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Educator Handbook for Designing Inclusive Entrepreneurship Courses in Higher Education

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Educator handbook for designing inclusive entrepreneurship courses in higher education

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1. Introduction.

1.1 What is this handbook about?

This handbook is developed for educators in entrepreneurship within universities and other higher education institutions. The aim of the handbook is to help entrepreneurship educators make access and participation easier for underrepresented student groups within their courses. It is also useful for academics who want to develop entrepreneurship courses for specific minority groups. The notion of who underrepresented entrepreneurship students are may differ across institutions and across countries. At a global level, the OECD identifies six important cohorts: women, youth, seniors, the unemployed, immigrants, and people with disabilities (OECD, 2021).

The handbook will help educators in the design and delivery of entrepreneurship modules and courses. It covers two main approaches.

Firstly, a universal design for learning approach (UDL) that draws on the underlying principles of designing for everyone. This is an approach to learning, teaching, and

assessment design that is proactive in addressing the varied identities, competencies, learning strengths, and needs of every learner in a learning environment.

Secondly, a focused approach for educators who want to target entrepreneurship programmes and support specific underrepresented groups, such as to educate more women on entrepreneurship, or dedicated courses on self-employment for people with a disability.

"The role of universities is considered very important in triggering the learning process and transferring know-how to individuals, which in turn can promote the entrepreneurial idea and activities" (Audretsch, 2017)

1.2 What do we mean by inclusive entrepreneurship education?

Higher education institutions (HEIs) mainly develop entrepreneurial curricula across the earlier stages in which entrepreneurship is stimulated. This involves the inspiration, education and incubation stages. Programmes and courses in entrepreneurship usually exist across faculties and schools at undergraduate and postgraduate level. Entrepreneurship courses and initiatives may also be created and delivered by knowledge transfer and incubation centres of HEIs.

Although examples are emerging, it is still unusual for HEIs to develop entrepreneurship curricula that explicitly considers underrepresented cohorts. Most courses in HEIs across Europe are open to all students, but educators give little consideration to what is needed to facilitate those students that may need extra support to access and participate. There is an amazing opportunity for European HEIs to answer both national and European calls to educate and support the Missing Entrepreneurs.

We define inclusive entrepreneurship in this handbook from the educator perspective of designing and delivering inclusive entrepreneurial education. We draw on the definition of Smith, Jones, Scott and Stadler (2017: 330) by suggesting that inclusive and accessible entrepreneurship education within a HEI context, means:

"ensuring that all students from any socio-economic and cultural demographic, geographical location, gender, disability, ethnicity and discipline have equal opportunity to experience entrepreneurship education and access to entrepreneurial learning environments. Inclusive and accessible education requires that all students are involved, that all students have equal access to education, are free to be involved and that there are no financial barriers."

Inclusive entrepreneurship education requires the identification and removal of pedagogical barriers that prevent access and participation by underrepresented groups such as technology, cost, time, finance, culture or language. The barriers may be easy fixes such as consideration of colour and font sizes in documents, or use of inclusive language. They may also require a lot more preparation and thought such as locating financial supports for access, foreign language supports or appropriate mentor support networks.

Educator voice: Professor Thomas Cooney, Professor in Entrepreneurship, Technological University Dublin - “Responses such as ‘we treat everyone the same’ and ‘our door is open to everyone’ are commonly used to defend existing practices when the reality is that treating everyone the same is not good practice and not everybody knows that such doors exist”.

1.3 Entrepreneurship as an inclusive concept.

It is important upfront to think about what we mean by entrepreneurship when we want to make it inclusive. The traditional focus of entrepreneurship education was on new venture creation. In the modern environment, such a narrow focus may exclude potential students interested in developing social projects or interested in learning behaviours that give them an entrepreneurial spirit in the face of challenges and opportunities.

Emerging from the debate between this broad or narrow focus of entrepreneurship education, a *progression model* approach is gaining traction that envisages student learning in phases. In the progression model approach the foundation element draws on the broad definition of entrepreneurship. Initiatives are focused on supporting the learning of enterprising behaviour. These initiatives are underpinned by active and experiential pedagogies. Anticipated outcomes include enhanced creativity, engagement and self-efficacy. Subsequent phases of the progression model adopt the narrower definition of entrepreneurship focused on the development of entrepreneurial behaviour. Such approaches may be more skills based and underpinning entrepreneurship theory is more explicit. The progression model is an inclusive approach to entrepreneurial education recognising entrepreneurship as an activity of relevance for everybody. You will find some additional readings about the progression model approach in further reading under Section 1.6 of this Handbook.

Aligning with this reasoning, the European Commission recognises that "we live in a rapidly changing society where it is essential that everyone has the capacity to act upon opportunities and ideas, to work with others, to manage dynamic careers and shape the future for the common good". In response, they have developed EntreComp: the European Entrepreneurship Competence Framework as a reference framework that emphasises entrepreneurial mindsets (See Section 1.6). This entrepreneurial mindset defines more broadly the purpose of entrepreneurship education in HEIs.

1.4 Where to start?

It could be assumed that most academics developing entrepreneurship courses want to be inclusive in terms of making everyone feel welcome. They usually recognise that some students have difficulty participating on courses. This might be because of language barriers, because a student is deaf, or possibly because a student has a young family and struggles with childcare arrangements. These challenges often emerge at the beginning of a semester and become more obvious as a course progresses. They can often result in drop out by the student altogether. Design is the critical stage for inclusive education – forecasting to the extent possible what individual students need, but also building flexibility into programme design that provides options for students to help them participate.

Entrepreneurship education teaches about innovation, risk taking and learning from failure. Widening participation in entrepreneurship education requires educators to lead by example – being innovative, taking risks and knowing that not every design element will be successful. Designing inclusive entrepreneurship modules and courses means establishing the learning outcomes and building flexibility into the journey for how every student can get there.

Don't know where to start? Let's begin therefore by sharing a few pointers of where you can begin developing more inclusive entrepreneurship courses and modules.

1.4.1 Talk to colleagues and find out what support is available

A valuable way to begin is to explore the supports available and talk to your colleagues. Start the process by reflecting on your own courses and programmes. Do a review of the tools, frameworks and supports that are available to you within your own institution. You can also explore a range of support material listed in Section 1.6 of this handbook.

Talk to colleagues engaged in the delivery of entrepreneurship courses and programmes, the disability/inclusion/access office, your technology transfer office, and incubation centres. Your institution may also have groups dedicated to supporting access and widening participation such as communities of practice, committees, building facilities staff, or librarians. These initial discussions can act as a platform for future collaboration, starting a dialogue that helps to ensure ongoing success.

1.4.2 Start small and with a vision

Whether approaching the design and delivery of inclusive entrepreneurship education from the perspective of general courses and modules, or focussing on course development for specific cohorts, it is easy to become overwhelmed with information and expectations early on. Do not be discouraged by this. There are many contextual aspects to think about including national regulations, policy and the institutional environment, and these can change over time. The important thing is that you have the vision, and you are working towards this.

1.4.3 Integrate legal requirements and policy guidelines

Familiarise yourself with legal requirements and government policies on inclusive education and entrepreneurship as one of your first steps. Check in with your accessibility / disability / EDI (equality, diversity, and inclusion) colleagues and consider what adjustments need to be made to your course design to meet basic regulatory requirements concerning equity, diversity and inclusion. Even with knowing that you are keeping up to date with and meeting these requirements you are making good progress.

1.4.4 Set up accessible document and web templates

Make formatting changes to documents to make them more accessible and use these as a standard across all teaching. Use validated checklists for formatting documents, presentations, web content, etc. Some links are provided in Section 1.6 of this handbook. Using gender neutral and gender inclusive pronouns and language that affirms diversity and avoids alienating students. One example in the English language would be using ‘he or she’ instead of just ‘he’ or ‘him’. The European Commission provides guidance documents on using gender neutral language and we include one link under Section 1.6 to one source.

1.4.5 Find out about your student needs in advance

Whether adopting a UDL (Universal Design for Learning) approach for general programmes or designing specialised courses for minority groups, you will need to take the time to know your students and their particular needs before the course begins. Your course design will need inbuilt flexibility with scope to evolve. Every

student is different. You can prepare in advance for a lot of this variation in needs. Needs will become more evident as a course progress, but with inbuilt flexibility and options you can make some adjustments during delivery.

Student voices on teaching and learning:

Link here to listen to how students themselves discuss their diversity of learning preferences.

1.4.6 Engage in peer learning opportunities

Engage in learning opportunities with peers as much as your time allows. Look out for seminars and other learning opportunities on improving access and widening participation both inside and outside of your institution. This is a good way to hear about good practice and successes.

Case examples of educator initiatives incorporating UDL into teaching practice:

This link shares some examples of how educators have incorporated UDL into their teaching practice as presented at the AHEAD Conference 2020.

1.4.7 Reflect and (re)build

Draw on and learn from your experience. Once you have your groundwork done in terms of meeting regulatory basics, document, and digital formats, and knowing your student needs in advance, you are already working towards your vision. You will always find that some initiatives work well while others are not as successful. Entrepreneurship education teaches about facing failure and learning from it. Reflect and learn.

1.4.8 Don't compromise on quality

Do not compromise on learning outcomes. Design imaginatively with inbuilt flexibility for student engagement and assessment. Innovation and creativity in design is required.

1.5 About these guidelines – a guide for educators.

These guidelines will help educators in universities and other HEIs to design and deliver more inclusive entrepreneurship courses and modules. Two main approaches are emphasised:

a) Designing entrepreneurship education for everyone. This section advocates for a UDL approach. It identifies some of the barriers with the standard pedagogical models used in entrepreneurship education. It uses case studies to show good practice. The section also offers tricks and tips that educators need to know for designing more inclusive entrepreneurship modules and courses.

b) Designing entrepreneurship courses for Missing Entrepreneurs. This section focuses on courses that answer the European and national policy agenda to increase education opportunities for groups of underrepresented people known as the Missing Entrepreneurs. The section focuses mainly on tips and tricks shared through experiences of academics working with these groups.

1.6 Some support tools and further information.

You will find some useful links here both to information on inclusive entrepreneurship and information on UDL and inclusive education design. This list is by no means exhaustive. There will be many other European and local supports across Europe that will develop your knowledge and learning.

<u>Links to further information on inclusive entrepreneurship:</u>

1. Cooney, Thomas (2021) The Palgrave Handbook of Minority Entrepreneurship. Palgrave, Cham doi.org/10.1007/978-3-030-66603-3.
2. EntreComp framework: https://ec.europa.eu/social/main.jsp?catId=1317&langId=en.

3. Krüger D and David A (2020). Entrepreneurial Education for Persons with Disabilities—A Social Innovation Approach for Inclusive Ecosystems. Front. Educ. 5:3. doi: 10.3389/feduc.2020.00003.
4. Lackéus, M. (2015). Entrepreneurship in education: What, why, when, how. Entrepreneurship 360 Background Paper. Paris: Local Economic and Employment Development Programme, OECD Publishing.
5. Nabi, Ghulam & Liñán, Francisco & Alain, Fayolle & Krueger, Norris & Walmsley, Andreas. (2017). The Impact of Entrepreneurship Education in Higher Education: A Systematic Review and Research Agenda. Academy of Management Learning & Education. 16. 277-299. 10.5465/amle.2015.0026.
6. OECD 2020 Country Assessment Notes on inclusive entrepreneurship: https://www.oecd.org/cfe/smes/inclusive-entrepreneurship-policies-country-assessment-notes.htm.
7. OECD Inclusive Entrepreneurship Website: https://www.oecd.org/cfe/smes/inclusive-entrepreneurship/.
8. OECD, (2021) The Missing Entrepreneurs. Available at: https://www.oecd.org/publications/the-missing-entrepreneurs-43c2f41c-en.htm.
9. O'Brien, E., Cooney, T. M., & Blenker, P. (2019). Expanding university entrepreneurial ecosystems to under-represented communities. Journal of Entrepreneurship and Public Policy. Vol. 8 No. 3, pp. 384-407.

Links to further information on universal and inclusive education design:

1. CAST UDL Guidelines: https://www.cast.org/impact/universal-design-for-learning-udl.
2. Centre for Excellence in Universal Design: https://universaldesign.ie/about-us/.
3. European Commission (2018) Gender Neutral Language in the European Parliament: https://www.europarl.europa.eu/cmsdata/151780/GNL_Guidelines_EN.pdf
4. Inclusive Teaching Strategies: https://ahead.ie/inclusiveteaching.
5. Support Centre for Inclusive Education - UDL Guidelines: from policy to practice: https://www.siho.be/nl/publicaties/leidraad-universeel-ontwerp.

6. The Accessibility THRIVES at TU Dublin Framework and Toolkit: https://arrow.tudublin.ie/accessibilitythrives.pdf.
7. UDL explained: https://www.ahead.ie/udl
8. UDL Guidelines Checklist: https://wvde.state.wv.us/osp/UDL/7.%20UDL%20Guidelines%20Checklist.pdf.

2. Designing and delivering entrepreneurship education for everyone – a UDL approach.

Your approach to designing and delivering inclusive entrepreneurship courses may be to design (or re-design) your general programmes to make them more accessible and to ensure successful completion.

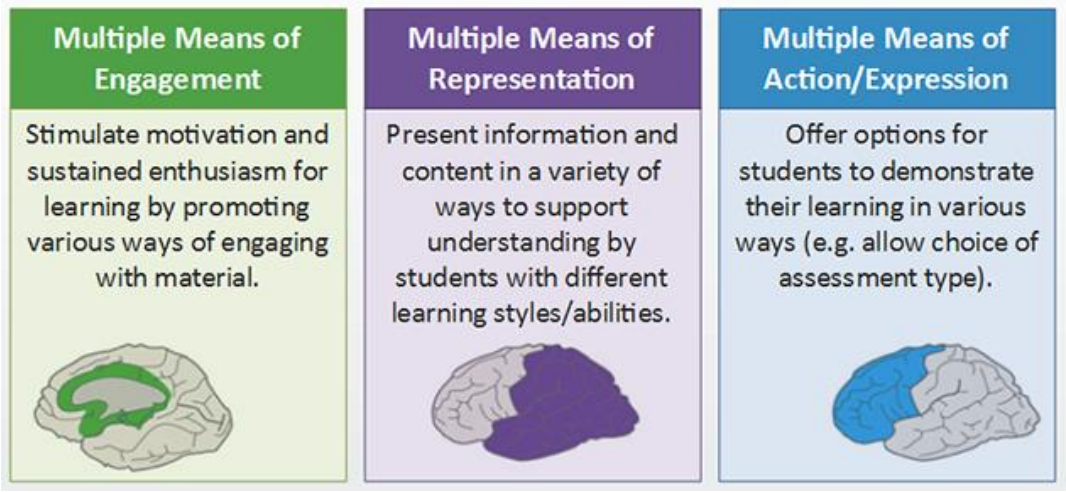
Professor Cheryl Burgstahler (Director of Accessible Technology at the University of Washington) states that in an inclusive environment everyone who meets requirements, with or without accommodations, is encouraged to participate, feels welcome and is fully engaged in accessible and inclusive environments and activities.

What this means in practice is a paradigm shift from reactive accommodations to proactive design of our educational products and environments. The shift means moving away from 'design for the average' to 'designing for everyone'.

In Section 1.6 we have provided several useful links to information sources that will help you to immerse yourself more fully into UDL and its underlying tenets. At the core of UDL are three principles that educators are required to provide (Figure 1):

1. multiple ways for students to engage in their learning (***principle one: Engagement***);
2. multiple means of representation to provide students with equitable access to the learning content (***principle two: Representation***); and
3. multiple ways for students to demonstrate and express their knowledge, understanding, and skills (***principle three: Action and Expression***).

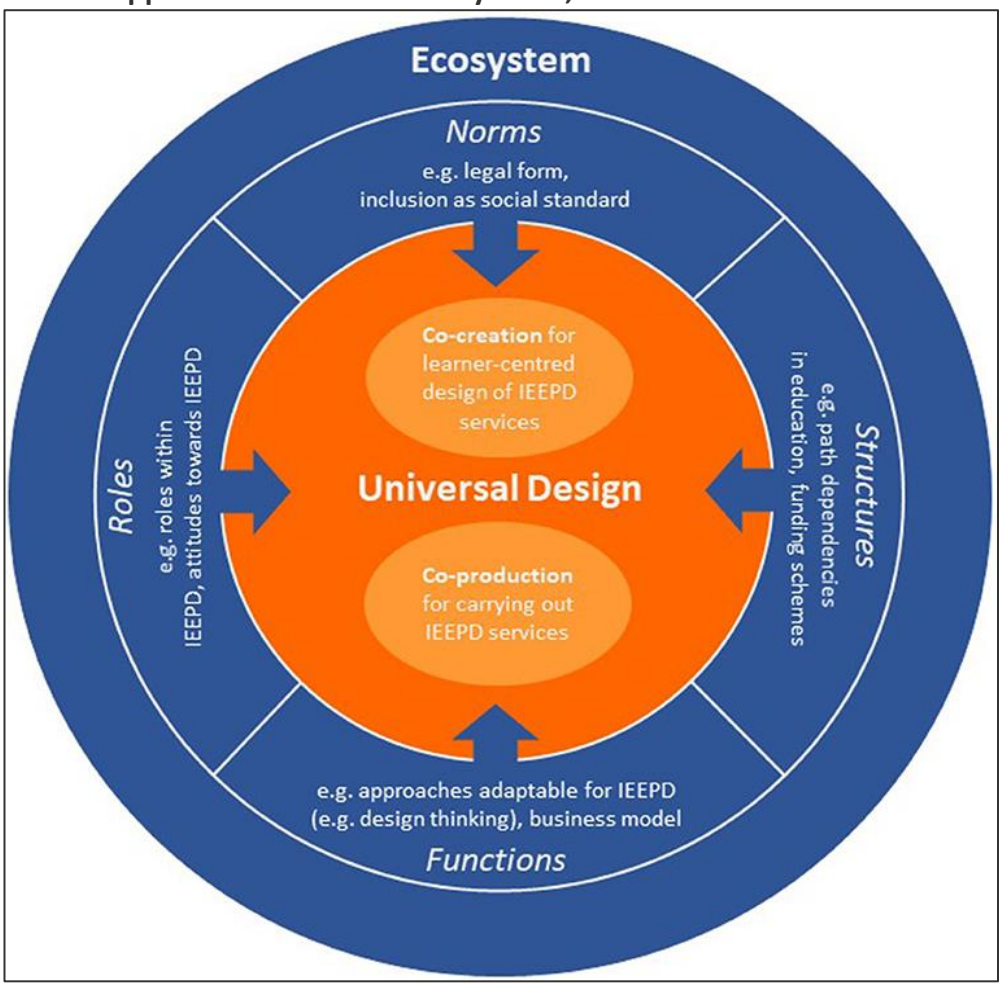
Figure 1: Three principles of universal design for learning



Source: AHEAD, 2017

Overall, UDL has the potential to promote the engagement and independence of students as it ensures a variety of pathways through choice and flexibility. A UDL approach can underpin inclusive design for your entrepreneurship modules and courses. Indeed, the social innovation approach for inclusive entrepreneurial ecosystems places universal design for everyone at the core (See Figure 2). This inclusive entrepreneurial education framework for persons with disabilities (IEEPD) suggests drawing on social innovation, co-creation and co-production as building blocks considered necessary for successful entrepreneurial education.

Figure 2: Entrepreneurial Education for Persons with Disabilities—A Social Innovation Approach for Inclusive Ecosystems, Education



Source: Krüger and David (2020) [See Section 1.6 of this handbook for full reference and further reading]

2.1 Some barriers for students with standard pedagogical models.

Categorising the many approaches to entrepreneurship education into three pedagogies of the supply side model; the demand side model; and the competence model (Nabi et al., 2017), some of the barriers and obstacles that students from minority groups may experience are suggested below. Of course, your own approach to course development may combine pedagogies. This hybrid approach could raise additional sets of issues that you will need to consider.

The Supply Model emphasises a behaviourist perspective focusing on reproduction methods. Methods include lectures, readings, watching and listening. Some

students may face challenges accessing such material or understanding the contexts of material. Some examples of questions you might consider when designing such courses would be:

a. In what formats are materials made available to students?
b. Is the material relevant from a cultural perspective?
c. When are lectures held? And is there opportunity to link into lectures at different times or link into recordings?
d. What options exist for assessing learning outcomes?

The Demand Model often adopts a subjectivist paradigm. It may involve gaining personalized meaning through participation in terms of exploration, discussion, and experimentation. This might include library use, simulations, or searches. Some examples of questions you might consider when designing such courses would be:

a. Could language be a barrier to learning?
b. What training will be provided to support every student's use of library or simulation technologies?
c. How can you instil confidence in each student?
d. How will you respond to formative assessment to address a range of issues arising during the module or course?

The Competence Model highlights an interactionist theoretical paradigm. Competence approaches may involve active problem solving in real life situations. The focus is on communication, discussion, and production methods. Examples may be debates, portfolios, seminars, essays. The role of the academic in this instance is as a strategic intervention to influence how students organize the resources at their disposal. Some questions to consider in this pedagogical approach might be:

a. What consideration will you give to group training and formulation for group assignments?

b. Students with low self-efficacy may need additional supports to avoid a negative experience. Can you draw in others to help with additional or special supports?
c. What consideration have you given to how well different students may be prepared for critical incidents if prior knowledge and social networks are underdeveloped?

2.2 Case examples in action.

Entrepreneurship education design at Glasgow Caledonian University:

Recognising the challenges that may confront underrepresented groups, Smith, Jones, Scott and Stadler (2017) from Glasgow Caledonian University (GCU) detail their endeavours to construct entrepreneurial learning environments inside educational boundaries by tackling complex issues of inclusion. Their approach combines policy, pedagogy and practice in a holistic way that meets the needs of the twenty-first century entrepreneurial society. Their approach was scaffolded within three overarching principles:

a. Creating learning environments and critical incidents to nurture contextual variation through activity by providing the learner with a social and peer-based 'architecture'.
b. Providing progressive and developmental learning by experimentation, reflection, and correction.
c. Transferable skills, sensitive to cross-disciplinary delivery, levels of self-efficacy, socio-cultural difference, and contextual variation.

In this case, having established the key principles, the architecture for learning was effectively in place. Crafting strategies for teaching, learning and assessment that adopted these key principles was the next step for inclusive and accessible entrepreneurship education.

In summarising GCU's experience, the authors highlight that the idea that academics are required to combine multiple policy positions, design principles and individual viewpoints is perhaps the reality of a complex landscape that all HEI's face. They summarise their main points of consideration into seven items: Cross

disciplinary delivery; Staffing and Facilitating; Technological Barriers; The trading experience; The Community Engagement; Group collaboration; Networking.

You can read more about this case at:

Smith, A., Jones, D. and Stadler, A. (2017) Designing and delivering inclusive and accessible entrepreneurship education. Entrepreneurship Education: New Perspectives on Entrepreneurship Education Contemporary Issues in Entrepreneurship Research, Volume 7, 329-352. doi:10.1108/S2040-724620170000007019.

Working towards inclusive design in entrepreneurship education at Polytechnic University of Cartagena (UPCT), Spain:

For more than twenty years, Professor Antonio-Juan Briones-Peñalver has been teaching university students about the importance of learning to be an entrepreneurial person and promoting the entrepreneurial spirit as an attitude towards work. At UPCT all degrees include designing and undertaking innovative projects as a transversal skill requirement. His mission is to give students the ability to propose and develop ideas and solutions that provide added value in processes, products and services. Antonio coordinates a work team bringing a teaching framework that promotes entrepreneurship and the training of students in professional skills. The framework includes the exploration of technological possibilities, the development of utility models and patents, as well as the creation of new commercial brands. The years of experience have allowed Antonio to ensure inclusive educational experiences for traditionally underrepresented cohorts. In summing up his years of experience he offers the following guidance.

Firstly, educators should use active learning methods that are collaborative. Encouraging group spirit among students is a necessity and his teamwork model is shown to improve participation among students. Collaborative active learning methods increases student motivation. In addition, Antonio proposes an incremental approach to student projects with a very open attitude towards innovation. This is inherently inclusive. It fosters the emergence of creative

leaders and assists with critical thinking. Case studies are often used in teaching. Finally, students are taught to learn from unsolved problems, to think towards the future and application of ideas in wider society.

2.3 Five tips about designing and delivering entrepreneurship education for everyone.

1. Adopting an entrepreneurial mindset is an excellent starting point for designing inclusive entrepreneurship programmes according to UDL principles. Educators will need all of the key competencies including vision, creativity, an ability to work with others, ability to take risk, self-awareness, and ability mobilise resources.

2. Students from underrepresented groups may have low self-efficacy and may not have the same prior knowledge or experiences to identify and develop ideas and opportunities. Be creative in terms of how you respond to this challenge. An example might be including options that facilitate multicultural experiences or that accommodate social enterprise opportunities.

3. Do not think about designing modules and courses for the average student – reflect on what is needed to design for every student.

4. The EntreComp framework will inform the learning outcomes and do not compromise on quality of learning outcomes. Build in options for how students can achieve these competencies. Consideration of more incremental approaches to ideas generation and development may be appropriate.

5. Effective collaboration both internally and externally is critical to generate resources and understanding. Develop your collaborations with national agencies and authorities, with staff and students, with peer networks, with student organisations and with NGOs that support inclusive entrepreneurship.

3. Designing and delivering entrepreneurship courses for the Missing Entrepreneurs.

The OECD recognises that gaps in entrepreneurship activity rates and business survival rates across the population are longstanding. Nationally many governments are making efforts to close those gaps through a wide range of tools, including education. The OECD recognises that women, young people and migrants face specific and often greater hurdles on the path to entrepreneurship, as do people with disabilities, seniors or the unemployed. These are categorised as the Missing Entrepreneurs (OECD, 2021). Progress in entrepreneurship needs to go hand in hand with social progress. The European Commission and national governments provide supports for structural reforms dedicated to the Missing Entrepreneurs.

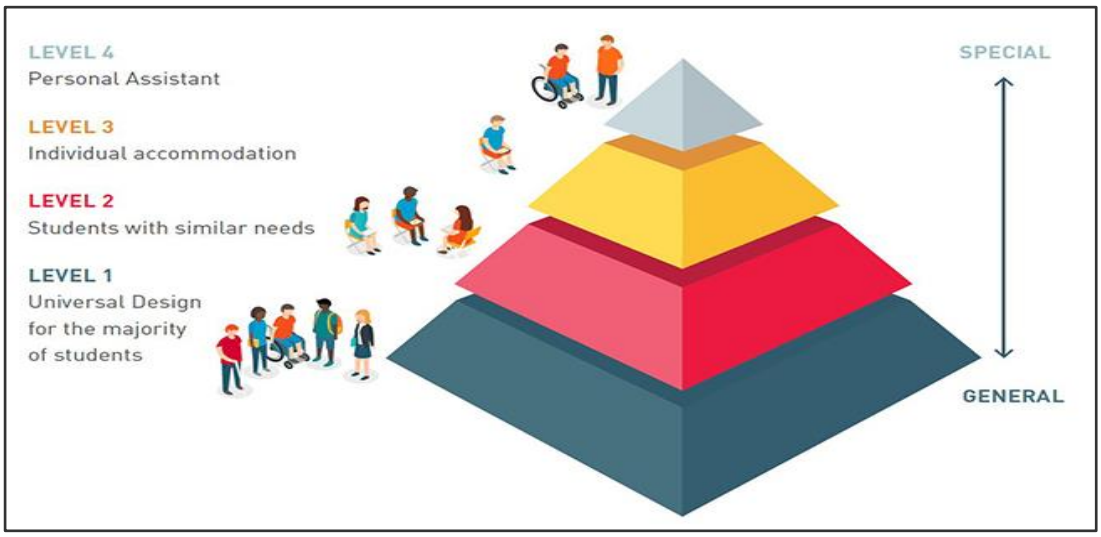
European universities and other HEIs play an important role in supporting their governments and the European Commission to close the gaps in entrepreneurship activity rates, helping to empower Missing Entrepreneurs to choose self-employment as an option.

Designing and delivering courses for specific groups still requires universal design thinking. Such groups will still need to access buildings, resources and facilities in a way that they feel welcome.

Differences within 'groups' of missing entrepreneurs exist. You cannot forget that students with a disability have equally diverse needs. Students with refugee status bring with them very different knowledge and experiences. However, when designing for particular groups, greater levels of 'reasonable adjustment' will combine with universal design (Figure 3). Reasonable adjustments interact with broad basic care of universal design where the trajectory becomes a *care continuum*.

A continuum of care is needed in the planning, design and delivery of your entrepreneurship courses and modules.

Figure 3: Continuum of supports from the classroom to the disability support services



Source: AHEAD, 2017

In Section 1.6 you can access useful links to material about UDL, Missing Entrepreneurs and country assessment notes on inclusive entrepreneurship. If you are working towards your national policy agenda to help close the gap on missing entrepreneurs through education, you are encouraged to delve further into these materials.

Although HEIs may be less involved in specialised entrepreneurship education for the unemployed, good examples across the other five groups exist. To start thinking about what reasonable adjustments may be needed for particular cohorts we share some ideas that are drawn from experience.

3.1 Designing and delivering entrepreneurship courses for women.

1. Designing and delivering courses on female or women entrepreneurship requires thought about different industry sectors that future entrepreneurs may find more appealing. Women entrepreneurs exist in and should be encouraged across all sectors in society, but there are sectors that are traditionally more appealing to women than men. It is a very interesting challenge for educators in HEIs to work out how to integrate ambitions of promoting entrepreneurship in STEM fields with traditionally more appealing sectors for women.

2. Designing and delivering courses for women entrepreneurs requires wide representation by women within the course material. This might include case studies, guest seminars, mentoring. Developing courses for better participation by women should also recognise intersectionality, where for example a student might be a woman but also have a disability, or also have refugee status, or also be in their senior years.

3. Designing and delivering courses for women and/or female entrepreneurs needs flexibility in delivery options, especially where courses are not designed for full time students. Women may have greater family and home responsibilities that makes them less flexible with time. Providing recorded lecture materials and multiple options for engagement may be required.

4. Mentoring as an introduction to networks and agencies could be a very good support to help women stay on their entrepreneurship trajectory. Educators should consider how this can be achieved with the limited supplementary resources and time often available to them. Could they rely on past students as mentors? Is there such supports in other departments of the institution, for example the technology transfer office? Are there experienced entrepreneurs that are willing to spend time supporting other budding entrepreneurs? How does the

government and its agencies support mentoring of female entrepreneurs that you could draw in?

5. Women need additional post-programme support if they want to start a business. They may lack female mentors, be more restricted on time or feel excluded from support agencies and networks. Lecturers should work with their technology transfer offices to establish pathways that feel welcoming and accessible to women. This may be advanced programmes or initiatives to start a business. This information and linkages should be included in the course content.

Educator voice: Dr Sylvia Gavigan, PhD in female entrepreneurship education, Technological University Dublin - Entrepreneurship training plays a vital role as a mechanism to empower female entrepreneurs in order for them to be independent, make decisions for their businesses, improve their business literacy levels, use of digital technology, income generation, and job creation.

Case in action: Mommypreneurs entrepreneurship and digital skills training by Polytechnic University of Cartagena's (UPCT) Cloud Incubator Hub:

"Mommypreneurs" is an international project that aims to strengthen the skills of women on maternity leave or caring for children, equipping them with new digital and/or entrepreneurial skills. The aim is to improve their potential to re-enter the labour market or start their own business. The programme is a two month online course for women wanting to provide digital services as freelancers, work in ICT companies or want to start a business. Through the programme, women acquire both digital and business skills necessary to become self-employed or to improve their career prospects. UPCT participates in Mommypreneurs through its Cloud Incubator Hub and some interesting experiences by students can be read here and here. Link here to the Mommypreneurs webpage.

Case in Action: WE Support to encourage female entrepreneurship from women in STEM at Technological University Dublin (TU Dublin):

WE Support at Technological University Dublin (TU Dublin) is a pan-University initiative to address the historical deficits and to increase representation of women in entrepreneurship across all TU Dublin disciplines. The aims of the WE Support programme are to:

- Increase female student participation in entrepreneurship
- Grow the number of TU Dublin women alumni in senior leadership positions in external organisations; and
- Increase the number of women-led/co-founder TU Dublin spinouts

The programme has multiple aspects beginning with a two-day hackathon focussed on developing a product / service / idea and bring it to the market. It includes mentoring and ongoing end-to-end support throughout the programme including dedicated event information, relevant resources, potential funding and other supports to the participants.

wesupportu
Empowering Women Entrepreneurs
#WeAreTUDublin

3.2 Designing and delivering entrepreneurship courses for persons with disabilities.

Student story: Kaspars Kalvītis, a student with disability participated in pre-incubator IdeaLAB and developed his own idea - E-Race Wheel at Riga Technical University (RTU), Latvia:

Being as independent as possible is important for wheelchair users. This also includes independence when moving. Yet on a daily basis wheelchair users encounter inaccessibility in their physical environment (pavement, curbs, potholes, and much more). Very often this prevents people from moving independently without huge effort and stress. Kaspars Kalvītis, a student at RTU developed his own solution to this problem with the E-race wheel scooter. The E-race wheel scooter gives wheelchair users freedom and makes everyday obstacles less noticeable. The scooter is very easy to use - an additional electrically operated traction wheel is attached to the front of an existing wheelchair with the help of a bracket, and within seconds the manual wheelchair becomes electric.

1. When designing and delivering entrepreneurship courses for persons with disabilities, it cannot be overstated how important the planning and design stage is. Reasonable adjustments and accommodations may vary greatly. In addition, a high percentage of disability is invisible. Planning, working with the disability support office and engaging with students on their own needs even before registration is important. A short questionnaire or interview with students may be conducted before the start of a programme where students can disclose any medical needs or other relevant information that they want to share. Educators should also provide

opportunities during course delivery for students to declare any adjustments that they need. A student may not realise until after they start a course how they need to be supported.

2. Any educator who is delivering an entrepreneurship course for persons with disabilities should have a good knowledge of accessible technologies and other support tools needed for their programme. They will also need to know how these work within the customised software of their own institution as students may not be familiar with these in advance.

3. Persons with disabilities should be represented within the course material such as in case studies, guest seminars or in assessment work. Care is also needed to respect variability of students with a disability. Depending on the size of a cohort, there may be potential to individualise materials, or include a mix of broader and focused material concerning entrepreneurship for persons with disabilities so that everyone feels welcome.

4. While not compromising on quality, consideration of the most suitable pedagogy or mix of pedagogical approaches might be important. For example, what real life projects and assessments can be developed and what options can be developed for each student to participate in? What is the requirement for physical or online participation from different approaches?

5. Course material should include access to post programme supports designed in to help students stay on the entrepreneurship trajectory. This should include opportunities for mentoring, networking opportunities, and access to incubator facilities. Such information should be clear about physical access or limitations that might impact particular individuals.

Student story: *Eddie Hennessy* participant on the self-employment for people with disability course at Technological University Dublin (TU Dublin) led by Prof *Thomas Cooney*

I suffered from a major stroke 11 years ago at the age of 33 which at the time left me completely without speech and paralysed on the right side of my body. I can no longer read and write; my speech will always be affected, and I continue to have right-sided weakness. These are what I call the disabilities you can see; unfortunately, there are many hidden disabilities that I struggle with on a daily basis such as confusion, chronic fatigue, depression, etc. I developed a keen interest in photography during my recovery and with help from Headway Ireland, I started a purely rehabilitative business, mainly to get back my self-worth. I was making no salary, but in order to set-up a business I had to change over my Social Welfare payment to Partial Capacity Benefit (PCB) which meant a reduction of €50 per week. I decided on taking the loss to try and get back my pride, and to contribute to society in the future. It is now January 2022 and my preferred workload schedule is now fully booked for weddings until the middle of 2023. It has been a difficult journey, but I have managed to build a successful business despite the additional and distinctive challenges that I faced. Eddie Hennessy, Hennessy Photography Ltd, Co. Cork.

More information on the Entrepreneurship for People with Disabilities course can be found here.

Student stories:

Aythami Santana at Polytechnic University of Cartagena's (UPCT), Spain:

Aythami Santana student at UPCT and Paralympic taekwondo player describes here what it took to make high level competition compatible with a degree course and successful work internship.

Guillen Carrasco at Polytechnic University of Cartagena's (UPCT), Spain:

Read UPCT student Guillen Carrasco's experience here as a student with muscular dystrophy. Guillen's advice: "You never have to give up, you always have to give your best within your means. The important thing is to achieve small goals "

3.3 Designing and delivering entrepreneurship courses for migrants and refugees.

1. Migrants and refugees may not have the same access to finance and other supports of other groups in society. The educator would need to have a clear understanding of differences before developing course content.

2. Language barriers and reliance on social media may have particular pertinence for migrants and refugees. Course content should be developed with a good understanding of this.

3. Migrants and refugees may not have strong linkages within entrepreneurship ecosystems but they may also have strong networks within their own groups. Developing private sector linkages and linking into migrant networks should be developed within the course content.

4. Social innovation and social enterprise may have an important role in courses developed for migrants and refugees. Barriers to finance or legal status may prevent migrants from traditional enterprise routes for new venture creation.

5. Consideration of post programme support in the design of entrepreneurship courses is important. Working with your technology transfer office or incubation hub to facilitate next steps for migrants and refugees who may not be able to access national supports can help ideas and opportunities reach fruition.

Case in action: Migrant Entrepreneurship Education for Refugees by Cyprus University of Technology:

During the period of January to May 2021 and 2020, 50 students from the Department of Multimedia and Graphic Arts, in cooperation with Migrant Information Center (MIC), designed and prototyped 8 different ideas that aim to help Third Country Nationals to adopt to the local societies of Cyprus.

All ideas were based on highlighting the need to have a more stable and organized system in order to give to those people a second chance to live.

At the end of the semester the 8 ideas were presented to the stakeholders of Migrant Information Center but also to the real users, migrants and everyone was thrilled.

According to this acceptance and the good vibes that were created, we decided to move on to the next step in order to implement better all those ideas. Therefore, we participated to the Junior Achievement competition with the goal, to receive funding from them. To have access to the competition, we needed to fulfil extra lessons for the students to learn how to make business plan, SWOT and PEST analysis, marketing strategies, budget predictions. So, in May they were ready to support their ideas with the extra needed knowledge regarding the needs of the Competitions. At the end, in 2020 we got the second price with 5 teams at the final, gaining prizes, and 2021 3 teams were also at the final stage.

You can read more about the migrant stories from the Project Migrant Info-Center here.

Start-up Visa at Water Campus Netherlands:

This program gives non-EU entrepreneurs the possibility to set-up their startup in the Netherlands. They will receive a VISA for 1 year and get guidance from a facilitator.

Under the visa, expats working on their startup in the Netherlands are guided by an experienced facilitator. This mentor system is designed to support the new business so it has the best chance to grow into a mature enterprise, which not only benefits the entrepreneur but also the Dutch economy.

3.4 Designing and delivering entrepreneurship courses for seniors.

1. Developing entrepreneurship education for seniors offers wonderful opportunities for intergenerational learning experiences in HEIs that can be leveraged in the design of programmes and extra-curricular activities. This is an untapped entrepreneurial potential recognised by the OECD.

2. Designing and delivering education for seniors can have a strong social enterprise aspect promoting solidarity among students and their communities. Entrepreneurship holds the potential for providing a way for seniors to remain active beyond the typical retirement age for those who wish to do so, leading to benefits of improved physical and mental health, maintaining social connections, and creating economic value. It can play an important role in active aging policy.

3. Older people that are interested in starting a business or becoming self-employed may have spent their entire careers working as employees. They may have a lot of

experience but need additional skills such as opportunity recognition to be successful in entrepreneurship and self-employment.

4. The evidence indicates that seniors are much more motivated to stop a business because of retirement or because it was not profitable. This could point to need for educational support to sustain successful business, but also concerning transferring and selling a business to fund retirement.

5. Evidence from the OECD suggests that senior entrepreneurs are very similar to the normal population in terms of skills and competences. However, barriers to entrepreneurship for seniors often include health issues, the opportunity cost of time and the shorter timeline to grow a sustainable business compared to younger entrepreneurs. This points to similar approaches to educational provision, but alternate consideration may be given to targeting, selection, retention and communication channels with seniors.

Case in action: Seniors University at Polytechnic University of Cartagena (UPCT):

The University for Seniors is a three-year programme offered through UPCT's University of Major Studies. Learners study a range of subjects including a special block dedicated to business and enterprise. The programme informs, motivates and familiarises learners on the impact of environmental, energy and sustainable development issues in society, on global warming and climate change. Learners attending the Seniors University programme learn practical skills, but also learn about the development and evolution of science and technology. The aim of the programme is to provide learners with a global vision of aspects in which they have taken part throughout their lives. UPCT leverages knowledge and innovative practices from this cohort by facilitating and co-creating cross generational learning experiences through its UPCT Volunteering Unit. The programme has a strong emphasis on social innovation and enterprise.

3.5 Designing and delivering entrepreneurship courses for young people.

In our tips and pointers for designing and delivering entrepreneurship courses for young people, we are thinking about children and young adults, mostly pre-university age. Our tips and pointers reflect on experiences of courses and programmes designed and delivered by HEIs to pre-university students as tasters of entrepreneurship. In general, young people of university age are considered in Section 2 of this handbook.

1. Young people need a strong practice approach that combines with some theory. Those who feel the need to assert themselves in the field of entrepreneurship, often lack practical experience.

2. Courses for young people should support them to develop both personally and professionally. A favourable environment to develop personally, in terms of communication and teamwork, as well as professionally, in terms of technical / theoretical knowledge is very important.

3. Validating young students' performance throughout a course will help to increase the level of confidence and self-esteem.

4. Once young people reach the labour market, they are limited by the comfort and security they feel and no longer take the initiative to take some risks to start their own business, which leads to stagnation. Lack of motivation needs to be mentioned in the context of courses targeted at young people. This starts before university. Encouraging entrepreneurship in young people at an earlier age gives them a real head start for engaging in entrepreneurship initiatives during their university years.

5. When designing courses for children, particular risk assessments, consents and supports will need to be in place. This will need to be fully worked through before starting if targeting pre-university students.

Cases in action: *Innovation Labs pre-acceleration program* and *Polihack* at Technical University of Cluj-Napoca (UTCN):

Between March 1-15, 2021, the Students' Organization of the Technical University of Cluj-Napoca (OSUT), in collaboration with the University Student Entrepreneurship Society (SAS) UTCN, organized a new project online, entitled "How I became an entrepreneur". Over the course of 15 days, the vast community of UTCN students had the opportunity to participate in a series of trainings dedicated to marketing, start-up business and financial education. “How I Became an entrepreneur” is a fresh, ambitious project that aims to support the students at the Technical University of Cluj-Napoca and prepare them for the moment when they will be ready to start their own business.

Moreover, “How I Became an entrepreneur” becomes a link for UTCN students to the job market, as they have the opportunity to get in touch with the notions of theory prior to a startup initiative. We believe that at the end, the participating students will have a clear idea of the steps required to start their own business and will be able to rely on real facts, studies and personalities that they can exploit to outline a vision. [Titus Maghiar, President OSUT, UTCN, Romania]

The Innovation Labs of UTCN in Romania is a pre-acceleration program for technical startups in which young people passionate about technological and digital innovation can materialize their ideas in hackathons and mentoring programs. It is the largest event dedicated to innovation, startups, and the future of young people.

More information on Innovation Labs here.

If you have a bright mind and feel ready to take your first steps in entrepreneurship, then we are waiting for you at our hackathon! Polihack, 11th edition 2020-2021 brings together students and high school students, who have one thing in common: bring innovation through their ideas. Within PoliHack, participants go through training stages in project management, marketing, teamwork, and communication.

More on Polihack here.

Educator voice: "One problem identified in most hackathon competitions is the lack of continuity of participants' projects. The identified solution is to facilitate a mentoring period of 2 weeks, after the end of the competition, in the form of a bootcamp." [Titus Maghiar, President OSUT, UTCN].

Young Innovators Programme at Cyprus University of Technology:

The Young Innovators programme of EIT Climate-KIC is a signature educational programme that aims to foster a systemic view on current climate challenges and empower young people to develop innovative solutions through problem-based learning experiences. With the Young Innovators programme, students are invited to join this journey where they are introduced to a systems innovation approach. Systems innovation approach is based on the awareness that any change that is planned to be introduced in a particular sector in society will affect and be affected by other parties. Taking a systems innovation approach enables students to explore the relationships between such interconnected aspects and also to take account of the people who are affected, their values, their expectations and their reactions. Involving students working towards a healthy and sustainable planet, and encouraging them to act as catalysts for systemic change, is critical. The thinking around climate innovation needs to start now as these young people are the business, societal and national leaders of tomorrow.

The Cyprus Energy Agency and the Cyprus University of Technology deliver the Young Innovators programme in secondary and high schools in Cyprus.

The EIT Climate-KIC Young Innovators Cyprus aims to support school students to develop their 21st century skills and competences related to climate innovation, under the umbrella of the PBL pedagogy. Among other competencies, the project promotes systems thinking and analysis, critical thinking, creative problem-solving and entrepreneurship. The programme has 4 Stages:

1. Training of the trainers workshops, where the educators are trained to deliver the workshops of stage 2.
2. School Innovators workshops, where the trained educators along with the coaches work on specific challenge to find solutions.
3. Young Climathon competition.
4. Young Changemakers, where the winners of stage 3 competition, collaborate with actual solutions with change-owners and the local-authorities.

Learn more here: https://yicy2020.cyprusinteractionlab.com/.

Watch this video: https://www.youtube.com/watch?v=mQQnQGKHfoE

4. Conclusion.

This handbook will support educators to develop entrepreneurship programmes and courses that are more inclusive. By using UDL principles throughout we are arguing for an approach where every student feels welcome and can have an equal experience. This is without compromising on quality. The UDL approach also eliminates retrofitting, reacting and correcting every individual need.

We recognise, however, that universal design does not replace 'reasonable adjustment'. Rather a continuum of care is needed in the planning, design and delivery entrepreneurship courses.

The skills that you will need as an educator to design your entrepreneurship modules and courses for everyone are the same skills that you will be teaching to your students. It requires vision. It requires creativity. It requires planning and management. It requires working with others. In short, designing inclusive entrepreneurship courses and content really requires that you lead by example.

THANK YOU FOR YOUR TIME, ENERGY AND COMMITMENT TO INCLUSIVE ENTREPRENEURSHIP EDUCATION AND TRAINING.