



Interdisciplinary Learning: ambitious learning for an increasingly complex world

A thought paper from Education Scotland, NoTosh and a Co-Design team from across Scotland

Update: October 2023

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The purpose of this paper is to:

- share the emerging thinking of the interdisciplinary learning (IDL) co-design group for work in session 23/24,
- provide an update on their work so far in relation to action points set out in Education Scotland's Corporate Plan¹ from the OECD report of June 2021² and
- focus on the group's thinking about **IDL in the senior phase** given the renewed interest presented by the recommendations from the report from the Independent Review of Qualifications and Assessment (IRQA).

¹ **Education Scotland Corporate Plan 22-25:** NID 01 Implement the curriculum recommendations of the OECD Review and other relevant reports.

OECD Recommendation 1.2 Find a better balance between breadth and depth of learning throughout CfE to deliver Scotland's commitment to providing all learners with a rich learning experience throughout school education.

Related action 1.2.5: Re-convene the IDL practitioners co-design team to evaluate the August 2020 Thought paper: [Interdisciplinary Learning: ambitious learning for an increasingly complex world \(2020\)](#)¹ against OECD recommendations. Identify next steps.

² Scotland's Curriculum for Excellence. Into the Future. OECD. 21 June 2021.

Language Matters: definitions

1. [Interdisciplinary Learning: ambitious learning for an increasingly complex world \(2020\)](#)¹, a thought paper by Education Scotland, No Tosh and the original co-design group from across Scotland outlines what **interdisciplinary learning (IDL)** is in the Scottish context.

“What is IDL? Defining and agreeing what IDL is has been a source of discussion for some time and has an impact on its implementation in practice. Global influencers such as the OECD, for example, refer to IDL as one form of cross curricular learning. The discussion on definition formed a large part of the work of the co-design group. What follows is the group’s definition of IDL.

Interdisciplinary Learning is a planned experience that brings disciplines together in one coherent programme or project. The different disciplines plan and execute as one. These disciplines might fall within one curricular area (e.g. languages, the sciences) or between several curricular areas. IDL enables children and young people to

- learn new knowledge or skills, and develop new understanding of concepts;
- draw on prior knowledge, understanding and skills;
- transfer and apply that collective knowledge to new problems or other areas of learning.”

2. A helpful definition which complements Scotland’s definition of interdisciplinary learning is the PBL Works definition of **Project Based Learning**. This definition outlines the pedagogy considerations.

“Project-based Learning (PBL) is a teaching method in which students gain knowledge and skills by working for an extended period of time to investigate and respond to an authentic, engaging and complex question, problem or challenge.

PBL requires critical thinking, problem solving, collaboration and various forms of communication. To answer a driving question and create high quality work, students need to do much more than remember information. They need to use higher order thinking skills and learn to work as a team.”

[What is Project Based Learning? | PBLWorks](#)²

PBLWork’s key elements of project-based learning are set out in [Appendix 2](#).

3. In [It’s Our Future: Report of the Independent Review of Qualifications and Assessment](#)³, published June 2023, Interdisciplinary Learning sits under the term ‘**Project Learning**’ – one of three areas within the proposed Scottish Diploma of Achievement (SDA). For the

purposes of this paper, when we discuss IDL in the senior phase taking account of the IRQA recommendations, the term **Interdisciplinary Project Learning** will be used. It may be helpful to therefore draw on both definitions set out above.

Background

Since the inception of Curriculum for Excellence (CfE) in 2004, Interdisciplinary Learning (IDL) has been a core context for learning. Despite this, IDL has yet to become a habitual learning approach when designing curriculum and learning experiences throughout the early years to senior phase learning journey.

Over 2018-19 the CfE narrative was refreshed and, in September 2019, a framework for [Scotland's Curriculum](#)⁴ was published. IDL remained as a core context for learning. During the development work on the refresh of the narrative it became clear that there was confusion and a lack of confidence linked to thinking about IDL. In response to the requests from the teaching profession for further support in this area, Education Scotland engaged NoTosh, a design thinking agency, to collaborate on a series of creative curriculum co-design events focussed on IDL.

In December 2019 national partners and Directors of Education across all 32 local authorities were invited to nominate education practitioners who were rich and proficient in IDL thinking to co-design a paper outlining what IDL is and what it isn't. The paper also explored the purpose, planning, mindset and pedagogy needed to support the creation of high quality IDL learning experiences. The output of this work was the Interdisciplinary Learning Thought Paper created by educators, for educators. [Interdisciplinary Learning: ambitious learning for an increasingly complex world](#)¹ was published in 2020 during the Covid pandemic thereby impacting on plans for further work at that time.

The group set out a number of suggestions for the next stage of their work and grouped these under **3 key themes**:

“The whole person - knowledge, skills and wellbeing

- Qualifications bodies might consider more sophisticated assessment strategies, especially those that help young people show and celebrate their growth. Assessments today are too focussed on summative tests and encourage a fixed mindset about success.
- Qualifications for subjects don't always sit comfortably with approaches that seek mastery of a subject or discipline. While the Scottish Baccalaureate is designed to offer the chance for learners to undertake an interdisciplinary project, qualifications might more broadly include this kind of challenge.
- Where colleges, universities and schools partner on creating new accreditations with the SCQF, the cost of using them is sometimes proving prohibitive. Colleges and universities need to consider the long-term advantage of partnership with co-designers in schools, and ensure accreditation of learning is affordable.
- Initial Teacher Education should include several opportunities for practitioners to participate in quality co-design and planning of IDL, and experience the execution of an IDL experience.
- The worlds of business, public policy and education need to come together to understand what IDL is, what IDL experiences involve, and place a value on those skills - the experience needs to have value, that value needs to be demonstrable, and it needs

to be valued by qualifications providers, society and employers. The capital built up by DYW should be a key enabler here.

- Approaches to evaluation of the curriculum need to adapt to reflect the value of IDL. For example, this could be reflected in How Good Is Our School.
- Timetables in school are designed around one practitioner at a time working with 20-30 learners. There is little planned time for practitioners to co-plan and design IDL experiences between disciplines. Timetabling needs rethought, and the right kind of planning time created. Curriculum-based collaboratives with Principal Teachers, practitioners and support workers might centre on a specific grouping of disciplines over time.
- S6 provides an opportunity for some of the richest, deepest and most broad IDL experiences. Schools might set aside time and set expectations for learners to design their own collaborative capstone projects, which have meaning to them beyond getting into college or university.

IDL is Learning

- There is still scepticism about the quality of learning achieved in secondary through IDL experiences. Colleges and universities might consider partnering with practitioners to measure the impact and requirements of quality IDL experiences.
- The commitment to IDL is unequal across schools and Local Authorities. The time, training, tools and resources need to be put in place locally, regionally and nationally so that practitioners and leaders can gain enthusiasm and understanding for what is possible. Professional Review and Development programmes need to include detailed analysis of practitioners' needs to improve their practice.
- IDL is not just about structures and set up, nor just about planning: it needs practitioners who are skilled in collaboration and delivery, with approaches that help learners undertake deep learning. We need a strong national programme of upskilling, and stronger emphasis on initial teacher and practitioner education and the first years of practice, including team teaching and cooperative learning.
- The physical environment of school might need rethought, with an increased importance placed on easy access for learners to the provocations and research from the internet. Outdoor learning environments also provide scope for different thinking, different approaches to learning.
- Schools can start increasing non-IDL opportunities for more team-based and collaborative approaches, to raise confidence and skill sets. Leaders need to ensure that there is flexibility through built-in personalisation and choice that allows for creativity.
- Schools have an ongoing job in making parents and partners aware of the benefits of IDL and skills development, and actively seeking engagement from parents and partners during planning

Realising ambition, embracing opportunities and building confidence

- Leaders might reduce bureaucracy that isn't core to the development of skills and the design of experiences that bridge disciplinary silos.

- Leaders might invest professional learning time in creating those shared understandings of how to plan and execute IDL experiences, and in external support if it is required to get things started.
- Education Scotland might co-create tools, resources, principles and pilot and share examples of how schools are realising ambition through the development of bold IDL experiences.
- Individual classroom teachers and practitioners could experiment with and share their learning space, timetable and IDL planning tools with colleagues in similar contexts.
- Local Authorities could identify and amplify creative approaches to timetabling, planning of space and of learning that contribute to bold IDL experiences.”

Update: 2022-2023

In September 2022 the second phase of the IDL co-design work was activated. The initial co-design group reconvened to develop the suggestions in their paper into realistic and effective support for teachers and practitioners in their roles as curriculum designers, thereby increasing their confidence and competence in the planning and teaching of IDL. From the initial group of 40 educators and educator partners the group has since quadrupled. This has been through invitation to Local Authorities through the Association of Directors of Education Scotland (ADES) Curriculum and Qualifications Network (CAQ) and in response to those educators who have since contacted the Curriculum Innovation Team to request advice and support with IDL.

The group has aligned its approach to the [Scottish Approach to Service Design](#)⁵ to ensure the work is relevant and appropriate in supporting teachers' and education practitioners' pedagogical practice and learners' learning experiences.

The starting point for the group was to reflect upon the initial thought paper and evaluate its relevance post pandemic and against the 2021 OECD report: ["Scotland's Curriculum for Excellence: Into the Future"](#)⁶, OECD 2021 and ["Putting Learners at the Centre : Towards a Future Vision for Scottish Education"](#)⁷, Muir 2022. Since beginning this work, the group has also taken cognisance of the [National Discussion](#)⁸ (2023) and the [Independent Review of Qualifications and Assessment](#)³ (2023) and will continue to develop these considerations and the shared thinking around IDL in a research and reform rich education landscape.

The 4L's Retrospective Tool was used to evaluate the paper. This tool captures what the evaluators loved about the paper, what they learned from it, what it lacked and what they long for. This feedback was then assimilated into key themes using an affinity mapping approach. At the same time as they evaluated the paper, group members were invited to share practice of how they have developed IDL in and across their own settings and contexts. This has been captured in an IDL Innovation Hub Padlet where group members can share their own practice, invite others to comment on their ideas, share key reading and resources to support the work.

Loved	Learned
<ul style="list-style-type: none">• Gave a clear definition of what IDL is and isn't.• Aligned to Scotland's Curriculum aspirations, the 4 Capacities and 4 Contexts and the 'purpose' of learning.• Afforded opportunity to revisit the value of IDL.• Co-design as a process was effective and recognition of the voice of the profession was valued.	<ul style="list-style-type: none">• How others were developing IDL in their contexts.• The difference between IDL and other ways of planning learning.• The importance of the role of the learner when designing IDL.• High quality IDL encapsulates skills and knowledge.

Lacked	Long For
<ul style="list-style-type: none"> • Overall strategy for implementation which includes partners. • A strong design process to support planning and assessing learning. • More examples and sign posting of where there are strong examples of practice. • A true commitment to the progression of learning 3-18 through IDL. • Support for educators to design rich IDL which recognizes the evidence of learning through the Four Capacities and Four Contexts. 	<ul style="list-style-type: none"> • An updated qualification systems that accurately reflects the totality of learners' achievements. • More flexible/fluid working practices and frameworks - rather than the current GTCS/Union approach - which is often restrictive. • Professional learning programme to support staff at all stages in their career. • Time for practitioners to collaborate and plan exciting contexts/opportunities for our learners. • How can we involve learners more in co-designing the curriculum? What could that look like?

The outcome of the evaluation gave the group a shared purpose as defined in the 'lacked' and 'longed for' sections of the retrospective. This clarified and reinforced the '**why?**' of the work of IDL co-design group for session 2023/24 and beyond. Following their considerations of both the 4 L's retrospective and the significant factors in the examples of practice, the group assimilated their findings into a projection, a process and intended product of their work.

Projection (What)

The 5 year vision for this work is to support Scotland's Curriculum being realised in and across our schools, settings and wider learning contexts. This group will support the ecosystem shift the ethos and culture of learning environments through a greater focus on the interactions, experiences and spaces where deep learning can be evident. Interdisciplinary learning will be a vehicle to allow learners to thrive now and in the future by developing their abilities to apply disciplinary knowledge in rich contexts to develop new learning and developing transversal skills. Interdisciplinary learning will be exemplified across a range of contexts and with a range of purposes. This learning will be valued and recognised as deep learning and will be developmentally progressive across the learning journey from early years to senior phase and beyond.

Process (How)

To aid the group in planning how they can support Scotland's approach to IDL project learning they used their 5-year vision forecast and back cast to consider the incremental steps to realise this ambition. This work has been defined into 3 interacting system leadership workstreams:

- **Shifting culture and practice** to embrace and encourage opportunities for interdisciplinary learning.
- Research and evidence developmentally appropriate **pedagogy** for interdisciplinary learning.
- Develop and implement a high-quality **professional learning** offer for educators across sectors and for all layers of the ecosystem.

Product (So What?)

When considering the impact of this work the co-design group agreed that the outcome will be educators who are empowered and courageous and commit to learning which aligns with the vision of Scotland's Curriculum. This will be sustained by an easily accessible professional learning package of support which meets educators where they are in their pedagogy of interdisciplinary learning. This package of support will be designed with and by educators and education partners and will exemplify developmentally appropriate practice through the learning journey.

Children and young people will have progressive opportunities to develop and demonstrate the four capacities across the four contexts for learning. They will experience high quality interdisciplinary learning enabling them to apply disciplinary knowledge and skills into rich learning contexts to develop new learning. The learning will have relevance and meaning for children and young people now and for their future. They will be confident in articulating what they know, are able to do as **citizens** and **contributors** and are better prepared for the world beyond their 2-18 learning journey.

Interdisciplinary Project Learning (IPL) in the Senior Phase

Since this initial evaluation we have seen the publication of [All Learners in Scotland Matter: Our National Discussion on Education](#)⁸ and [It's Our Future : Report of the Independent Review of Qualifications and Assessment](#)³. The group will consider the future of their work through both these lenses beginning in the November 2023 co-design sessions. There has been ongoing investment in interdisciplinary and/or project-based approaches in the senior phase from a range of partner organisations over several years. Overall, all local authorities and over 300 secondary schools have gained experience through these project based approaches (*See appendix 1*). At the time of writing this report we collated data from the following partner organisations. These include:

Programme/Investment	Source/provider/partner
Youth Philanthropy Initiative (YPI)	The Wood Foundation
Excelerate	The Wood Foundation
Design, Engineer, Construct	Class of Your Own
Creative Thinking Qualification	Daydream Believers
Global Challenges/ Sustainability Diploma	Futures Institute at Dollar Academy
Engineering Design Challenge	New College Lanarkshire
Healthcare Pathway Pilot	SDS/NHS Youth Academy

The data and information from following partner organisations which also focus on IPL in the secondary and/or senior phase will be included in further updates:

Programme	Source/provider/partner
Social Enterprising Schools	Social Enterprise Academy
Powering Futures Challenge	Powering Futures
Company Programme	Young Enterprise Scotland
Circular Economy Challenge	Young Enterprise Scotland
Gen+	Vardy Foundation

A subgroup of these partners met in September 2023 for a learning workshop to discuss and consider some of the implications and recommendations for **Interdisciplinary Project Learning** in the Senior Phase as part of the proposed Scottish Diploma of Achievement. This subgroup consisted of educators from the IDL co-design group and partners who are already working with high quality interdisciplinary project learning and/or quality assured SCQF accredited and non-accredited interdisciplinary project learning in the senior phase. They were:

- 1. Daydream Believers:** Creative Thinking Qualification (Accredited @ SCQF Level 5 & 6)
- 2. The Wood Foundation:** Excelerate Investment (BGE/Senior Phase)
- 3. FIDA:** Futures Institute at Dollar Academy (BGE/Senior Phase in process of accreditation)
- 4. New College Lanarkshire/Grove Academy:** Engineering Design Challenge (Accredited @ SCQF level 6)
- 5. The Wood Foundation:** Youth Philanthropy Initiative (YPI) (BGE/Senior Phase)

6. SDS/NHS Scotland Youth Academy: Healthcare Pathway Pilot in collaboration with NHS (Senior Phase Accredited @ SCQF level 5)

Summaries of each of the programmes are included in pages 14-19.

During the learning workshop, attendees shared the foundations and impact of their work through the lens of the system leadership workstreams identified on page 7: Shifting Culture and Practice, Pedagogy (learning, teaching and assessment) and Professional Learning.

The exemplification from these partners allowed us the opportunity to explore some of the key features which have significance when developing high quality interdisciplinary project learning.

These features are set out at 1 to 6 below.

1. Developing Capacities

When considering the learning and teaching experiences it was clear to see how these programmes developed young people across all four capacities. These projects were designed to develop young people as individuals, citizens and contributors as well as learners. By developing Meta-skills through the projects, young people develop their individual skills which make them unique as human beings. They give young people the chance to recognise their own strengths, areas for further development, motivations and interests and have opportunities to lead their own learning. The themes of sustainability and philanthropy which are evident to differing degrees across the examples allow young people to develop their capacity to be citizens within the school, its community and wider world. The interdisciplinary project learning process and product intentionally develop the young person's capacity to create and contribute. Through the process they contribute to the work of their wider team as they discover, define, develop and deliver their project. The product of their project also intends to give young people the prospect of contributing to local and global social, economic and environmental solutions.

2. Learning across and beyond disciplines

In each of the illustrations it was evident that knowledge, skills and understanding were developed beyond the context of disciplinary studies. Each partner had deeply considered why it was important to go beyond disciplinary boundaries and focus on cross cutting and interdisciplinary curricular themes. Examples of this include how learners:

- are engaging in rich learning and developing new knowledge in, for example, sustainability studies
- are developing their skills for learning, life and work and Meta-skills
- are increasing their entrepreneurial skills
- are demonstrating positive activism or participatory democracy in their communities
- are using creativity in their project and design solutions
- are consolidating and applying their literacy, numeracy, health and wellbeing and digital competency in rich learning contexts

3. Demonstrating Research Informed Pedagogy

When considering the teaching process to provide the desired learning outcomes, all the partners reflected upon teaching methodologies which are founded in impactful evidence for successful learner outcomes across the range of the four capacities. Examples include how The Wood Foundation's PBL 101 training is delivered by Alignment Nashville which is heavily inspired by PBLWorks programme of learning, how Daydream Believers use the well tested model for creative design thinking and how FIDA's approach to challenge-based learning draws purposefully on the NuVu Innovation School's design studio model.

The pedagogy considerations across the illustrations reflect the sliding scale across the following continua:

Planning:	Intentional	←————→	Responsive
Roles and Relationship:	Teacher led	←————→	Learner led
Outcome:	Knowledge	←————→	Skills
Outcome:	Concrete	←————→	Abstract
Outcome:	Convergent	←————→	Divergent
Assessment:	Product	←————→	Process

4. Realising Outcomes Aligned to Multiple Policy Intentions

As partners shared the purpose of their programme it was evident that the intention was to facilitate learning experiences which went beyond the principles and practice outlined for curriculum areas and subjects to include a wide range of Scottish policy and guidance. The illustrations exemplified how these approaches met some, or all, of the following policy intentions to a varying extent:

[Developing Young Workforce \(DYW\) Scottish Government's Youth Employment Strategy](#)⁹

[Learning for Sustainability: Action Plan 2023-2030](#)¹⁰

[STEM Education and Training Strategy: Refresh 2022](#)¹¹

[Women in Entrepreneurship: Pathways: A New Approach to Women in Entrepreneurship](#)¹²

[Creative Scotland and Education Scotland: Action Plan 2023: A Collaboration for Creativity](#)¹³

[Children's Rights and the UNCRC in Scotland: An Introduction](#)¹⁴

[Social Justice: Recalibrating Equity and Social Justice in Scottish Education](#)¹⁵

There is further evidence that all the interdisciplinary project learning programmes afforded opportunity for Scotland's Curriculum to better meet the recommendations of:

[Scotland's Curriculum for Excellence: Into the Future \(2021\)](#)⁶

[Putting Learners at the Centre: Towards a Future Vision for Scottish Education \(2022\)](#)⁷

[All Learners in Scotland Matter: Our National Discussion on Education \(2023\)](#)⁸

[It's Our Future: Report of the Independent Review of Qualifications and Assessment \(2023\)](#)³

[Fit for the Future: developing a post-school learning system to fuel economic transformation \(2023\)](#)¹⁶

5. Providing Professional Learning for Educators

A vital factor in the success of these examples is that professional learning and support are crafted in collaboration with teachers and education practitioners. The scaffolded support for educators meets them where they are in their practice and is readily available before and during the learning and teaching experience. The professional support can take the form of in-person professional engagement sessions to access to proven resources and materials to support the process. It has also been key that professional support goes beyond the formal offer of the delivering body into networks of teachers and educators who are planning, teaching and assessing these programmes. The more developed these networks of professional practice become the greater the impetus and impact of shared learning will become.

Where curriculum leaders have engaged in professional support, there has been a strong focus on leadership of change. This has allowed more efficient and effective implementation as leaders have learned from those who have gone before, both in and beyond education. The support for leaders has ensured a safe opportunity to try new learning approaches and experiences at small scale, before further iterations are developed in response to feedback from teachers, practitioners and learners. This iterative approach has allowed place based adaptations to be made so the programme may look and feel different depending upon the school, but the outcomes for learners remain standardised and consistent in level. This has allowed leaders to take a well paced and progressive approach to implementation at a larger scale.

6. Strengthening Partnerships

One of the factors which each of the providers have highlighted as key to the success of their programme is the significant impact of partners and partnerships. This includes CLD, Youth Workers, Business Community Support Officers, DYW Leads, local and global employers, sector and industry experts (including Skills Development Scotland), accrediting bodies, training providers, Further and Higher Education and parents as partners.

The partners support practitioners and learners to develop learning experiences and outcomes which are well informed and immersive in relevant and current real-life problems and solutions. These partnerships give practitioners greater confidence in planning high-quality interdisciplinary project learning experiences, which goes beyond the boundary of their disciplinary specialism, and which better meets the knowledge and skills demands of the world now and in the future. Learners, in turn, can use and develop their knowledge and skills in real-life and real-time contexts. They have greater agency in their learning to align to their aspirations, interests and talents and are better prepared to succeed in their school leaving destination and the world they will occupy as adults.

Exemplification from Partners

1. [Daydream Believers](#)¹⁷ : Creative Thinking Qualification (Accredited @ SCQF Level 5 & 6)

Who? Daydream Believers are a group of passionate, award-winning educators, employers and students who came together to put creativity at the heart of education. The strong belief that innovation and curiosity are key to unlocking the potential of the future workforce has been core to designing both the learning experience for young people, but also for the educators who are working alongside them.

Why? The programme aims to reinvigorate the joy of learning through user-centric projects that are based from real world provocations. Industry partners have been key to designing and developing the programme and schools engage with employers to support the process. Learners progress through the design process developing knowledge and transversal skills which are interconnected and interdisciplinary in nature.

What? The programme follows the creative design thinking process and is based on the guiding principles of future-proofed learning, real world context and design to be used. Throughout the learning programme the following 5 key outcomes are developed: Research, Conceptualise, Fail and Fix, Communicate and Evaluate.

The programme has a robust continuous assessment process which is moderated and verified to ensure validity and reliability of standards.

How? In order to support educators with this qualification, Daydream Believers have created high quality resources with teachers and for education practitioners. The professional support scaffolds the learning and teaching process and develops the creative design thinking process of the professionals.

So what ? The qualification articulates with the Broad General Education Daydream Believers programmes Forestopia and [Solar Punk Island](#)¹⁷. The articulation to school leaver destination has also been considered in the design of the qualification.

“When we’re looking at applicant portfolios for the BDes (Hons) Graphic Design at Edinburgh Napier University the most important thing we are looking for is evidence of creative thinking. That’s why we believe that the Level 6 Daydream Believers Creative Thinking qualification is quite possibly the best thing an applicant can do to help them strengthen their application for our programme. And this is why we’ve listed it as one of the qualifications we accept as part of our entry requirements. We’ve been really excited to see some of the work coming out of schools who have been engaging with the Creative Thinking courses so far, and we’re looking forward to seeing more of this kind of bold brave creative work start appearing in our applicants’ portfolios.”

Peter Buwert, Head of Graphics at Edinburgh Napier University¹⁷

“Society is changing so quickly that the kinds of skills that are being developed in Daydream Believers are not going to be on the margins of what learners need in future, they will be at its heart.”

Professor Louise Hayward, University of Glasgow¹⁷

2. The Wood Foundation¹⁸ : **Excelerate Investment (Broad General Education)**

Who ? Excelerate is an investment with ambition for system level change in education. The Wood Foundation is working with 17 schools in the North-East focussing on the transformation of culture, collaboration, and pedagogy through professional learning and network opportunities which inspire new and innovative approaches.

Why ? The ultimate goal of the investment is engaged, informed, motivated, and empowered young people. With a focus on skills and understanding their application in the real world, young people will benefit from additional exposure and opportunities to inform their school choices and better prepare them to be active, contributing citizens.

What ? The Wood Foundation invests in significant professional learning opportunities and support models in project-based learning and oracy, working collaboratively with national and international partners, as well as facilitating a North-East network. Collaboration is a key tenet of the investment, and education practitioners are empowered to work together to devise innovative cross-curricular solutions.

Schools are supported to engage their communities to co-create meaningful learning experiences for young people, ensuring that curriculum is aligned with real-world need and application. Business and Community Support Officers are in post at several schools to facilitate the development of relationships and the embedding of these approaches.

Through innovative learning and teaching approaches and community-connected learning, all students will benefit from a school career that prepares them for their chosen education or career pathway.

How ? Excelerate is a community-connected learning approach, which develops learning and teaching methods such as oracy and project-based learning. The Wood Foundation is committed to evidencing the sustainable impact of this approach to realise the potential within curricular frameworks, ensuring young people’s education experiences are preparing them to thrive in life beyond school. Excelerate aligns with The Wood Foundation’s Design Principles.

So What? A recent case study by The Edge Foundation has outlined some key findings regarding the impact of the Excelerate Programme. The main themes from the paper are as follows:

“Theme 1: The Excelerate Investment implementation at each school was an ‘evolutionary rather than revolutionary’ process

Theme 2: The Business Community Support Officer (BCSO) plays a key role in supporting teachers

Theme 3: Project-based learning provides active engagement and learning across staff and pupils

Theme 4: Developing pupils' Oracy skills creates opportunities for pupils to take ownership of their learning

Theme 5: The Excelerate Investment helps schools bring learning closer to the real world."

The Edge Foundation, Towards an improved student experience: Excelerate schools in Scotland (2023)

3. FIDA : Futures Institute at Dollar Academy¹⁹ (BGE/Senior Phase in process of accreditation)

Who? The Futures Institute at Dollar Academy (FIDA) was launched in May 2021 with a vision to offer a compelling alternative to traditional classroom practices around learning, teaching and assessment, to ensure equitable access to high quality learning experiences and to facilitate learning within the context of sustainability and the sustainable development goals (SDGs)

Why? FIDA's purpose is to equip young people with an understanding of global problems of sustainability, and to empower them with the knowledge and skills to design and develop the solutions of the future. This requires the learning experience to go beyond acquiring knowledge and replicating it in exams. FIDA aims to enable learners to apply their knowledge purposefully, with an intention of developing real-world solutions to benefit the collective future.

What? FIDA offers learners and teachers across Scotland free access to an evolving set of 'Global Challenges': interdisciplinary projects that involve designing a solution to a real-world problem rooted in one of the SDGs. Each project is co-designed with collaborators from industry and/ or universities, giving young people the opportunity to interact with experts who are driving change. To design their solution, learners must build knowledge, think creatively, solve problems, evaluate and adapt their ideas in an iterative process rooted in the principles of design thinking.

How? High-quality learning and teaching resources for all FIDA projects are freely accessible to learners and teachers across the country via the online platform at www.fida.world. Projects are also offered in-person on the Dollar campus as immersive experiences where young people from different schools come together for up to a week and work with industry/ university experts. FIDA is currently in the accreditation process for a new SCQF Level 6 Sustainability Diploma built upon its established project-based model. Opportunities to engage in events and competitions with a range of local and global partners is also a key part of the FIDA offering.

So What? The FIDA programme delivers impactful and relevant real-world related learning in context for young people across Scotland. Research for an MRes thesis by a postgraduate

researcher at the University of Glasgow evaluated the impact of participation in FIDA projects and found that 92% of participants felt it would help them in their future. The new Sustainability Diploma will build upon this by offering an SCQF Level 6 qualification. Work is also in progress with the University of Stirling on a direct accreditation pathway.

“Working on the FIDA design challenge provided a fascinating real-life context to explore creativity and design, with the aim of helping solve a hugely important environmental issue. It also exposed me to the type of design brief challenge I would later go on to regularly experience as a Fashion and Textile undergraduate. Therefore, I will always be grateful to FIDA for allowing me to take part in the challenge and the many opportunities it presented.”

S6 Pupil, St Modan’s High School, Stirling

“To be given access to this resource has been an absolute godsend and the support FIDA has given me has been immeasurable. More importantly, the resource being made available to my students has boosted their confidence and ability immensely.”

David Thomson, PT of Modern Studies, Morgan Academy, Dundee

4. **New College Lanarkshire/Grove Academy: Engineering Design Challenge (Accredited @ SCQF level 6)**

Who? Grove Academy, Dundee and New College Lanarkshire have partnered to accredit an interdisciplinary project learning challenge which focusses on designing, engineering and building a product. Grove Academy began the journey to developing this qualification through initial engagement in the [Maritime Advanced Technical Education Remote Operated Vehicle](#)²⁰ competition

Why? Through consultation with universities, industry experts and employers the school recognised the need to enable young people to engage in, and demonstrate deep learning and apply this to industry relevant contexts. The design of this qualification recognises engineering as one of the most rapidly evolving sectors globally, where traditional skills are enhanced by new technologies. The qualification will develop a learner pathway to produce a new generation of highly skilled engineers to work in a wide variety of engineering disciplines. These engineers will have skills, digital capability and competence in maintaining, manufacturing and installing traditional and modern engineering systems and projects.

What? The general aim of this qualification is to give learners the opportunity to develop and demonstrate their skills and knowledge in Engineering at SCQF level 6. The qualification takes a project-based learning approach to allow the learners to analyse, evaluate and solve engineering problems. The structure of the qualification will provide natural occurrences to demonstrate the application of a range of both technical skills and Metaskills as the learner progresses through to the completion of the project. The specific aims will provide curricula which is complementary to the existing qualifications in Scotland. The qualification also

aims to give the learner a direct link to support and guidance from industry while completing the project activity.

How? This qualification is timetabled as a column option and earns 16 [SCQF credits](#)²¹. While the exact time allocated is at the discretion of the centre, the notional 160 hours to reflect learning, teaching, independent study and assessment. The focus of the qualification is to undertake an engineering project that requires planning and research, development, manufacture and assembly, as well as evaluation activities. Engagement with an industry mentor is a key component of the project activity, as is working as part of a team. Learners will develop practical skills within a simulated environment. Knowledge and skills are developed via a range of learning and teaching approaches supported by ICT this will include: enquiry based and student-centred learning. Learning should be supported via the use of key texts, physical resources, handouts and VLE.

So what? Teachers have reported learners are more engaged in their learning which recognises both the importance of knowledge and technical skills, but also the collaborative skills required in teamwork. The employer partners have been so impressed they have guaranteed interviews for graduates with this qualification and committed to funding the programme. Learners who have engaged in the project have **all** gone on to positive destinations, the majority into engineering pathways. Some learners have also reported unconditional entry to University due to the strength of evidence in their personal statement, which they attribute to their experience in the project.

5. [The Wood Foundation](#)²² : Youth Philanthropy Initiative (YPI) (BGE/Senior Phase)

Who? The Wood Foundation is a Scottish-based charity, headquartered in Aberdeen, with a global outlook investing in economic, community and enterprise activities. The Youth Philanthropy Initiative (YPI) is a skills-based active citizenship programme that raises awareness in young people about philanthropy and their local community. YPI is a programme that is managed and principally funded by The Wood Foundation. Each participating school, each year is responsible for directing a £3000 YPI grant to a local charity.

Why? YPI has active citizenship as one of its core drivers. The programme affords learners the opportunity to develop skills and confidence through a contextualised learning experience. The programme raises awareness of social issues and local charities, and is a vital means of enabling devolved, locally driven grant making.

What? Through interdisciplinary projects with a focus on teamwork, research, and competition, young people advocate for social issues in their communities in a bid to secure their school's £3000 grant. Charity selection and presentation preparation are student-led, giving young people the opportunity to develop key skills, explore strengths, deploy creative approaches, and grow as active, contributing citizens.

How? YPI is a funded and fully-resourced programme which works closely with partners in education to realise the depth and breadth of opportunities from the experience. YPI

provides a rich learning opportunity for young people to better understand the social issues in their communities. YPI raises awareness and funds for local social service charities, enhances school and community connections, and gives young people a meaningful platform from which to advocate. This is supported through a wide range of support interventions, including tailored development and embedding sessions with regional staff, webinars and a suite of targeted, impactful resources

So What? The YPI End of Year Impact Report (2023) outlines some key features of educational impact:

- “Young people reported the top 3 skills they had developed were teambuilding, research and presenting.
- Teachers believe, and young people have reported, that young people better understand and care more about the social issues in their community.
- Teachers feel more confident in facilitating student led learning experiences and stated that YPI is now a core component of their curriculum. The result of which is more empathetic active citizens within their school and its community”.

“YPI creates a nexus between school and community. It makes responsible citizens of our bairns, making them aware of global and local issues and understanding how these their personal responsibility.

YPI gives the opportunity to put theory into practice, and very quickly see the connection between learning and action. It is also addressing many of the experiences and outcomes aligned with the four contexts and capacities of Curriculum for Excellence.”

Theophilus Ogbhemhe, Kirkwall Grammar School

6. [Skills Development Scotland \(SDS\) : Healthcare Pathway Pilot in collaboration with NHS²³\(Senior Phase- Accredited @ SCQF level 5\)](#)

Who? SDS has been working in collaboration with NHS Scotland NES Youth Academy and identified NHS Health boards, as the largest healthcare sector employer in Scotland. Additional partners, including Education Scotland and SQA have contributed to support the development of pathways for senior phase pupils into entry level employment with NHS Scotland

Why? The programme has been developed in response to critical skills shortages in healthcare. It is designed as a flexible and resilient programme of learning that can adapt to times when workplaces may be less accessible to school age learners, due to high volume of service users or restrictions on face to face contact in the physical workplace. The programme recognises the value of meta-skills in current and future employees and the benefits for young people in being able to develop broad occupational awareness of the pathways and opportunities available within the healthcare sector. Learners will understand

their strengths, values and motivations and be supported to make informed choices about the next stage in their career journey.

What? The Healthcare Pathway Pilot qualification will develop the knowledge and skills of young people to allow them to progress into roles such as Healthcare Support Worker, and to better understand routes and pathways into the wider health and social care workforce. Local NHS Health boards contribute to project learning activities through a range of face-to-face and online learning activities, learners will develop their transferable meta-skills, such as communication, integrity, curiosity and problem solving, into qualities that are beneficial and directly applicable to a career in health and social care. Learners have choices about the focus of the projects and can personalise the details to meet their own interests. The qualification includes 3 challenge projects:

- Spaces and Places: Exploring the relationship between the physical environment (e.g. hospital or care home) and how people are cared for.
- Community and Wellbeing: Learning about how health and care sector supports the wider community.
- Creativity: Look at the creative solutions to a health/care challenge and understand the importance of creativity skills in the workforce.

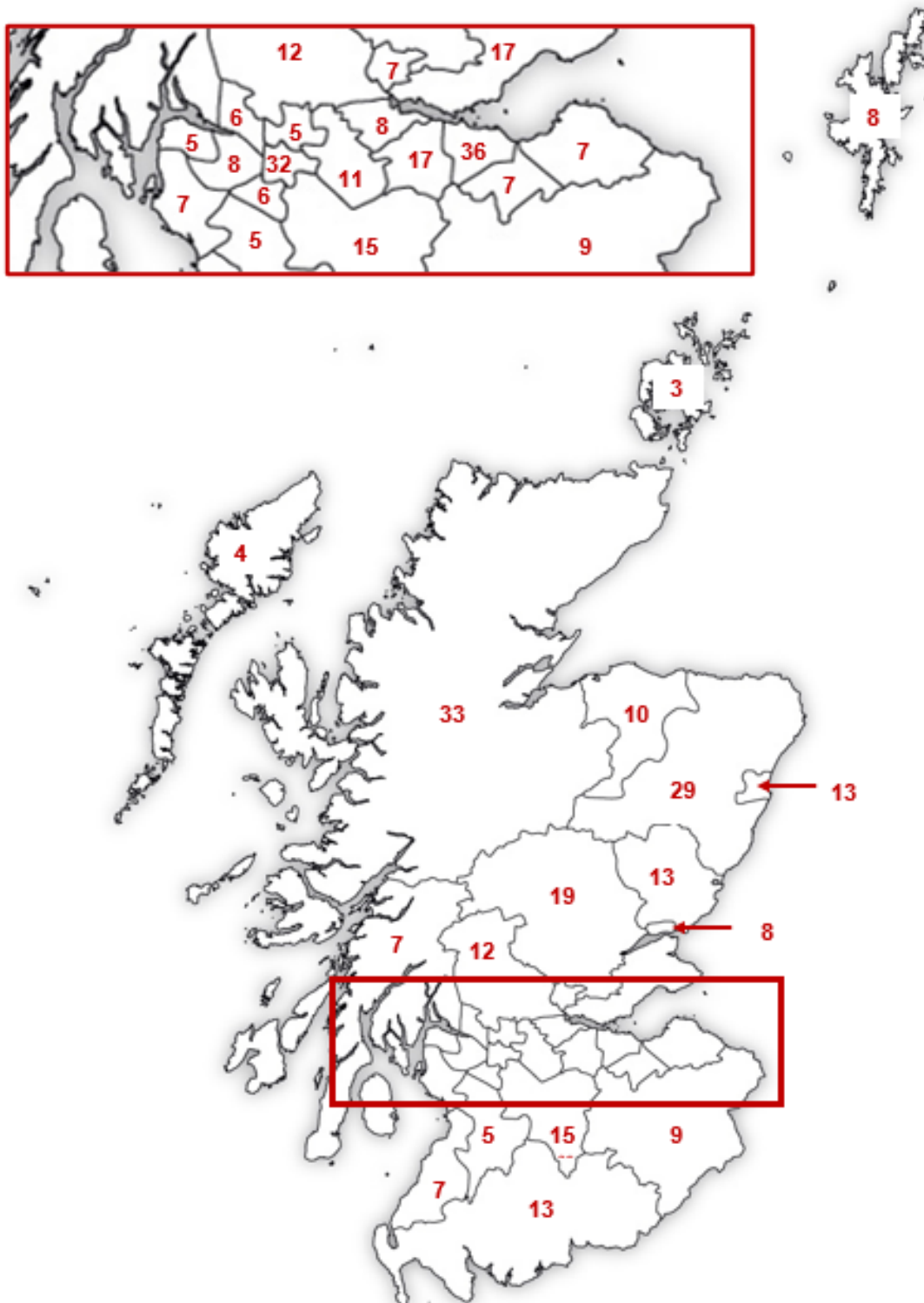
How? NHS Scotland Youth Academy in collaboration with Skills Development Scotland, led on promotion and recruitment activities through the local NHS Youth Employability Huddle groups, supported by local authorities, schools and delivery partners. Key features include: development of a suite of materials to support senior phase curriculum offer; curriculum content based on playlist approach including challenge-based project learning and teaching methodology; involvement of employers in delivery; micro-credentialled units of learning; integration of meta-skills; exploration of job interview guarantee commitments and smooth transition from school to work for learners.

So what? Approximately 50 young people are participating in the programme with four NHS Health boards - Golden Jubilee, Grampian, Highland and Tayside - 4 local colleges are delivering the learning, West College Scotland, NESCOL, UHI and Dundee and Angus. The pilot commenced delivery in August 2023 and a full evaluation will be carried out during 2023/4. There are strong national and local partnerships between SDS, NHS NES, NHS Health boards, colleges, local authorities and schools, with a robust series of national and local meeting in place, providing updates on delivery progress and learner response to the Pathway.

Appendix 1

All 32 of Scotland's Local Authority areas have secondary schools (state and private) with educators who currently offer at least one of the illustrated interdisciplinary project learning programmes. This amounts to 319 unique Secondary Schools in Scotland.

Please note: where a school offers more than one programme this number is represented cumulatively on the map below.



Appendix 2

PBLWorks define the following [7 key elements of Project Based Learning](#)².

The pedagogy workstream will look more closely at how these key elements can support educators with interdisciplinary learning across the learners journey.

1. The challenging problem or question – here the project is framed by a meaningful problem to be solved or questioned to be answered.
2. Sustained Inquiry – the students now engage in a rigorous extended piece of research where they pose questions, find resources and apply information.
3. Authenticity – the project is related to the real-world context. The tools and tasks or the impact of the project should directly speak to the student’s concerns, interests and lives.
4. Student Voice & Choice - Students make some decisions about the project, including how they work and what they create, and express their own ideas in their own voice.
5. Reflection - Students and teachers reflect on the learning, the effectiveness of their inquiry and project activities, the quality of student work, and obstacles that arise and strategies for overcoming them.
6. Critique & Revision - Students give, receive, and apply feedback to improve their process and products.
7. Public Product - Students make their project work public by sharing it with and explaining or presenting it to people beyond the classroom.

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