to the needs of their communities.

Second, this research revealed that the FECs in the sample all engaged with their communities and with businesses through multiple mechanisms, for example with individual relationships related to apprenticeships and training, business development partnerships, participation in local governance entities, and more. Contrary to expectations that business engagement would be pursued as a bolt-on activity and in response to coaxing from Ofsted or through other government programmes, the FECs unanimously described engagement as fundamental to their skills offering and core to their mission of serving

their *communities*. This point is particularly critical for innovation policy makers to understand. FE providers understand that their activities have economic impacts and are aware of their potential roles in innovation systems. However, they view their *missions* as much broader, through the lens of community benefit, which places learners, and the expansion of their opportunities and wellbeing, at the centre of their strategies. This enables them to see impact in a more complex and nuanced way: a student who gets an accounting degree might never revolutionise the accountech industry, but they might start a business locally, or help a local business to grow. Or they might go away and practise at a firm somewhere else, learn the ins and outs of a new industry and, years later, create a new product or innovate a business model. The possibilities are endless. Those impacts may be local but they may not be. Accounting might have been a skill that was in demand, but maybe it wasn't one of the 'priority' occupations. Either way, the contribution to innovation of a basic accounting qualification is difficult to track. Regardless, the learner improved their prospects as a result of their time in the FEC, and the community, defined broadly, is better for it. Whatever the ultimate impact on innovation, if any, that training was transformational.

Policy perspectives often oversimplify complex systems and fail to capture the longer-term impact of interventions. The skills system described above is a case in point. FECs are not black boxes that clearly or speedily translate funding into employable skills within a given time frame, where simply responding to industry demand results in predictable increases in innovation. Focusing on the output of technical qualifications misses a whole range of positive economic impacts that play out across geographies and timescales that are not always captured within the boundaries of evaluation exercises.

Third, FECs can only control a portion of the supply side of the skills equation. They share this space with higher education (with which it often has course and qualification overlaps), private skills providers, and, most crucially, businesses themselves. While FECs are often accused of failing to correctly interpret market signals and deliver graduates with skills that are locally in demand, some fault may also lie with businesses that have been reluctant to invest in workforce training or provide competitive compensation. One FEC noted that local employers had complained that the college was not producing enough candidates with a specific set of qualifications to fill its needs. However, while the number of graduates from that programme was relatively high, many of them were being lured by higher wages offered in a nearby city. Sometimes, regulatory hurdles get in the way of delivering training to businesses. Because of rules around module structures, FECs are often prohibited from delivering bespoke training regimes or, if not, from making them available at accessible prices. FECs have also encountered difficulties in retraining individuals who may already possess a qualification. Finally, FECs also frequently reported

barriers to delivering training demanded when it is needed. Some highlighted that they were aware that certain skills would be in demand in three to eight years' time, but noted that businesses were not yet willing to acknowledge that those needs would affect them (and therefore, were unwilling to contribute to programme development). Or businesses asking for skills could not predict future needs, leading to high levels of uncertainty about whether there would be sufficient jobs for graduates. Because establishing programmes sometimes takes years and can involve high levels of investment in equipment and development costs, getting the timing right is crucial when margins are thin. FECs' own ability to pay competitive salaries to instructors to teach in programmes where their skills are in high demand in the field is also a significant constraint on their ability to respond to demand.

The regulatory environment and businesses' own willingness to collaborate in programme development and uncertainty in the system often constrain FECs' abilities to bridge skills gaps in their local economies (and beyond). FECs typically rely on sophisticated data about labour force needs, coupled with feedback from their networks, and so are often among the first to recognise and react to gaps. Their ability to do so, however, varies. Understanding what drives skills shortages requires looking beyond FECs and recognising that they face significant external barriers in delivering on skills' needs.

Finally, the research revealed that FECs routinely engage with hundreds (sometimes over a thousand) of individual businesses as part of their approach to programme delivery. However, even in the best-case scenario, they only reach a small percentage of the total number of businesses in their ecosystems. Despite limited resources, FECs we spoke to universally reported that they were constantly prospecting relationships with new businesses, reinvigorating relationships that had lapsed, and deepening existing partnerships. Once established, these relationships are not necessarily self-sustaining or static. Each relationship requires time and maintenance and can be undone (or enabled) by a change of leadership in the business, a change in business circumstances, or a bad experience. In the best-case scenario, relationships deepen over time – one apprentice placement begets another, the relationship evolves such that the FEC can engage the business in curriculum development or partnering to provide specialised equipment for training or in joint efforts to secure business development funding. Routinely maintaining hundreds of relationships is a massive undertaking and frequently involves the highest levels of leadership at the FEC.

Given this pattern of engagement, it is important for policy makers to consider what kinds of goals are realistic in the realm of business engagement. Rather than focusing on expanding reach, it might be worth instead exploring how to optimise engagement to more effectively service the FEC's objectives.

These findings are significant to both research and policy. They encourage researchers and policy makers alike to abandon linear thinking and consider FECs' positions within complex and interconnected national and regional skills and innovation systems. Adopting this perspective can help design programmes sensitive to local contexts and measure FEC influence at a system level and across more meaningful time periods. It can help researchers and policy makers more accurately diagnose the causes of skills gaps and recognise that those causes can vary across places, institutions, and skills areas. Finally, it encourages practitioners to embrace the idea that more is not always better in the realm of business engagement – and that more engagement might not even be feasible. Impacts can almost certainly be improved, but suggesting that underperformance stems from not enough engagement may not yield realistic solutions.

9.3 IMPLEMENTATION

Taken together, this emerging research suggests that innovation policy makers apply a systems lens to FEC policy design. While there are many ways that this can play out in practice, we focus on two broad categories: (1) empowering places and FECs, and (2) expanding definitions and measures of impact.

One thread that runs through the insights discussed above relates to the uniqueness of each FEC's experiences and their relationships with the communities within which they are embedded. Each FEC must navigate different political, economic, organisational, socioeconomic, geographic (and so on) contexts, and these all shape the signals that they choose to prioritise and respond to and their strategic responses. In practice, this means that even though it is possible to identify best practices, FECs do not need to be the same. In fact, the further education and broader skills system benefits from diversity. That said, given that individualised approaches to programmes and regulation are not possible, a process that identifies policy goals and groups FECs into categories based on relevant variables (for instance, goal alignment, maturity of programmes, structure, socioeconomic or industrial milieu, and so on) could more effectively target and tailor approaches, and identify potential opportunities and industry partnerships.

This kind of targeting does happen in an ad hoc, and typically quite selective, way in the structure of current programmes. For instance, groups of FECs were included in Local Skills Improvement Plan (LSIP) and Strategic Development Fund (SDF) trailblazer groups by virtue of their location in selected areas. The LSIP programme was designed to embed a stronger and more dynamic partnership between employers and Further Education (FE) providers. The pilot programme evaluation noted that experiences differed across groups in terms

of the geographies, process designs, collaborative experiences, and outputs (DfE 2023).

This kind of selective approach can be sensible to test or pilot initiatives, but impacts from competitive processes like this are definitionally uneven and risk widening gaps between FECs that have the capacity to bid for and participate in these opportunities and those that do not. Where the LSIP and SDF programmes were designed to enable local actors to design their own governance structures and frameworks to guide skills development and provision, these were not accompanied by significant resources or loosening of regulatory barriers.

Devolved responsibilities, however, have been one way to create space for more FEC autonomy. For instance, since 2019, approximately half of the Adult Education Budget (AEB) has been devolved to seven Mayoral Combined Authority (MCA) areas (including the Greater London Authority), while the Department for Education manages the budgets of non-devolved areas. Devolution has improved the ability of combined authorities to flexibly deploy budgets to target and tackle skills gaps, but arguably devolution has not gone far enough. Shand et al. (2022) argue that partial devolution has resulted in inequities in the use of public funds and has effectively created a two-tier system for skills planning. Furthermore, places with devolved responsibilities use resources predominantly to meet nationally determined entitlements, leaving less (but not no) room for local innovation. That said, FECs noted that the innovation that has been made possible by this devolved funding has created much-needed flexibility and demonstrates the positive potential of the scheme. Bernhardt and Kaufmann-Kuchta (2023) note that this arrangement has empowered collaboration between FE providers and the combined authority in Greater Manchester, leading to a much more harmonised approach to skills development and training. Recently announced trailblazer devolution deals will grant new powers over post-19 skills and transfer funding for the Free Courses for Jobs programme to two combined authorities (Greater Manchester and West Midlands). These powers are likely to empower even more innovation in these areas; however, these advantages are currently denied to other jurisdictions.

A systems approach emphasises the importance of recognising the diversity of FECs, their ecosystems, and, consequently, their policy needs. Similarly, this perspective creates a strong argument for policy approaches that evaluate outcomes (and design policies) over longer timescales sensitive to feedback loops and time lags, and to the interconnections and interdependencies between innovation, skills, and wellbeing.

Applying systems thinking in public policy means being vigilant for feedback loops within the system. This refers to chains of impacts that become self-reinforcing, precipitating either virtuous (positive) or vicious (negative)

cycles. These loops are important in several respects. First, loops are typically made up of *chains* of impacts. Determining the ultimate result of a policy intervention in these cases may involve tracing effects through several phases and/or branches. From a policy perspective, this means mapping and understanding a much more extensive and complicated cascade of impacts than linear policy approaches. And those loops (positive or negative) can enhance or undermine policy goals if not properly identified. Second, effects travel across these chains and through feedback loops at different speeds. A systems approach encourages policy makers to appreciate that the circuits of systems generate time lags – especially as several cycles might be necessary before virtuous or vicious cycles are evident or play out.

As discussed in the previous section, policy making in further education has assumed, in a more linear fashion, that skills gaps can be filled by simply increasing the output of the appropriate skills from FECs. This has resulted in policies that work backwards from 'graduate more workers with a qualification in X' to inform policy design. For example, efforts to better connect businesses and FECs stem from an (often misplaced) assumption that skills providers are not effectively receiving, or interpreting, signals from the labour market when other challenges (for example capacity, resources, timing, low student interest, weak existing labour market signals, and much more on both supply and demand sides) may be more pressing.

We also noted above that time lags and uncertainty in how an individual might make use of the skills they have acquired (and when and where and to what effect for innovation and the economy) make tracking and interpreting impacts of policy interventions incredibly difficult. This is less an argument against trying and more a suggestion that policy makers, and evaluators, consider a broader and perhaps different range of indicators of success.

A systems approach also encourages policy makers to consider and learn about the significance of intersections and interdependencies between policy areas. For instance, current policy assumes strong and reinforcing links between skills, innovation, and wellbeing. This is a reasonable set of connections to make, and, in fact, considerable academic work has been devoted to elaborating the wide variety of mechanisms that link these abstract concepts (Aldieri et al. 2021; Dolan and Metcalfe 2012). However, it is rare that policy will explicitly trace through how interventions are likely to generate social, wellbeing, or innovation impacts and often rely instead on vague generalisations about how interventions to increase skills in the economy are likely to have these broader outcomes. Interventions are typically designed around a tightly prescribed set of (more often than not, Specific, Measurable, Attainable, Relevant, Time-Bound or SMART) expectations, and while they may have, and highlight, the potential for broader impacts, these may not be explicitly measured. In a similar vein, policies are also often designed in silos such

that interventions focused on the quality of qualifications are not often co-developed with those that might rely on skills-based mechanisms to improve innovation outcomes. This is certainly not unique to further education and innovation policy, but this division is particularly pronounced in the UK by a division of responsibilities across at least two ministries (DfE and DSIT). A systems approach should encourage policy makers to better weave together, and understand the reciprocal impacts of innovation, skills, and wellbeing through stronger coordination across silos.

9.4 CONCLUSION

This chapter has shown that further education plays a much more sophisticated role in innovation policy, and the development of innovation ecosystems, than as providers of skills and business services. These are organisations that are more often than not highly embedded in, and attuned to, the needs of their communities but with missions and impacts that are much broader than economic development. They serve multifaceted and mutually reinforcing functions that are often considered, incentivised, and resourced separately in policy – skills delivery, business support, civic engagement, and so on – but are seen as inextricably linked by the FECs themselves. In this context, the innovation in innovation policy is to learn to see FECs as they see themselves – as embedded in complex systems – and plan interventions accordingly. Across the board, FECs primarily seek to generate positive impacts for their communities and the individuals they instruct, and their interactions with businesses are calibrated to serve that agenda, within which economic returns for an innovation system is but one link in the chain. The innovation in innovation policy, therefore, is to seek to work *with* that mindset rather than prioritising impact on innovation (in this case) above all else or setting priorities which are at odds with one another.

For policy makers, this means recognising and embracing diversity and empowering FECs to engage in their own innovations to better achieve their goals. It means moving away from one-size-fits-all approaches and experimenting – hopefully more deeply and extensively – with devolution. A systems approach encourages interventions to be designed, to the extent possible, to encourage positive feedback loops and in the recognition that effects play out over time. It reinforces the need to bring together stakeholders across policy silos and a recognition that innovation, skills, and wellbeing (as well as other concepts) are intertwined and mutually reinforcing. However, without a systems-informed approach, effects will be uneven and sometimes unanticipated.

Researchers can also benefit from adopting, or at least being inspired by, systems thinking. Scholarship is poised to move beyond conceptualising further education as being about outputs measured in terms of skills, qualifications,

economic impact, and so on, with other 'missions' bolted on. Research has itself been prone to silos. But this academic work is where the systems in which further education is embedded can be theorised, traced, and experimented with. This research can play a vital role in lifting the veil that has obscured FEC impacts, reducing them to one-dimensional players, to all but those who have long operated in those systems. There is an opportunity for researchers to expand knowledge about these multifaceted institutions and support a more nuanced role for further education and FECs in innovation policy than currently exists by considering context, diversity, methods and modes of engagement, and more.

FECs are not without flaws; however, this emerging research suggests that where weaknesses have been identified, these may be misinterpreted or overstated, while other more important flaws may be overlooked. We hope that our work invites a more considered approach.

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