

Flexible Ecosystems Project report

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Danielle Thibodeau and Janet De Wilde

Acknowledgements

The authors would like to thank
Sumbal Mirza and Sara Kotulska for
the help and support with this project.

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Project overview

The aim of the Developing Flexible Ecosystems project was to review the higher education (HE) sector's capacity for flexible provision, recognise exemplars that support equitable transitions through learning and work and identify priority areas to be addressed by Advance HE and their members. The project was supported by Advance HE through the [Collaborative Development Fund](#) and delivered by the Queen Mary Academy. The Academy supports staff and students at Queen Mary University of London to develop and enhance their practice in teaching, learning, and research (Advance HE Collaborative Development Fund, 2020).

This project recognises the strategic importance to the global tertiary education sector of the need to develop an agile approach to routes to educational achievement. The sector guided, by government policies, has been considering and implementing strategies for widening participation and upskilling of students to better meet employers' and societies' needs. There are advantages for students and employers if the HE sector can develop flexibility in its provision. This project explores how the HE sector is responding and evaluates the current position. The study used surveys to gather a broad perspective into how the sector was embedding flexibility and responding to policy, followed by roundtable discussions to gain insight into experiences. Finally, we collected case studies to provide a focused examination of practice

Policies for flexible learning

Globally the demand for knowledge-based economies drives governments to address inequalities in learning, access to HE, and technical upskilling (eg UK Department for Education (2021), Ireland Department of Further and Higher Education, Research, Innovation and Science (2021)). The resulting policies encourage current higher education institutions (HEIs) to create options for flexible learning – providing students with choices concerning what, when, where and how they learn. The ability to study flexibly will enable more of society to engage with HE, to acquire higher level technical skills, and to remain up-to date with those skills. However, this requirement for flexibility in turn necessitates that the HE ecosystem adapts from its traditional degree formats and associated processes. There are multiple components of the ecosystem that need to adapt, key areas of which include: increased use of micro-credentials, availability of credit transfer, alignment with changing demands for skills, the freeing of time and place of study, and flexible financial support for students. To support and facilitate a flexible approach requires the use of enablers such as learner analytics, increased engagement with employers, and adaptation of the quality assurance processes. All of these approaches need to be incentivised by policy both nationally and institutionally.

Supporting technology and practices

Micro-credentials and digital badges

Governments wish to encourage the use of micro-credentials to ensure preparedness for work and to embed agility into the education system. This is illustrated by the ambitious 5-year, €12.3 million (Irish Universities Association, n.d.) project currently underway in Ireland. Micro-credentials are certified short units of learning, which can be stacked towards gaining a higher qualification. They appear in a range of forms such as massive open online courses (MOOCs), short courses, masterclasses, and nanodegrees (Oliver, 2019). However, it requires regulatory authorities to examine their existing quality assurance frameworks. New Zealand's Qualifications Authority (2019) undertook a review of their qualification framework to consider the inclusion of a wider range of quality assured education products onto a broader qualifications and credentials framework, embedding transferable competencies, supporting degree apprenticeships and more. In a review of the Australian Qualifications system, Noonan (2019, p. 56) found that "there is currently no widely accepted definition of micro-credentials" which presents issues for stakeholders, and identified that, whilst awareness was high, implementation was low. The level of adoption may also be hindered as the entire system needs to shift. Wheelahan and Moodie (2021) identified that "micro-credentials weaken relations of classification of knowledge and framing (the pacing, sequencing and evaluation) of knowledge more than other previous innovations in higher education curriculum". As such, micro-credentials can be perceived as challenging to established discipline structures and associated identities (Wheelahan & Moodie, 2021).

Building on this, for the flexible provision to be of value to the learner it should be credit-bearing and transferable. This enables learners to accumulate across institutions and to build up to meaningful qualifications over time. The UK Quality Assurance Agency's 'making use of credit' (QAA, 2019, p. 5) explains that 'the practical design constraints involved in stacking small units into coherent larger ones may restrict the use of micro-credentials largely to the context of continuing professional development (CPD) or as part of recognition of prior learning (RPL) for entry to a higher qualification'. Hence, at the time of writing, there is no systematic and widely used system in the UK for building up credit across different institutions.

Digital badges, which allow the digital certification and representation of achievement (Gibson, Ostashewski, Flintoff, Grant, & Knight, 2015) have been introduced into HE. However, adoption in both HE and employment remains low (Perkins & Pryor, 2021) limiting their current contribution to flexible lifelong learning.

Learner analytics

Learner analytics can support flexible pathways through empowering learners, widening access and improving retention in HE (Sclater, Peasgood, & Mullan, 2016). Institutions now have large data sets on students' engagement with all aspects of their learning, from online interactions, attendance, and engagement with library content. Combining this interaction data with assessment outcomes and progression data means that institutions now have a means of targeted analytics. Appropriately applied, learner analytics can support individual learner pathways, and their journey through a range of modules, whilst ensuring degree programmes meet high-quality standards. Learner analytics can also play a role in addressing the need of embedding policy into practice when addressing the flexibility challenges facing HE. In designing programmes that collect data during the students' learning processes, universities are better placed to address the requirements of flexibility with customised modules, assignments and feedback. When used ethically and effectively, learner analytics may help institutions, and learners themselves, enhance the learner experience, improve performance, reduce non-progression rates, and increase graduation numbers. Institutional policies on learner analytics, such as those created by the University of Greenwich (2018) and the University of Edinburgh (2018) may help when addressing national policies of flexibility of provision.

Co-creation

Increasing flexible provision will enable a more diverse learner population to engage with higher education. To better meet the needs of these diverse learners requires adopting an approach of co-creation which enables the learner to contribute their perspective (Bovil & Woolmer, 2019). A review by Ryan and Tilbury (2013) identified 'new pedagogical ideas' to support new flexible pathways. The first of these was 'learner empowerment – actively involving students in learning development and processes of 'co-creation' that challenge learning relationships and the power frames that underpin them, as part of the revitalisation of the academic project itself' (Ryan & Tilbury, 2013, p. 5).

Open educational resources (OER)

Open Educational Resources (OER) were endorsed in 2002 by UNESCO (Macdonald, 2002) to widen global access to learning. By 2019 this had developed into an international framework, the UNESCO Open Educational Resources (OER) Recommendations (Ossiannilsson, 2021), which has been adopted by approximately 200 member countries. OER remove the financial barrier to learning, encouraging shared development and use of learning materials. Hylén (2021), reporting on the challenges and opportunities of OER, explored individual motivations for using OER and found that "the most commonly reported motive was to gain access to the best possible resources and to have more flexible materials". Both co-creation and OER form part of a flexible ecosystem for education.

Degree apprenticeships

The need to produce highly skilled graduates ready for work led to the introduction of degree apprenticeships in the UK. The UK Quality Assurance Agency (QAA, 2019, p. 3) states “the twin aims of the apprenticeship policy agenda across all countries of the UK are to increase productivity and social mobility”. Such policies are intended to raise productivity by driving up skill levels in the UK to maximise national competitiveness. Degree apprenticeships strengthen the link between higher skill development within universities with the needs of employers. The success of the introduction of these in Scotland was explored by Smith et al (2020). Their research highlighted the benefits of degree apprenticeships in that they met the needs of employers to access skilled employees. However, there are challenges for universities in their narrative around employability for learners on traditional degrees, and for apprentices in navigating the tension between work and study commitments. Smith et al (2021) explored the aim of social mobility and found that “apprentices were found to be drawn from all socioeconomic groups and represented those new to work as well as upskillers”. However, they found there was under representation of Black, Asian and minority ethnic apprentices compared to degree programme students.

Finance

Upskilling and reskilling the workforce requires funding and choices around who pays. Typically, this is a mixed model with funding from the employer, the government or the learner. The UK government introduced a Lifelong Loan Entitlement as part of the Lifetime Skills Guarantee (Department for Education, 2021). The aim of this funding is to give people the opportunity to train, retrain and upskill throughout their lives to respond to changing skills needs and employment patterns.

Project methodology

Data was collected through three surveys distributed to Advance HE members, two roundtable discussions held virtually over Zoom, case studies, and interviews with both higher education staff and students. The focus of this paper will be our findings related to a cluster of questions from one of the surveys which was shared with Advance HE members and responses collected in the roundtable discussions and case studies.

In addition to the surveys, roundtables discussions and case studies discussed here, several interviews were also conducted with practitioners and students from institutions in Canada, Ireland, Malta, and the UK to spotlight ideas and practices that contribute to and push our understanding of how to further develop flexibility in HEIs. Those are available on the project website.

Surveys

Three surveys were developed, shared with Advance HE's membership and remained open from mid-April to the end of May 2021.

Two of the three surveys received very few responses and therefore will only be discussed in a limited way in this report. The first of these, Survey A (7.1.2), was designed to capture information about approaches and policies for managing flexible reward and recognition and was sent to Advance HE members in admissions or senior management roles who would have a better overall understanding of their institutions credit transfer policies. Survey C (7.1.4) was shared with those whose job titles indicated some involvement in either international or industry partnerships.

The survey with the most responses, Survey B (7.1.3), explored HEIs approaches and policies for learner centred educational approaches. The survey was targeted at academics who teach and professional services staff who support educational activities. It received 66 responses. Four respondents did not consent to participate in the study and therefore their responses have been excluded. Of the 62 responses:

- + 79% of respondents were from institutions in the United Kingdom, while the remaining 21% were from Australia (n=6), South-eastern Asia (n=4), the Middle East (n=2) and Western Europe (n=1).
- + 85% identified themselves as academics, while the remaining 16% identified themselves as professional services (n=7) or senior management (n=2).
- + When asked about the type of institution they were describing, 30.6% said theirs was teaching focused, 22.6% said research intensive, and 45.2% said balanced teaching and research. One respondent specified that their institution focused on distance teaching and research.

Roundtables

Two roundtable discussions were held via Zoom during June 2021. General invitations were sent to Advance HE members, while more targeted invitations were sent to survey respondents who indicated an interest in participating. Participants in the roundtables were primarily from universities in London, the East Midlands, and the Northwest of England, and represented amongst them academics, professional services staff, consultants, and students.

Roundtable discussions were loosely structured around the following prompts:

- + How are learning analytics informing learning practices, particularly student self-directed activities?
- + How are students being actively involved in the co-creation of learning development?
- + How is the development and use of open educational resources being discussed at your institution? What is the impact of open educational resources on your work?
- + Have co-creation and open resources contributed to the deconstruction of dominant pedagogical frameworks?

Case studies

Case studies were solicited from member institutions of Advance HE. When inviting institutions to submit case studies, particular attention was paid to practices that were meant to be discussed in Surveys A and C, particularly those which demonstrated:

- + approaches and policies for managing flexible reward and recognition (eg credit transfer)
- + approaches and policies related to institutional partnerships.

Four case studies are included in this report from institutions in Northern Ireland, Wales and the Northwest of England.

Findings

Flexible provision

61% of respondents to Survey B said that flexible learning was part of their institution's learning and teaching strategy. Of these respondents, 42% named it as a strategic aim and 21% specifically linked flexibility to accessibility and inclusion. A theme amongst responses to this set of questions was that much had changed in the past 18 months due to the global Covid-19 pandemic, though many were unclear what impact, if any, these changes would have on their institutions going forward.

Survey respondents were asked a series of questions related to how their institution offers flexibility to their students in terms of how their programmes are delivered. Table 1 shows how respondents estimated their institution's programmes were offered.

Table 1. Modes of delivery

Of the degree programmes you offer, how many of them are delivered...	Less than 25%	Between 25-75%	More than 75%
Entirely online?	76%	16%	8%
Blended model?	45%	19%	35%
Entirely on campus?	48%	19%	32%

Only 6% of respondents said students got to choose their mode of delivery. Most said the choice was determined by the programme or institution's structure, though some noted that this was likely to change post-pandemic.

When asked about flexibility in relation to geographic location, 48% of respondents said they offered programmes that are concurrently offered on more than one campus. Of those, 80% said those programmes represented less than a quarter of their overall offerings. When asked to elaborate on the nature of these programmes, respondents fell into one of the three groups:

- + institutions whose primary mode of delivery is online
- + those who offered flexibility via partnerships with local colleges and professional organisations
- + those engaged in international partnerships with other HEIs.

21% said they did not offer any flexibility in terms of length of study. The other 79% offered flexibility in terms of length of study as summarised in Table 2.

Table 2. Flexible length of study

Types of flexibility	%
Accelerated programmes	19.4
Part-time studies	66.1
Modular studies	32.3

Other responses highlighted that flexibility is offered through the integration of work-study periods, summer sessions, possible gap terms and consideration given to mitigating circumstances. There was a mix of responses as to whether this type of flexibility was offered on an institutional or programme level. Responses were also split regarding whether students were able to move between different modes of study.

Though not the primary focus of the roundtable discussions, some participants did raise the idea of the deconstruction of physical learning spaces and how online learning can break down the traditional organisation of these spaces. The notion that providing more economical and accessible opportunities in terms of geographic access to courses was also mentioned, as was the idea of decoupling learning from set times to allow participation in jobs and other responsibilities.

Learner analytics

Though the survey asked about the use of several emergent technologies, including adaptive learning, discourse analytics, semantic web technologies and the use of artificial intelligence more generally, learner analytics was the tool that garnered the most responses. Respondents were asked to rate how important learner analytics are to five areas of work using a 5-point Likert scale. Table 3 shows the percentages of responses indicating that learning analytics are either important (4) or very important (5) to these areas.

Table 3. Importance of Learning Analytics

Area of work	Scored 4 or more (percentage, N=62)
Curriculum development	41.9%
Assessment policies and practices	50%
Health and wellness resources	42%
Student recruitment	52.5%
Staff development	33.9%

When asked if learner analytics were being used in other ways, some responses indicated the use of analytics to do programme evaluation, or to monitor student engagement more broadly, including the use of resources and facilities such as virtual learning spaces and libraries. Most said there were no other plans to use learner analytics, or that they were unsure whether any such plans existed.

Exploring student engagement with their own data, participants were asked whether their institution has developed any resources or programming to support students to find, interpret and use their own learner analytics. Only 11.3% said yes, while most respondents (88.7%) either said no or that they did not know of any. Even fewer (6.5%) knew of any resources that supported students to better understand the potential of blockchain technology to accumulate and track learning credits. When asked to elaborate on these supports, some mentioned guides and workshops, though few examples moved past the availability of data, and concern was expressed for the anxiety that data may cause in students. Similarly, only 8.1 % knew of any plans to introduce such support and mirrored the previous responses in terms of simply giving students better access to their data.

Discussions of these topics in roundtables reflected the findings of the survey. One point that came up in both roundtables was the notion of how to use learner analytics to better provide resources for pastoral care and wellbeing services.

“You can make a case saying I want to understand, someone who’s always been coming on campus and suddenly doesn’t, if I got alerted to that as their tutor I could reach out to them and see if everything’s okay or is that an invasion of privacy? I think it’s interesting because we have the data to enable us to do that now and we need to have some conversations about how much of that becomes intrusion and how much of it becomes student support.”

Some concern was expressed regarding whether learner analytics may discourage some students from ‘doing better’, either by unfairly comparing themselves to others or by only doing the bare minimum.

“If I see that other students are doing something differently then I might be under some influence to do the same even though it does not really work for me. So in this case, I’m not really sure if I would like to know that. I just prefer to have my own learning style. But this year when I was taking three hours to watch a one-hour lecture it would be useful to compare with other students - does it take so long because it’s difficult or am I not really good at this module and because I am better at learning from discussions with other students. It is very subjective so maybe something more complete and easier to interpret would be useful.”

There was also concern about how learner analytics are interpreted and used ethically.

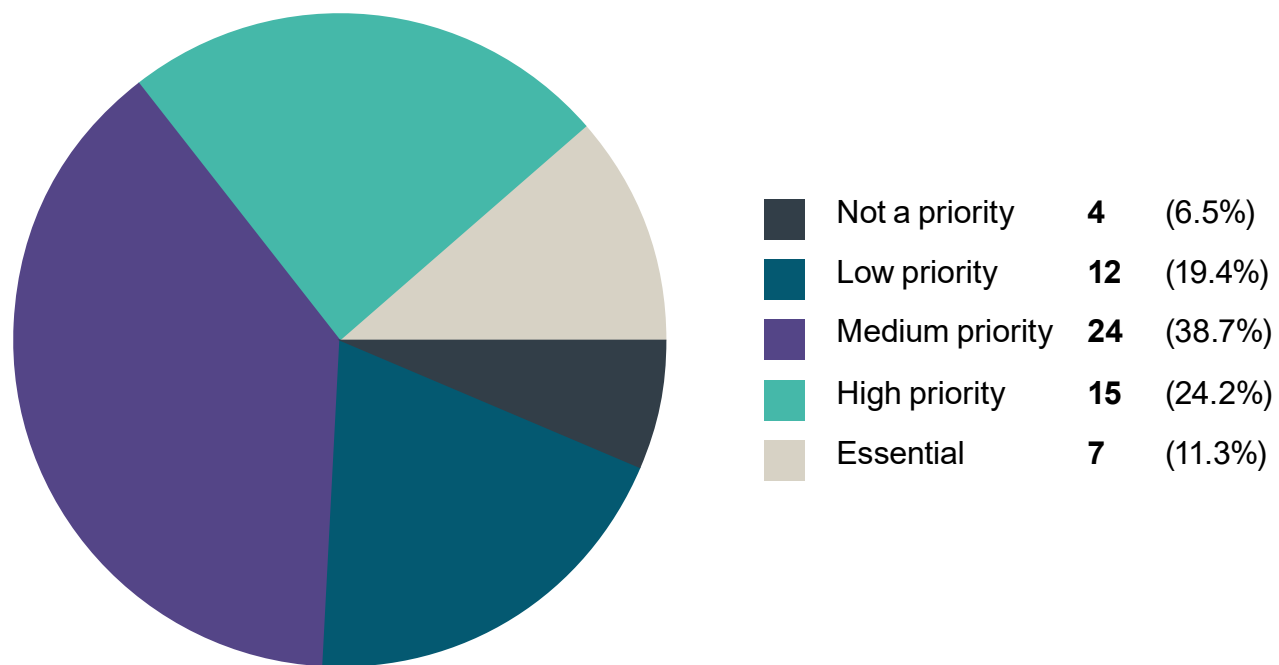
“The other thing is that we might report to employers how students are engaged with material...if students were attending sessions or not and if things were being handed in late or not. I would be concerned that students might come back to the university because they thought that the outcome of [job] applications was based upon metrics which was not related to how they performed but how they engaged with their programme.”

Flexible pedagogies

Co-creation

Respondents were asked how much of a priority actively involving students in learning development and processes of co-creation was to their institutions; their responses are summarised in Figure 1.

Figure 1. Co-creation



Of the 35.5% of respondents who thought co-creation was a high priority or essential, several strategies were identified, including:

- + prizes and funding for co-creation projects
- + inclusion of student voices in the design of programmes, curriculum, and assessment
- + student members of management and policy-making committees.

In the roundtable discussions, some participants described co-creation being limited to student presentations and module feedback surveys, while others described it at an institutional level.

“There are clearly pockets of practise, some excellent examples that we have where students are really involved in designing everything from the ground up. It’s something we build into our quality processes so that right from the point of inception they’re wanting ex-students involved, to develop programmes before revalidation. As the programme is delivered the expectation is that the students are engaged in key processes to help refine the assessment strategies to ensure they are fit for purpose.”

The point was raised that co-creation may not be made explicit to students so that while staff understand how their input is used, students may not identify their contributions as such.

“We need to make it a lot more explicit to students, when, where and how we are co-creating with them, providing opportunities for them to shape their learning and the and how it’s assessed.”

Some identified the needs of external partners, such as professional, statutory, and regulatory bodies (PRSB) as an impediment to doing more co-creation.

“Yes, I think it’s a real mixed bag. I think you’ve got the full spread of range from zero input to a lot of input, inevitably it is related to the structure and the nature of the programme. So, for example, if there is [PSRB] involved, you haven’t got much student input in there.”

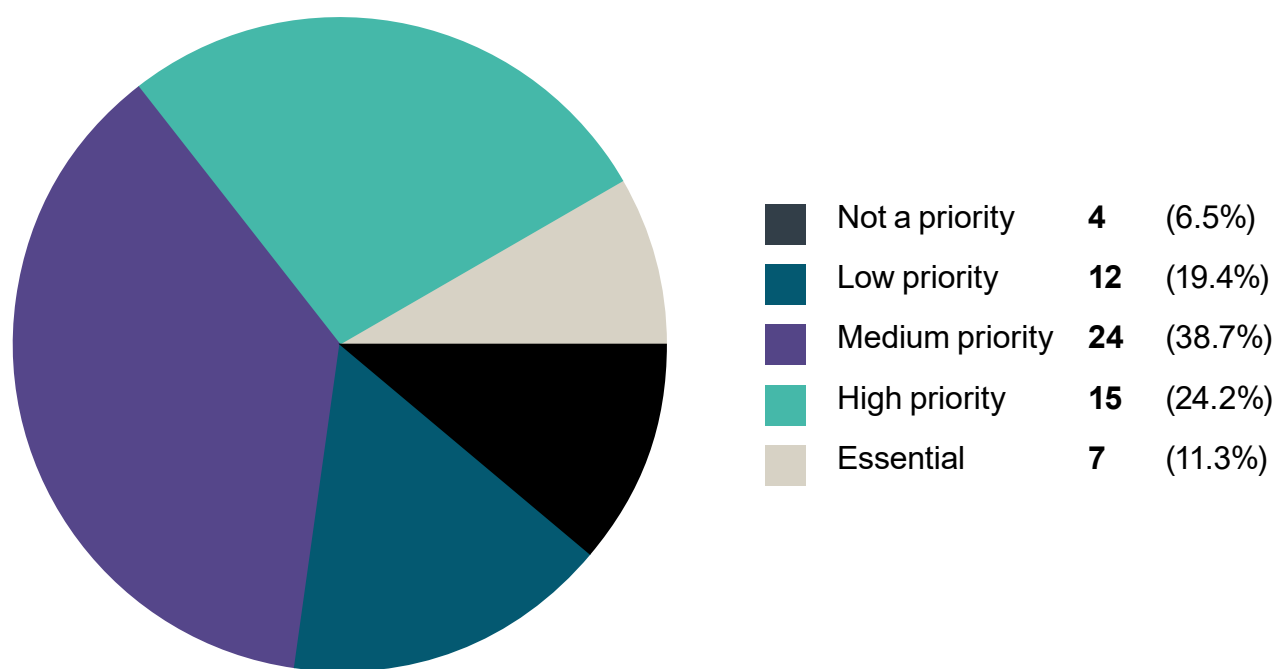
Some participants identified potential for pushback from students on co-created content, especially from those who do not value the input of their peers and feel it detracts from being taught by the ‘experts’ they came for.

“I feel passionate about using pedagogic approaches that bring the student voice into the classroom and it allows for professional development as well. Some disciplines appear to be much better than others at this.”

Deconstructing pedagogies

Survey respondents were asked how much of a priority deconstructing dominant pedagogical frameworks that promote only Western worldviews is to their institutions; their responses are summarised in Figure 2.

Figure 2. Deconstructing pedagogies



Of the 35.5% of respondents who thought deconstructing dominant pedagogical frameworks was a high priority or essential, the main strategies that were named were institutional-level projects to review curricular resources and activities through the lens of decolonisation or the creation of inclusive curriculum frameworks.

Similar ideas were reflected in the roundtable discussions.

“Recently, there has been a move towards decolonisation of the curriculum and institutional initiatives following our signing up to the Advance HE racial equality charter. There is engagement with students and staff to look at the curriculum, I am quite conscientious about the assessment and having voices from different parts of the world within my lectures. I make sure that I’ve got people from a variety of different backgrounds. I’m not sure that is the case across the institution and I think might take some time to modify things.”

Self-directed learning

Respondents were asked to reflect on how much they agreed with the following statements regarding self-directed learning opportunities. Table 4 shows how many agreed or strongly agreed with those statements.

Table 4. Self-directed learning

Statement	Agree or Strongly Agree (n=62)
Academic staff are encouraged to create self-directed learning opportunities for students	53%
Student services staff are encouraged to create self-directed supports for students.	29%
Students are encouraged to engage in self-directed curricular activities	53.2%
Students are encouraged to engage in self-directed support activities (career and leadership development, academic support, etc)	59.6%

When asked to elaborate, some respondents stated that self-directed learning was a requirement at the institutional level and that module descriptors, and teaching and learning plans, required detailed information on how students were expected to engage in self-directed learning though others decried a lack of support when it came to the development of such activities and resources. While many gave examples of traditional or online asynchronous activities, some were engaged with other learning practices, like internships and work-based learning.

“Apprenticeship standards were responded to by development of a work-based framework degree that contains circa 100 credits at each level that are ‘negotiated’ to allow the learners to determine their own route and that matches the specific current needs in their employment.”

Open educational resources

When asked how much of a priority the integration of OERs is to their institution, 51.6% said it was a medium priority, with only 14.5% ranking it high or essential. 64.5% did not know if their institution had any future plans to use OERs. They were further asked to reflect on the statements listed in Table 5.

Table 5. OERs

Statement	Agree or Strongly Agree (n=62)
My institution encourages the use of free OERs	56.4%
My institution encourages the use of paid OERs	38.7%
My institution encourages the development of OERs	40.4%
My institution encourages the development of in-house educational resources	74.2%

Accessibility for students to research publications, textbooks and software was named as one of the main uses of OERs, and several institutions have partnerships with or encourage the use of tools like LinkedIn Learning, OpenLearn and FutureLearn for both students and staff. Some commented on how the pandemic and increasing need for online learning will impact the use of these types of resources and how that shapes staffing patterns.

“With the decision to remain permanently as a blended provision post pandemic the need for access to electronic resource is essential as students will have less contact with tutors and the general direction of travel is for less staff and more technology.”

The reluctance to use more open education resources was grounded in fear

“Academics will increasingly become members of a professional ‘gig economy’ with increased use of VLEs compared to permanently contracted staff.”

In the roundtable discussions, the use of OERs in relation global initiatives like the UN SDGs was raised.

“OERS are part of a worldwide initiative to make quality education available for all, so it is interesting to realise that it is not widespread. A few people and a few institutions understand the huge impact it can have, and rather than being threatened by this move are actually embracing being part of it.”

Some thought the discomfort with OERs reflected a generational divide amongst academic teaching staff.

“It really depends upon who you talk with. I think for [some] members of staff this is really interesting and exciting. But senior members of staff find it deeply uncomfortable. In the United States you can see this revolution really happening and taking hold and offering some really exciting programme developments, but they are also generating concerns about job security.”

There was a sense from those who had embraced OERs that their use was more widespread in North America.

“So, I love Open Access, I love Open Educational Resources. I try to get my staff to use it more and then by modelling that practise hopefully they’ll get their students to engage in the same sort of way and to find them. The way that Harvard shaped all of their MOOC’s and Open Educational Resources was phenomenal, colleagues in Canada have produced an A-to-Z guide of everything to do with technology so why reinvent the wheel, somebody has already created a high quality resource and you can get and your students can access it for free.”

One of the issues that was identified as a potential barrier to using OERs was not having consistent ways of attributing OERs.

“That is a big bugbear of mine and I think that’s possibly why people haven’t fully engaged the OER agenda because in research, in its traditional format where it’s a paper, you wouldn’t dream of taking that person’s work and using it without licence or approval to do so or citing that person. But this format, with Figshare in particular, enables you to do that so you can give that person credit for their academic and intellectual property and then use it because they can put a Creative Commons licence on it as well. So they can say either no derivatives or you can adapt and use it so long as you give credit.”

Some noted that mirroring the use of OERs to students was less of an issue of finding content, and more of an issue of developing skills for life learning.

“If we’re using OERs we are modelling life-long learning, supporting students in navigating and evaluating OERs. Embedding OERs explicitly in our degree programmes can help students with their professional development following graduation.”

Micro-credentials and digital badges

Though the survey related to flexible reward and recognition (Survey A) received very few responses, some did share experience with micro-credentials and digital badges, which were the focus of the four cases studies that were also collected. These survey respondents (n=5) were all from institutions in the UK, and while some reported offering their students either micro-credentials or digital badges, none recognised such credentials provided by other institutions.

Those who did offer micro-credentials and digital badges were split in terms of whom they were targeting, there being offerings for both undergraduates, postgraduates and more general continuing professional development. Credentials recognised work done on general academic skills, discipline-specific skills or knowledge, career development, and co-curricular activities. Notably, no one offered micro-credentials or digital badges related to community or civic engagement.

The same themes were reflected in the case studies (7.2). Micro-credential and digital badges described therein offered learners a means to learn about the following:

- + digital skills
- + academic skills, including opportunities to bridge between further education (FE) and HE
- + personal development
- + employability skills.

Notably, in addition to the benefit to participants, digital badges also provide the institution with a new metric to measure student engagement. By recognising and rewarding the acquisition of skills on a smaller scale, institutions can track which skills are sought and gain insights from how credentials are stacked.

In terms of audience, two of the projects described, The Digital Badges for Digital Skills project at Cardiff Metropolitan University (7.2.1) and the University of Bolton's Learning Excellence Achievement Pathways (LEAP) (7.2.4) are designed for internal audiences including students and staff, though LEAP has a particular focus on supporting those returning to study after a period of absence. On the other hand, the two projects from Ulster University (7.2.2-3) have been created to provide learning opportunities for those currently outside of the institution to learn alongside current students, either by allowing modular credit accumulation that may eventually provide a bridge to entry to HE for A-level and FE students, or by allowing members of the workforce to select learning opportunities that support professional skill acquisition or the building of personalised post-graduate qualifications. The transferability of the skills being acquired is reflected in the ways those audiences are representative of either intersecting or liminal spaces: staff and students, those in transition between different educational systems, or those for whom the line between working and learning is less rigid.

Another connective feature of the projects described in the case studies is the flexibility available to both the providers and the participants due to the small scale of the credentials being offered. Not only was the LEAP programme co-created with the students it serves, but the interface was also particularly attuned to the needs of those studying part-time and commuting between school and work. Similarly, because the Digital Badges for Digital Skills project was designed for both staff and students, courses are designed in what the contributor describes as a “semi-structured” way that allows learners to work at their own pace. This adaptability is perhaps most evident in Ulster University’s programming, which provided an opportunity to support the upskilling of workers in Northern Ireland who had been made redundant by Covid-related closures.

Project summary and recommendations

The lack of responses to one of our surveys (Survey C) meant that an important part of the flexibility ecosystem, partnerships, is not adequately discussed in this report. That includes pathways programmes that support learners to move between FE and HE and work-integrated learning programmes like degree apprenticeships. Both these examples and others rely upon multi-stakeholder partnerships that often include industry and employers as well as education and regulatory participants. It means that partnerships that cross borders and address the physical mobility of learners is also largely absent from this discussion. The nature of partnerships in addressing new ways of learning deserved further investigation.

Several interventions described in this report require a level of sector-wide participation or buy-in to be truly effective. The responses from Survey A and the case studies demonstrate that while institutions have begun to use micro-credentials and digital badges to allow learners to easily demonstrate to others what they have learned, there appears to be far less focus on how institutions will recognise skills and achievements developed elsewhere. Without a framework that engages meaningfully in transferability, digital badges and micro-credentials cannot be used to their full potential, as is reflected in Noonan’s report (2019). The same was true for open educational resources, whose creation was often encouraged but whose use was not.

Recommendation: The development of sector-wide frameworks that guide the creation and use of micro-credentials, digital badges and open educational resources between institutions.

The contrast between the amount of work being done to use learner analytics, and the lack of work being done to support learners to understand and use their data is stark and runs contrary to what other research has told us about how students want to be engaged in the collection and use of this type of data. While institutions may assume that simply giving students access to their data is enough to encourage the development of self-regulation amongst learners, Schumacher and Ifenthaler's research shows that what students want from learner analytics is complex and highly individualised (2018), especially for students in other kinds of flexible provision like degree apprenticeships. Interviews with such students revealed a need for better tracking systems of module credits, for example, for those balancing academic work with employer placements.

Furthermore, the more involved students are in the development of such systems, the likelier they are to engage, and in turn create higher quality data that contributes to better supports. In their proposed principles for an ethical framework for learning analytics, Slade and Prinsloo set out the idea that students need to participate in the use of learning analytics as agents and not merely sources of data and recipients of related interventions (2013). Given what has been observed about the current practices of participating institutions, this is an area of still largely left unexplored.

Recommendation: HEIs need to better prepare learners to be informed and active participants in the collection and use of learner analytics.

As was evident from the case studies, there are many interesting projects and pockets of good practice that make use of emerging technologies to support flexible learning opportunities for students, but often respondents lacked clarity of decisions being taken at the institutional or sector-wide level to scale such projects. When flexibility was acknowledged to be a strategic aim or key performance indicator, how those ideas are put into practice is not always evident to the academic and professional staff who responded to our surveys. Those best able to articulate the operationalisation of such strategic aims were from institutions where high levels of flexibility have long been a part of their modus operandi, like the Open University in the UK or the Australian National University. For most respondents, elements of flexibility were still very much applied as occasional modifiers to more traditional university offerings.

This was perhaps most evident in survey responses that referenced changes to delivery that had occurred during the pandemic. Many responses about flexibility pertaining to online and blended provision, use of physical space and length of degrees demonstrated that for most people, the new modes of delivery necessitated by the pandemic were still temporary disruptions to 'usual' ways of learning. Many indicated that they did not know if they would return to traditionally delivery models once the crisis had passed, or if the last two years had forced a long-lasting shift to their institution.

Recommendation: Space needs to be given at the institutional and sector level to thoroughly investigate the impact of the pandemic on both staff and students.

In summary, this project has explored the ecosystem of flexible provision in higher education and examined how the adoption and implementation of these approaches are maturing. Some areas of the ecosystem are more advanced than others however there is still much work that needs to be continued. There is a need to join up the pockets of practice so that the ecosystem can function coherently. Further sector discussions would facilitate the inter-institutional and partnership aspects as individual institutions are adapting their provision, but they would benefit from shared experiences and support in the inter-institutional aspects.

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Appendices

Survey Questions

Demographic questions

- 1 What is the name of your institution?
- 2 What type of institution is it?
 - + Teaching focused
 - + Research Intensive
 - + Balanced Teaching and Research
 - + Other
- 3 Where is your institution located?
 - + Americas
 - Caribbean
 - Central America
 - North America
 - South America
 - + Asia Pacific
 - Australia and Oceania
 - Central & South Asia
 - Northeastern Asia
 - Southeastern Asia
 - + Europe and United Kingdom
 - Eastern Europe
 - Northern Europe
 - Southern Europe
 - United Kingdom
 - Western Europe
 - + Middle East/Africa
 - Middle East
 - Northern Africa
 - Southern Africa

4 What type of role do you hold at this institution?

- + Academic
- + Governance
- + Professional services
- + Research and related
- + Senior management
- + Student
- + Other

5 Is your institution a member of Advance HE?

- + Yes
- + No
- + I don't know

6 What kind of membership does your institution hold?

- + International Access Member
- + International Strategic Member
- + Research Institute Membership – UK
- + UK Affiliate Membership
- + UK Full Member
- + I don't know

Survey A

Credit from other institutions

1 Does your institution recognise academic credit acquired at of the following types of organisations?

- + Other universities [Y/N]
- + Other colleges (FE colleges, community colleges) [Y/N]
- + Other educational providers (FutureLearn, Ed.X, etc) [Y/N]
- + Professional organisations [Y/N]
- + Employers [Y/N]

a Does your institution recognise prior learning credit (academic or otherwise) from any other type of provider? If yes, please tell us more about that provider and what is recognised.

b What factors influence how a previously obtained credit is recognised by your institution?

Select as many as apply.

- Type of provider
- Geo-location of provider (country, region)
- Language of provision
- Type of award (degree, diploma, certificate)
- Type of assessment
- Other

c Do you wish to elaborate on any of the factors you indicated above?

Micro-credentials

A micro-credential is a proof of the learning outcomes that a learner has acquired following a short, transparently-assessed learning experience. They are awarded upon the completion of short stand-alone courses (or modules) done on-site or online (or in a blended format). (European Commission).

2 Does your institution offer any micro-credentials?

+ Yes (a, b)

+ No

+ I don't know

a To whom are your institution's micro-credential schemes targeted? Choose as many as apply.

- Undergraduates
- Graduates

- CPD courses, Continuing Professional Development, and short courses
- Other

b What do your institutions micro-credentials recognise? Choose as many as apply.

- General academic skills
- Professional/discipline-specific skills or knowledge
- Career development
- Community/civic engagement
- Co-curricular activities
- Other

3 Does your institution recognise micro-credentials from other providers?

- + Yes, all micro-credentials
- + From approved partners only (a)
- + No

a How does your institution decide which partners to approve?

Digital badges

Digital badges are credentials that symbolise learning achievements at any level - knowledge, skills, certificates, diplomas, certifications or licences. Each badge contains a set of metadata defined by the issuer about the skills being recognised, and the accomplishments achieved. (BCS, The Chartered Institute for IT).

4 Does your institution offer any digital badges?

- + Yes (a, b)
- + No
- + I don't know

a To whom are your institution's digital badges schemes targeted? Choose as many as apply.

- Undergraduates
- Graduates
- CPD courses, Continuing Professional Development, and short courses
- Other

b What do your institutions digital badges recognise? Choose as many as apply.

- General academic skills
- Professional/discipline-specific skills or knowledge

- Career development
- Community/civic engagement
- Co-curricular activities
- Other

5 Does your institution recognise digital badges from other providers?

+ Yes, all micro-credentials

+ From approved partners only (a)

+ No

a How does your institution decide which partners to approve?

Blockchain

6 Does your institution use blockchain technology to help students manage academic credits, credentials or badges from various providers?

+ Yes (b)

+ No (a)

+ I don't know

a Are there reasons your institution does not use blockchain?

b Tell us more about your institution's use of blockchain?

Survey B

Flexible Learning Options

1 How many degree programmes does your institution offer? Feel free to estimate [Open text]

Blended learning (also known as hybrid learning) is a method of teaching that integrates technology and digital media with traditional instructor-led classroom activities, giving students more flexibility to customize their learning experiences. (Panopto)

2 How many degree programmes are offered:

+ entirely online [%]

- + using a blended model [%]
- + entirely in-person on campus? [%]
 - a Do students have choice in mode of delivery. For example, can students choose to take individual modules online or on-campus, or is this decided by institution or programme? If you don't know, please write "I don't know." [Open text]
- 3 Are any of your programmes offered concurrently on more than one campus?
 - + No
 - + Yes (a, b)
 - a What percentage of your programmes are offered concurrently on more than one campus? [Open text]
 - b Tell us more about the programmes offered concurrently on more than one campus [Open text]
- 4 How are learners offered flexibility in terms of length of study?
 - + Accelerated programmes
 - + Part-time studies
 - + Modular studies
 - + We do not offer flexibility in terms of length of study
 - + Other
 - a Tell us more about how your institution offers flexibility in terms of length of study. For example, is this flexibility offered across all programmes or only some? Can student move between different modes of study?
- 5 How else does your institution offer flexibility to your learners in terms of mode of delivery? [Open text]
- 6 Is flexible learning a part of your institution's learning and teaching strategy?
 - + Yes (a)
 - + No
 - + I don't know
 - a How is flexible learning reflected in your institution's learning and teaching strategy? For example, it may be a strategic aim, enabling aim, part of a KPU or something else.

Flexible pedagogies

How much of a priority are the following to your institution? [5-point Likert scale, 1:Not a priority, Low priority, Medium priority, High priority, Essential:5. Follow up for 4 or more]

- 7 Actively involving students in learning development and processes of 'co-creation' thereby challenging existing learning relationships and power frames
 - a Tell us more about what your institution is doing to prioritize actively involve students in learning development and processes of 'co-creation' thereby challenging existing learning relationships and power frames.
- 8 Deconstructing dominant pedagogical frames that promote only Western worldviews
 - a Tell us more about what your institution is doing to prioritize deconstructing dominant pedagogical frames that promote only Western worldviews
- 9 Generating inter-disciplinary inter-professional and cross-sectoral learning to maximise collaboration
 - a Tell us more about what your institution is doing to generate inter-disciplinary inter-professional and cross-sectoral learning to maximise collaboration
- 10 Developing less formal learning cultures particularly through new technologies and co-curricular activities
 - b Tell us more about what your institution is doing to develop less formal learning cultures particularly through new technologies and co-curricular activities

Self-directed learning is a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes.

How much do you agree with the following statements? {5-point Likert scale, 1: Strongly disagree, Disagree, Undecided, Agree, Strongly agree: 5. Follow up for 4 or more]

- 11 Academic staff are encouraged to create self-directed learning opportunities for students.
 - a Please tell us how.
- 12 Student services staff are encouraged to create self-directed supports for students.
 - a Please tell us how
- 13 Students are encouraged to engage in self-directed curricular activities
 - a Please tell us how

14 Students are encouraged to engage in self-directed co/extracurricular activities

a Please tell us how

15 Students are encouraged to engage in self-directed support activities (career and leadership development, academic support, etc)

a Please tell us how

Learning Analytics

Learning Analytics is the process of measuring and collecting data about learners and learning with the aim of improving teaching and learning practice (Advance HE).

16 How important are Learning Analytics in your decision making about the following:

+ Curriculum development [Likert 1: Unimportant – Very important:5]

+ Assessment policies and practices [Likert 1: Unimportant – Very important:5]

+ Health and wellness resources

+ Student recruitment [Likert 1: Unimportant – Very important:5]

+ Staff development [Likert 1: Unimportant – Very important:5]

17 Are there any other ways your institution uses Learning Analytics?

18 Do you know of any future plans within your institution to use Learning Analytics?

+ Yes (a)

+ No

+ I don't know

a Tell us more about those plans

Adaptive Learning

Adaptive Learning is the delivery of custom learning experiences that address the unique needs of an individual (Smart Sparrow).

19 How important is Adaptive Learning in your decision making about the following:

+ Curriculum development [Likert 1: Unimportant – Very important:5]

+ Assessment policies and practices [Likert 1: Unimportant – Very important:5]

+ Health and wellness resources

+ Student recruitment [Likert 1: Unimportant – Very important:5]

+ Staff development [Likert 1: Unimportant – Very important:5]

20 Are there any other ways your institution uses Adaptive Learning? [Open text]

21 Do you know of any future plans within your institution to use Adaptive Learning?

+ Yes (a)

+ No

+ I don't know

a Tell us more about those plans

Discourse Analytics

Discourse Analytics is a research methodology to analyse and develop an understanding of how researchers can utilise language in real life context.

22 How important is Discourse Analytics in your decision making about the following:

+ Curriculum development [Likert 1: Unimportant – Very important:5]

+ Assessment policies and practices [Likert 1: Unimportant – Very important:5]

+ Health and wellness resources

+ Student recruitment [Likert 1: Unimportant – Very important:5]

+ Staff development [Likert 1: Unimportant – Very important:5]

23 Are there any other ways your institution uses Discourse Analytics? [Open text]

24 Do you know of any future plans within your institution to use Discourse Analytics?

+ Yes (a)

+ No

+ I don't know

a Tell us more about those plans

Semantic Web Technologies

Semantic Web Technologies defines and link data on the Web (or within an enterprise) by developing languages to express rich, self-describing interrelations of data in a form that machines can process. (Ontotext).

25 How important are Semantic Web Technologies in your decision making about the following:

- + Curriculum development [Likert 1: Unimportant – Very important:5]
- + Assessment policies and practices [Likert 1: Unimportant – Very important:5]
- + Health and wellness resources
- + Student recruitment [Likert 1: Unimportant – Very important:5]
- + Staff development [Likert 1: Unimportant – Very important:5]

26 Are there any other ways your institution uses Semantic Web Technologies? [Open text]

27 Do you know of any future plans within your institution to use Semantic Web Technologies?

- + Yes (a)
- + No
- + I don't know
 - a Tell us more about those plans

Artificial Intelligence

Artificial intelligence enables computers and machines to mimic the perception, learning, problem-solving, and decision-making capabilities of the human mind (IBM Cloud Education).

28 How important is Artificial Intelligence in your decision making about the following:

- + Curriculum development [Likert 1: Unimportant – Very important:5]
- + Assessment policies and practices [Likert 1: Unimportant – Very important:5]
- + Health and wellness resources
- + Student recruitment [Likert 1: Unimportant – Very important:5]
- + Staff development [Likert 1: Unimportant – Very important:5]

29 Are there any other ways your institution uses Artificial Intelligence? [Open text]

30 Do you know of any future plans within your institution to use Artificial Intelligence?

- + Yes (a)
- + No
- + I don't know
 - a Tell us more about those plans

Open educational resources

31 How much of a priority is the integration of open educational resources to your institution? This includes paid and free open resources. [5-point Likert scale, 1: Not a priority, Low priority, Medium priority, High priority, Essential: 5. Follow up for 4 or more]

a Tell us more about what your institution is doing to integrate open education resources.

How much do you agree with the following statement? [5-point Likert scale, 1: Strongly disagree- Strongly agree: 5. Follow up for 4 or more]

32 My institution encourages the use of free open educational resources

33 My institution encourages the use of paid open educational resources

34 My institution encourages the development of open educational resources

35 My institution encourages the development of in-house educational resources

36 Do you know of any future plans within your institution to use open educational resources?

+ Yes (a)

+ No

+ I don't know

a Tell us more about those plans.

Learners' data literacy and agency

37 Has your institution developed resources or programming to support student to find, interpret and/ or use their own learner analytics?

+ Yes (a)

+ No

+ I don't know

a Tell us more about what your institution is doing to support students to find, interpret and/or use their own learner analytics?

38 Has your institution developed any resources or programming to support students to better understand the potential of blockchain to accumulate and track learning credits?

+ Yes (a)

- + No
- + I don't know
 - a Tell us more about what your institution is doing to support students to better understand the potential of blockchain to accumulate and track learning credits?
- 39 Do you know of any future plans within your institution to support students to find, interpret and use their own learner analytics.
 - + Yes (a)
 - + No
 - + I don't know
 - a Tell us more about those plans.

Survey C

Degree apprenticeships

- 1 Does your institution partner with any of the following types of organisations to provide degree apprenticeships?
 - + Other universities
 - + Other colleges (FE colleges, community colleges)
 - + Open education providers
 - + Education technology businesses
 - + Industry
 - + Other employers
 - + We have no such partnerships
 - + Other
- 2 Tell us more about the partnerships that support degree apprenticeships.
- 3 Are degree apprenticeships partnerships a part of your institutions strategic plan to address your learners' social & economic mobility? For example, it is linked to any KPIs?
- 4 How else do degree apprenticeship partnerships contribute to your learners' social & economic mobility?

Bridging programmes

Bridging programmes sometimes refer to short intensive learning programmes designed to help students gain skills or knowledge needed for further or higher education (Lexico).

It may also refer to programmes that allow students who have completed a specified qualification from FE and/or community colleges to enter directly into the second or third year of a university degree. These are sometimes also called Articulation routes.

5 Does your institution partner with any of the following types of organisations to support bridging programmes?

- + Other universities
- + Other colleges (FE colleges, community colleges)
- + Open education providers
- + Education technology businesses
- + Industry
- + Other employers
- + We have no such partnerships
- + Other

6 Tell us more about the partnerships that support bridging programmes.

7 Are bridging programmes partnerships a part of your institutions strategic plan to address your learners' social & economic mobility? For example, it is linked to any KPIs?

8 How else do bridging programmes partnerships contribute to your learners' social & economic mobility?

Other degree programmes

9 Does your institution offer any other hybrid or alternative degree programmes in partnership with other organisations?

- + Yes (a)
- + No
- + I don't know
 - a With what types of organisations does your institution partner to deliver these degree programmes?
- + Other universities
- + Other colleges (FE colleges, community colleges)

- + Open education providers
 - + Education technology businesses
 - + Industry
 - + Other employers
 - + Other
- 10 Tell us more about the partnerships that support these degree programmes.
- 11 Are these other partnerships part of your institution's strategic plan to address your learners' social & economic mobility? For example, is it linked to any KPIs?
- 12 How else do these programmes partnerships contribute to your learners' social & economic mobility?

Student support and services

- 13 Does your institution partner with any of the following types of organisations to provide student supports and/or services?
- + Other universities
 - + Other colleges (FE colleges, community colleges)
 - + Open education providers
 - + Education technology businesses
 - + Industry
 - + Other employers
 - + We have no such partnerships
 - + Other
 - a Tell us more about the partnerships that support the provision of student supports and/or services?
 - b How do partnerships that support the provision of student supports and/or services contribute to your learners' social & economic mobility?

Other partnerships

- 14 Does your institution engage in partnerships that support your learners' social and economic mobility that have not already been identified? If so, tell us about them here.



Contact us

General enquiries

+44 (0) 3300 416201

enquiries@advance-he.ac.uk

www.advance-he.ac.uk

Media enquiries

+44 (0) 1904 717500

communications@advance-he.ac.uk

www.advance-he.ac.uk/contact-us

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