Report of the Delivery of Education Task and Finish Group

June 2022

Contents

Introduction

Over the last 2 years we have seen an unprecedented focus on teaching, learning and assessment across the sector. We have experienced a rapid transition whilst living with the additional challenges we faced with dealing with a global pandemic, both at individual and societal levels. However there have been many gains from these experiences and it is essential that we capitalise on these gains. We now have an opportunity to consider the next steps for both the short and longer terms. This paper outlines the principles for education delivery at the University of Aberdeen for academic year 2022/23. The paper also makes recommendations for furthering not only the implementation of the principles but also the commitments of Aberdeen 2040.

The development of the principles and the recommendations is based on a review of internal and external evidence. The internal evidence comprises the Blended Learning Evaluation and the 2020/2021 ASES report. The external evidence may be grouped into two categories:

- the education strategies of a selected range of higher education institutions;
- reports published by sector bodies, such as Jisc and AdvanceHE, between 2020 and 2022.

Themes relating to the delivery of education were identified and followed up as necessary, through a wider literature review.
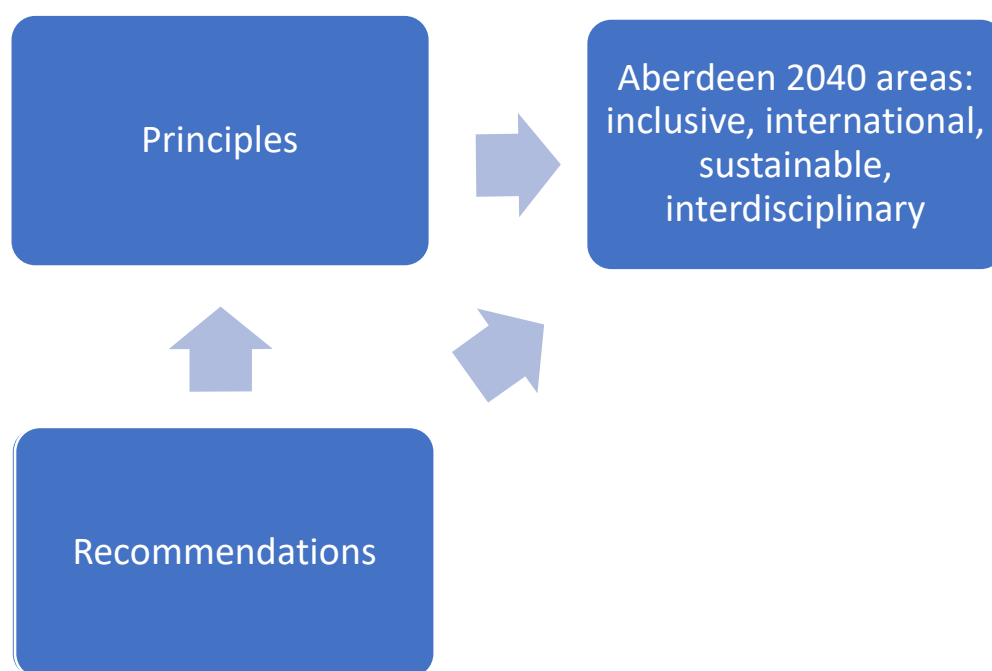
This paper is in two parts. Part 1 presents the agreed 2022/23 Principles for the Development of Education and sets out recommendations for future consideration. Part 2 comprises a fuller report on how educational delivery can meet the commitments of the Aberdeen 2040 strategy. It is structured around the strategy's four thematic areas: Inclusive, Interdisciplinary, International and Sustainable. Reflecting Aberdeen 2040, these are preceded in the report by a section titled Our Education.

Glossary of terms

Authentic assessment: testing knowledge and skills in realistic/contextualised ways.

Blended learning: the thoughtful integration of classroom onsite learning experiences with online learning experiences. provides a combination of face-to-face learning and digital activities and content that facilitate any time/any place learning.

Engagement: meaningful student participation in learning activities (synchronous or asynchronous; onsite or online)

Flexibility: in accessing learning material and providing multiple learning activities.

Mode of delivery: the place or space of learning (online, onsite or a mix of these).

Sticky campuses: digitally enabled paces here students want to spend time even when they do not have formal learning sessions to attend.

Part 1

Principles for the Delivery of Education (AY 2022/23)

The Principles are intended to communicate our staff and students a vision of education delivery informed by Aberdeen 2040. The Principles both reflect and ensure the distinctiveness of education delivery at the University of Aberdeen, which is due to the promotion of an inclusive, sustainable, interdisciplinary and international learning community. The principles recognise that education at Aberdeen comprises much more than teaching materials and the imparting of knowledge; in addition, it has an essential role in providing students with authentic experiences.

The Principles' effectiveness and implementation must be monitored. In relation to their effectiveness, future work should consider defining appropriate performance indicators, such as student opinion on relevancy, assessment, and other factors, as evidenced in the NSS and/or ASES. In terms of monitoring implementation, potential indicators may be sought in annual course/programme reviews as well as relevant sections of NSS and ASES.

Principle 1: Nurture active learning

Active learning should involve both guided and independent learning and should be designed with the achievement of learning outcomes as a focus. Make the most effective use of in-person teaching, both in small groups and in the use of large spaces (e.g. lecture theatres) to bring groups together for active learning, community-building and to support student retention. Where appropriate, asynchronous delivery should be designed to enable students to gain the maximum benefit from the active learning opportunities offered in person.

Possible approaches:

- release of some content ahead of time (e.g. as bite-size recordings, preparatory readings);
- use of a flipped classroom approach to allow more interactive, problem-based learning;
- use of student-led teaching (e.g. allowing students to research a topic, and share it with peers);
- use of practical activities (labs / creative practice / field trips / real world explorations);
- ensuring that all teaching, learning and assessment expectations are communicated clearly to students, to support them to manage their learning journey.

Principle 2: Design in opportunities for community building

Provide opportunities for students to create connections with other students, with staff, and with others (e.g. employers, international partners) on campus and in the virtual learning environment.

Possible approaches:

- use of supported discussions;
- ensuring sufficient time is provided for students to interact with one another (e.g. icebreakers, think-pair-share activities);
- use of group work;

- active peer-to-peer and student-staff interactions;
- exploring opportunities for Collaborative Online International Learning (COIL);
- use of the Virtual Learning Environment to promote interaction and collaborative learning outside the classroom;
- full class engagement in large spaces to promote sense of community.

Principle 3: Assessment should be authentic, building in integrity, and be efficient

Provide assessment that tests learning outcomes, is 'authentic' wherever appropriate (reflecting or recreating real-life situations and/or enabling students to demonstrate the applicability of their learning to various discipline contexts and scenarios), tests skills and thinking (rather than solely based on fact recall), and is streamlined to avoid over-assessment.

Possible approaches:

- use a variety of assessment approaches that allow application of knowledge (e.g. graded debates, creating resources for the public, preparing research proposals, creative outputs, reviews and summaries);
- working with employers or other stakeholders to design authentic assessments;
- digital submission as the preferred approach to submission where suitable to the format of the assessment;
- assessing each learning outcome once only to avoid over-assessment;
- embedding formative assessment to support student learning.

Principle 4: Provide timely and meaningful feedback

Provide feedback at an appropriate time for students to benefit from it, in accordance with the 3-week timeframe, focusing on developmental next steps that can be actioned by the student.

Possible approaches:

- use of peer feedback;
- use of automated feedback;
- use of individual or group feedback;
- use of alternative modes of feedback (e.g. audio, rubrics, annotation);
- use of feed-forward approaches to help aid development

Principle 5: Ensure accessibility and inclusivity

Provide teaching, learning and assessment that ensures that students are not disadvantaged or directly/indirectly discriminated against, with the aim of providing students with the opportunity to achieve their full potential.

Possible approaches:

- clear communication of all course expectations (e.g. assessment requirements, modes of delivery) at the outset;
- development of accessible and inclusive online content (with captioning);

- presenting information in multiple ways where appropriate;
- ensuring responsiveness to student needs as part of an approach that emphasises the student voice

Recommendations for further consideration

The following recommendations outline approaches that may enable both educators and students to achieve and maintain the Principles and benefit from them. It is important to note here that inclusion is a fundamental consideration within all of the recommendations below.

Recommendations in relation to students

1. Build student capacity for understanding authentic assessments as well as the feedback they receive.
2. Build capacity in students' digital skills (including the use of VLEs) as needed.
3. Make greater and more timely use of student feedback.
4. Be guided by the student voice to ensure the provision of appropriate support.
5. Support in-person and virtual exchange initiatives to support international student experiences.
6. Support students to develop good academic practices alongside a clear understanding of academic integrity.
7. Support international students to maximise opportunities and gains from their experience at Aberdeen University.
8. Alignment of assessment, learning outcomes, and employability skills/knowledge.

Recommendations in relation to staff

9. Develop teaching teams to promote Aberdeen 2040 commitments.
10. Develop initiatives, forums, projects and groups that enable staff to share effective education delivery practices.
11. Consider ways of sharing experiences with and learning from the wider sector.
12. Develop policies, projects and initiatives that provide time, training, funding and support for staff transitioning to an active learning and authentic assessment.
13. Consider ways of acknowledging and celebrating good education delivery practices.
14. Build capacity in staff pedagogical and digital skills, including the design of authentic assessment and feedback.

Recommendations in relation to students and staff

15. Curation of a safe environment where students and staff feel they can approach each other.

Recommendations in relation to physical campus

16. Consider pedagogical needs, technology and learning outcomes in planning physical campus developments and strategies, to meet the demands of the increasing number and diversity of our student populations across campuses.
17. Consider how to enhance 'sticky' campus environments which include social spaces.
18. Consider effective and flexible use of campus space to promote interdisciplinarity.

Recommendations in relation to digital

19. Ensure that the use of technology in learning is driven by pedagogy. Consider best use of the VLE to deliver student-centred, active pedagogies.
20. Consider ways of boosting engagement in blended and online learning environments through course design processes.
21. Develop the VLE beyond being a repository of learning content to become an essential and equal part of the student experience.
22. Develop the VLE to enable students to engage with their studies, their peers and their teachers further.
23. Ensure that the VLE is simple, streamlined and consistent across programmes and courses.

Part 2

1. Our education

Our Education aims to be among the very best in the world, enabling our students to grow as independent learners, to achieve their full potential and succeed whatever their personal and social background, their mode of delivery and location, and to be equipped for global employment.
(Aberdeen 2040)

1.1.   Active pedagogical approaches

The employment of active and student-centred approaches promotes inclusivity in education because it recognises the diversity of students (Garrad-Cole et al., 2021). In addition, the pandemic further pulled these approaches and corresponding pedagogical practices into research focus (Salmi, 2020). The resultant body of literature further reinforced pre-pandemic research results testifying about the positive impact active and student-centred approaches can have on student engagement, attainment, satisfaction and retention (Delgado Kloos and Gutierrez, 2022; Dumulescu et al., 2021; Leijon et al., 2021; Rossi et al., 2021). The university's internal evidence also suggests that both staff and students recognise the benefits and are in favour of the employment of active and student-centred pedagogical practices such as flipped classroom, problem-based learning, collaborative, self-learning etc. (ASES, 2021; Kiezebrink, 2021). The employment of such pedagogical approaches also aligns with Aberdeen 2040 vision of our education.

a. Flipped classroom:

In a flipped classroom model, instructors do not teach the curriculum as such, but guide the students on their own learning path. It combines self-learning, peer learning and group learning. Students are required to independently review, through readings, videos, podcasts and simulations new material *before* attending class (asynchronously). However, the students are not expected to fully understand and assimilate the material through self-learning. Instead, they are introduced to new content prior class which provides teachers the opportunity to spend contact-time (be that online or onsite) on facilitating deeper student engagement by discussions, answering student questions, apply the knowledge via problem solving or any other interactive way.

b. Problem based learning:

This is a pedagogical method in which students learn about a topic and acquire competences by working in groups to solve open-ended problems. As they are confronted with a problem, students must take stock of the information, knowledge, and tools they must learn to be able to find a solution. During synchronous online or onsite teaching learners can work through problems together in real time, be provided with opportunities to apply concepts, collaborate, and get immediate feedback or answers to questions, all of which help to deepen learning (Price and Murnan, 2004).

c. Collaborative learning:

Collaborative learning is a pedagogical approach is composed of four practical elements: (i) strategically formed, permanent teams; (ii) readiness assurance through immediate feedback; (ii) application activities that promote critical thinking and team development; and (iv) peer evaluation (Garrad-Cole et al., 2021). Students work in small collaborative groups of 2-10 on (virtual) tables that coexist within larger class settings. They are able to collaborate and interact organically with each other, and to discuss work among themselves simultaneously as the class takes place. The tutor can see everyone and can join individual tables to facilitate discussions, answer questions or provide feedback. Students should also be provided with opportunities to interact out of the classroom. This approach can facilitate greater student engagement and interaction, individual accountability in a group learning setting and deep learning.

d. Self-learning:

Self-learning can be utilised in many ways, as a complement to online or onsite teaching or as a self-standing mode of learning. It can involve the use of (digital) resources available at the institution or on the internet to enhance their educational experience.

e. Community of Inquiry (CoI):

The CoI is a pedagogical approach that facilitates learning through cognitive, social and teaching presence (Fiock, 2020). Based on these elements, the following techniques have been recommended: encourage sharing experiences amongst students, inclusion of synchronous ways of communication, employment of social software such as wikis and blogs, and explicitly address the importance of peer interaction (Garrad-Cole et al., 2021).

f. Experiential:

Experiential learning, connecting theory to practice, increasing interest and engagement, and fostering specific skills (Owens et al., 2015), is one of the most powerful ways of learning and its consistent use is fundamental in certain disciplines. Indeed, the limited amount of exposure to practicals and laboratory sessions has been argued to negatively impact the consolidation of learning (Bashir et al., 2021). Likewise, since the gradual reopening of universities, interactive experiential learning has been perceived positively by students and staff alike (Jeffery et al., 2021).

1.2. Delivery mode: online, onsite or blended

The outlined pedagogical approaches and practices, on their own or in combination, can be facilitated via multiple modes of delivery, including face-to-face, online and blended. Evidence shows that each of these has a range of benefits (Barosevcic et al., 2021; Scottish Funding Council (SFC), 2021). In the post-pandemic and post-digital educational era, where the divide between digital and non-digital is no longer useful, blended learning emerged to be one the most useful mode of education delivery. This is because it offers the flexibility (in terms of accessing asynchronous sessions or other learning

resources) sought after by students and fosters the digital skills so key in future employment (Anthony et al., 2020; Future Learn, 2022). Similarly, the blended learning modality provided by our University in later stages of the pandemic was positively perceived by most students and staff (ASES, 2021; Kiezebrink, 2021).

Garrison and Kanuka (2004, p. 96) define blended learning as "the thoughtful integration of classroom face-to-face learning experiences with online learning experiences". Blended learning seems to exist on a continuum in terms of the ratio of online and onsite elements. On one end of this scale can be the use of online resources in class. In the middle there may be a flipped classroom scenario where the dissemination of knowledge is done via pre-recorded lectures, videos, etc. which followed up by an onsite or online synchronous Q&A or practical session. On the other end of this continuum may be a scenario where online and onsite teaching is parallel and students onsite can seamlessly transition between the physical and the virtual learning environments whilst students online can also participate fully (Maguire et al., 2020). Whilst the latter scenario may be a vision to strive for as education technology develops, it is probably more helpful to focus on the thoughtfulness and meaningfulness of the blending which should be considered during the design process. Blended learning, much like any learning, must be aligned with learning outcomes and pedagogies (Loon, 2021).

1.3.   Assessment and feedback

The pandemic provided an opportunity to look beyond traditional invigilated exams and essays. External evidence (Tertiary Education Quality and Standards Agency, 2020; Garrad-Cole et al., 2021; Future Learn, 2022) and internal evidence (ASES, 2021; Kiezebrink, 2021) suggest that the move towards authentic, continuous low-stakes or formative assessments were welcomed by students and staff alike. In particular, a report commissioned by the Office for Students (Maguire et al., 2020) recommends the dissection of learning elements into small, manageable chunks that can be continuously formatively assessed with a view towards summative assessment. The need for the use a wide variety of assessment methods (e.g., portfolios, collaborative assessments, open-book assessments) has also been noted (Salmi, 2020).

Additionally, using low stakes and formative assessment can provide opportunities for meaningful feedback so important for student learning. Evidence suggests (Barosevcic et al., 2021; Garrad-Cole et al., 2021) that useful feedback takes place early and frequently and requires actions from learners based on the outlined developmental and feed-forward comments. Additionally, it can take the form of self-evaluation, peer-led feedback, and automated feedback by the use of exemplars and rubrics complemented or moderated by lecturers. Overall, it is possible to "share the responsibility of feedback and use formative assessment with automatic feedback, self and peer evaluation to build towards authentic summative assessment" (Garrad-Cole et al., 2021, p. 9). Alongside this, capacity building in feedback literacy may be needed.

The move towards flexible assessment approaches, however, cannot be discussed without addressing the issue of integrity. There is a general sense of concern, both in relating literature and within the university, regarding the integrity of non-invigilated despite lack of evidence suggesting increases in cheating behaviour (e.g., grade inflation). Whilst traditional methods of assessment may still have a place in higher education, according to Jisc (Barosevcic et al., 2021, p. 33), the answer to these

concerns potentially lies in the "constructive alignment of assessment with learning outcomes and employability agendas, with a focus on supporting students in developing good academic practice and promoting clear understanding of academic integrity".

The suggestion of streamlining, clarifying and clearly communicating not just assessments but also learning activities, whole programmes and university visions and strategies is further supported by recent reports (Salmi, 2020; Garrad-Cole et al., 2021) and the University's Student Experience Survey results (ASES, 2021). One potential way to achieve this is through the employment of 'backwards design' with embedded assessment (Garrad-Cole et al., 2021). The promotion of academic integrity may be possible by initiatives, projects or activities employing the nudging theory (Warm and Vettori,2022).

2. Inclusive

1. Care for the wellbeing, health and safety of our diverse community, supporting and developing our people to achieve their full potential (Aberdeen 2040 Commitment)

2.1. Design for diverse student population

The student body at Aberdeen University has been growing and diversifying over the last decades. Aligning with Aberdeen 2040 strategy and extant literature (Maguire et al., 2020; Barber et al., 2021), inclusivity and accessibility need to be foundational considerations during course design. The pandemic has seen higher education institutions adopt some adjustments, such as captioning and lecture capture, which proved to be effective and well-received by students, particularly those living with learning disabilities (ASES, 2021); however, these type of adjustments can be characterised as 'bolt-on'. Indeed, it often argued that inclusivity should take a fundamental and integral role in course design.

This can be done by the critical adoption of an approach called Universal Design for Learning (UDL) which aims to show information in different ways, includes a variety of learning tasks that allows students to demonstrate their knowledge in various ways and incorporates multiple ways of engaging students (Garrad-Cole et al., 2021; Kim and Maloney, 2021). A recent AdvanceHE literature review (Loon, 2021) brings an example of this where students are allocated individual bundles or buckets of various learning activities to be used completed throughout the course, at their preferred pace and order; the teacher in this example manages the individual learning bundles and can also integrate bundles together. This way, according to the authors, it possible to provide flexibility for students whilst maintaining lecturer control and achieving learning outcomes.

Of course, providing this kind of flexibility, whilst becoming ever more important, can bring challenges and disadvantages. In particular, it has been argued that too much flexibility can lead to inequalities as well as confusion (Houlden and Veletsianos, 2019). To combat this, clarity and explicitness regarding course aims, expectations, value and deadlines were recommended (Garrad-Cole et al., 2021). Turner and colleagues (2017), for example, advocated for the use of structured timetables that include all teaching and learning activities including independent and collaborative study (particularly in flipped classroom designs), workshops, deadlines and other relating activities. At one university this was done through compulsory start-of-year micro credential courses outlining not just course structure and design, but also modality, links to learning and graduate outcomes, and expectations in relation to engagement and participation in learning activities.

2.2. Community building

Another key area in relation to inclusivity in learning design is the need to facilitate community building for the diverse student population. During the pandemic the importance of these aspects of learning became apparent (Maguire et al., 2020). Moreover, social presence and sense of belonging has been linked to mental health (WonkHE, 2022). This area has also been highlighted by our internal

evaluation of blended learning (Kiezebrink, 2021). Aligning with this, Gravity Assists (Barber, 2021) report recommended for building communities to become a fundamental consideration in course and programme design.

There are multiple ways of According to an AdvanceHE report (Garrad-Cole et al., 2021), engagement and a sense of community is dependent on interaction with course material, students and academic staff. Likewise, students often find it helpful for academic staff to encourage and facilitate social interaction between students (Jisc, 2021). In addition to this, elements of the approach called 'community of inquiry' may be utilised (Castellanos-Reyes, 2020).

3. Interdisciplinary

6. Support a learning culture in which all our staff and students can exchange ideas and expertise across intellectual areas and organisational structures

8. Build networks across our community to foster interdisciplinary interactions between our subject research strengths, using and sharing expertise to drive new understanding

10. Develop our digital systems and enhance our buildings to create virtual and physical spaces that enable interdisciplinary exchange and innovation

(Aberdeen 2040 Commitments)

3.1. Interdisciplinary teaching teams

There is potential to nurture our ambitions around supporting interdisciplinary learning culture through the delivery of education. It is important to note that interdisciplinarity, both within courses and their delivery, needs to be justified given that disciplinary knowledge and student identity are fundamental to interdisciplinarity. Whilst it seems imperative to provide opportunities for students to interact with peers from other schools and disciplines, perhaps greater interdisciplinarity amongst academic staff may contribute to fostering the culture by modelling behaviours. Indeed, Hannon et al (2018) argued that staff working across disciplines has profound effects on institutional culture.

Interdisciplinary teaching teams are said to facilitate a range positive outcomes for both students and staff. In terms of the former, in his recent literature review, Loon (2021) concluded that interdisciplinary teaching teams can contribute to the development of education that includes multiple perspectives. Behrends et al (2021) demonstrated the benefits of interdisciplinary teaching teams on the digital skills of undergraduate medical students. For academic staff, benefits included enhanced self-efficacy and self-reflexivity (Chen and John, 2020) as well as innovation and creativity in learning design (Stewart, 2018).

Of course, these benefits can only materialise if the teams operate effectively. Literature tells us that effective teaching teams are fully integrated, characterised by intensive and open communication between individuals and have established roles and rules as well as shared values, goals and leadership (Loon, 2021). Shared knowledge objectives and dedication to the employment of active, student-centred pedagogies are particularly important (Kodkanon et al., 2018; Meeuwissen et al., 2020). In terms of shared leadership, equality amongst team members is key, and it is often represented by equally divided courses credits and the development of learning activities and assessment that includes all the disciplines of the team. According to Stewart (2018), the development of effective interdisciplinary teaching teams can be supported by (i) the forming of well-matched teams in terms of personality, experience and collegiality, (ii) workshops facilitated by experts (both within and outwith the institution) as well as workshops addressing emerging challenges, and (iv) sharing good practice.

3.2. Encourage cross-departmental working relationships

A potential way to support staff and encourage the envisioned education delivery is the facilitation of working relationships both within and across departments. A report by Jisc (Barosevcic et al. 2021) suggests that finding effective learning designs is dependent on collaborative effort between academics across and within disciplines as well as pedagogical advisers and other support staff. Likewise, according to Gravity Assists (Barber et al. 2021), the sharing of effective practice is a key area of opportunity for universities in the post-pandemic higher education scene. There is also emerging evidence, both external and internal, indicating the effectiveness of peer learning (Nunez et al.,2022; *Resilient Learning Communities: End of Year 1 report for the University of Aberdeen*, 2021).

3.3. Estates

a. Physical estate

During the pandemic, virtual university estates have come to the forefront with some predicting the end of campus-based learning and higher education. Indeed, there are some arguments (e.g., Bashir et al., 2021) that emphasise the role of the physical estate to enable hyflex learning (where online and onsite learning are simultaneous and parallel). However, evidence suggesting the importance of the physical campus has emerged (e.g., Scherman and Snow, 2021; Scottish Funding Council (SFC), 2021). According to Deshmukh (2021), even the digital-native generation acknowledges (and admittedly missed) the inherent value of shared experience and interpersonal engagement that happens naturally onsite. Physical estates play an important role not just in supporting student learning but also building a sense of community. Campus buildings, such as libraries, can offer a quiet place to study as well as places for peer interaction coupled with learning (Tertiary Education Quality and Standards Agency, 2020).

In relation to the delivery of formal education, literature highlights the need that pedagogy and learning outcomes should be the purposes driving campus environments. According to an Universities and Colleges Information Systems Association (UCISA, 2016) report, campus should be accessible, flexible, adaptable, sustainable, comfortable and full of power and wireless capabilities; as well as designed in partnership with students. In addition to these purposes, designers, management and educators should work together to harness the next generation of technology to create transparent, accessible and effective formal and informal learning environments (Pieprz et al., 2021). A relating example is the not-so-new idea of sticky campuses or "digitally enabled paces here students want to spend time even when they do not have formal learning sessions to attend" (Jisc and Emerge Education, 2022). These promote collaborative learning and community building; however, they typically rely on sensors and real-time data being collected which is often not supported by students (Cormack, 2020).

Another, perhaps more accepted proposal in this area focuses on the flexible and efficient use of space. According to Deshmukh (2021), some of the initiative in this area aims to learn from museums and libraries that managed to reposition themselves as physical and virtual places where knowledge and community are constructed. Other initiatives argue for innovative use of space in terms of planning and timetabling. These envision the delinking of schools from specific buildings or spaces. Instead, campus becomes an amalgam of hybrid buildings used in various, flexible ways across semesters.

b. Digital estate

The digital estate also exists to support active and student-centred pedagogies as well as the interdisciplinary pledges of the Aberdeen 2040. In this area, the pandemic escalated and drove innovations (Salmi, 2020). In particular, virtual learning environments (VLEs) play a significant role in student learning given that they bring potential for flexibility, sustainability and personalisation (Scottish Funding Council, 2021). Likewise, it has been found that students expect some degree of online learning in their courses because it affords them some flexibility (Loon, 2021).

However, literature advises to avoid using technology for technology's sake; the use of VLEs should be driven by pedagogic needs (Barber et al., 2021). A recent report by Hamer and Smith (2021) concluded that learning design, particularly in terms of accessibility, pedagogy and consideration of student needs, was one of the most important determinant of student engagement within VLEs. Moreover, the pair argued that the effective use of VLEs "requires pedagogical techniques that use technologies in constructive ways to teach content" (Hamer and Smith, 2021, p. 24).

Aligning with being pedagogy driven, VLEs need to move beyond their current function of repository for programme documentation. Instead, they should be essential part of and connected to the overall learning experience: they should enable students to engage with their studies, their peers and their teachers further (Maguire et al., 2020). Aligning with this, institutions have been experimenting with inclusive mobile-first and low-bandwidth VLEs inspired by social media platforms where users land in the learning community and newsfeed, they can browse, share and comment on learning materials; as well as create working groups and send messages to peers and academic staff alike (Barosevcic et al., 2021).

Additionally, whilst avoiding attempts at mimicking synchronous student-staff session, VLEs do require teacher presence to guide learning and facilitate social interaction. Discussion boards can be helpful in this area. An AdvanceHE report (Garrad-Cole et al., 2021) noted that discussion boards are pivotal in fostering social discourse leading to knowledge construction, critical thinking skills and sense of community. Further, it is posited that the most effective discussion boards are scaffolded by teacher presence whereby academic staff monitor, moderate, encourage and keep discussions focussed by regular and short contribution (Tertiary Education Quality and Standards Agency, 2020).

VLEs and all other technologies, much like learning and education, need to be simple, streamlined and consistent so far as possible to ensure seamless use by students and staff alike (UCISA, 2016). Their effective use, by students and staff alike, can be ensured by crash courses at the beginning of academic years, as noted in an earlier section.

4. International

12. Equip our graduates for global employment through our curriculum and teaching methods

14. Ensure all our students can have an international experience, by studying abroad or working collaboratively with international partners

(Aberdeen 2040 Commitments)

4.1. International exchange programs

Internationalisation has been on the agenda for decades now (Wit and Altbach, 2020), which includes the recruitment of students internationally. The pandemic, with its restrictions on international travel, considerably impacted students' international experiences (Salmi, 2020; Watermeyer et al., 2020). Alongside the internationalisation of the student body, it is becoming increasingly important to support international students in making the most of arising opportunities; this support may include counselling, language and other academic areas (Salmi, 2020).

Gaining international experience is also important for local and national students. Virtual exchange programs, or student participation in online intercultural interactions and collaboration with peers from different cultures or locations were developed or enhanced to provide opportunities for international experiences (Garcés and O'Dowd, 2020). Salmi (2020), for example, reported various initiatives spanning the Americas, Asia and Australasia; one of the most known European schemes is the Erasmus+.

With the easing of travel restrictions in-person exchange programmes are likely to become the preferred source of international experience, their virtual form also provides a range of benefits. Virtual exchange programs have been argued to contribute to the achievement of educational outcomes, intercultural understanding, and interdisciplinary transfer of skills and knowledge(Otieno, 2021). For example, Jones et al (2021) found that a virtual international exchange program that included a three-week collaborative, interdisciplinary online course serves as an effective model for transformative learning focussing on sustainability. Likewise, an 8-week collaborative online international learning programme in the field of engineering found that the performance of participating students was better than their peers (Appiah-Kubi and Annan, 2020). Similar findings emerged from the discipline of nursing (Jung et al., 2022) and humanities (Jiang, 2022). Moreover, these type of initiatives are not resource intensive, unlike their "real life" counterparts (Otieno, 2021; Jiang, 2022). Therefore, it seems advisable to continue with virtual exchange programmes.

5. Sustainable

16. Encourage everyone within our community to work and live sustainably, recognising the importance of our time, energy and resilience.

20. Generate resources for investment in education and research year on year, so that we can continue to develop the people, ideas and actions that help us to fulfil our purpose

(Aberdeen 2040 Commitments)

5.1. Student voice and partnership

Taking care of one of our resources, students, in the context of education delivery may relate to ensuring appropriate workloads and assessments. However, a powerful way of ensuring the provision of appropriate support is to incorporate student voices in the delivery of education. Indeed, many of the reviewed reports published by sector bodies (Barber et al., 2021; Barosevcic et al., 2021) argued for the greater use of student feedback with Salmi (2020) noting that "higher education leaders would be well served to rely more frequently and systematically on such feedback mechanisms." This also aligns with the Scottish Funding Council's (2021) recent report which argued that in order to make Scotland the very best place in which to be a higher education student requires the establishment and maintenance of clear and purposeful partnerships with students.

5.2. Supporting engagement in blended and online learning

An area of challenge that emerged from the Blended Learning Evaluation (Kiezebrink, 2021) related to engagement in blended and online learning. This is certainly an important consideration in course design given that emerged to be one of the most challenging areas of blended and fully online learning during the pandemic. Indeed, it has been argued that very few approaches have been developed to support students' transition to blended and online learning, particularly in relation to the development and maintenance of effective learning behaviours (Neuwirth et al., 2021). Additionally, the use of blended and active pedagogical approaches that rely on strong self-management and academic skills may risk leaving disengaged students (who are often from less advantaged backgrounds) behind (Valcke,2022). Likewise, feelings of teaching into the 'void' during synchronous online sessions was often highlighted by academic staff (Kiezebrink, 2021). Evidently, engagement does not automatically happen in online (and often onsite) environments which has negative impacts on students and staff alike.

Multiple strategies have been recommended to address this challenge. Some universities explicitly require active engagement and participation from their student population which is often included grade calculations (Eden et al., 2022). Others, however, advocated for the employment of the so-called 'nudging theory' (Warm and Vettori, 2022) in encouraging engagement. Yet others argued that incentivising pre-class engagement in flipped learning design can contribute to greater engagement in synchronous sessions (Howell, 2021). Evidently, there are multiple ways to combat the challenge of

disengagement in online and onsite learning sessions; these should be considered during the course design.

5.3. Supporting staff

Designing courses that employ active blended pedagogies, authentic and continuous assessment alongside summative assessments is resource intensive, particularly in term of staff time and effort. Approximately half of a teacher population surveyed by Jisc (2021) admitted to not having enough time or support to consider and modify the delivery of courses. Furthermore, according to a recent report by lotus (Zhang, 2022), many higher education institutions' academic staff seem to experience 'teaching fatigue' referring to the intense effort that went into teaching since the pandemic begun. Likewise, a recent report by University and College Union (UCU, 2022) found that two third of the UK higher education teaching force is contemplating leaving the profession in the next five years partially due to increasing workloads. This area of challenge has also been highlighted in surveys and focus groups examining the Covid education delivery within the University (Kiezebrink, 2021). Staff should be supported.

Various incentives and projects may be developed to encourage the redesign of courses to employ active pedagogies, effective feedback and authentic assessments. It has been argued that academic staff should be supported when considering the redesign of courses, including selecting the most appropriate active approaches, outcome-focused learning activities and feedback forms (Barosevcic et al., 2021; Hamer and Smith, 2021). Additionally, Jisc (2022) recommended that staff should be provided with ample time to design every aspect of their courses. An exemplary initiative is a Finnish university's project encouraging flipped learning by the allocation of time (2 months), additional funding for faculty, and support (experienced teacher or flipped learning expert) for teachers to redesign their courses in a 'flipped' manner (Kivimaki and Pajarre, 2022). Another example from Spain (Nunez et al.,2022) was the development of interdisciplinary teacher groups (including a dedicated expert) working to implement problem-based learning across their various courses.

Good education delivery practice should not only be encouraged, but it should also be institutionally acknowledged and celebrated. This seems particularly important in the light of recent evidence suggesting that teaching often remains undervalued (Zhang, 2022). Indeed, internal evidence also suggest that one of the major benefits of the pandemic was that academic staff felt 'allowed' to prioritise considering their teaching practices (Kiezebrink, 2021). It seems imperative that the effort our staff exercise to achieve the type of learning envisioned by our principles gets acknowledged or rewarded. A report by Jisc and Emerge Education (2022) suggested that that recognising and rewarding good practice and innovation can make significant contributions to their spreading as well as the organisational culture.

Another key source of support is training, particularly in relation to pedagogical and digital skills. In terms of the former, the need to develop learning and teaching capacity has been emerging from external evidence (Barosevcic et al., 2021; Zhang, 2022). Levels of pedagogical capacity at our University is unclear given that we do not currently collect relating data; however, the drive towards the deployment of university-wide active learning may bring about need to build teaching skills further.

In terms of academic staff's digital skills, surveys looking at Covid education experiences suggested that academic staff's digital skills were pivotal during periods of online delivery (Jisc, 2021). The University's student experience survey (ASES, 2021) also suggested that insufficiencies in digital skills were a source of frustration for many students. Accordingly, Jisc (2022) recently recommended that higher education institutions should invest in digitally capable staff at all levels. Recognising this, multiple reports recommended for institutions to look at their training provision for academic staff both on and beyond digital skills (e.g., Barber et al., 2021; Scottish Funding Council, 2021). Some sector evidence noted the potential of crash courses for digital fluency and the effective use of institutional digital estates (Salmi, 2020).

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