

Entrepreneurial education



**Policy recommendations to deliver the
skills needed for the workplace of the future**

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“The workplace of the future will be significantly changed from what we know today. The jobs that will be available and the skills they demand, we have not yet imagined.”

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Foreword

Ibec wants the Government to invest in entrepreneurial education. This document is designed for all stakeholders; government, policy makers, employers, parents and students at all levels. We aim to change the thinking around entrepreneurship for young people, to view it as a culture, a philosophy, a permanent theme across education rather than as a stand alone subject.



This is a critical issue because, we need to look to the longer term and what the future of work will mean for our economy, society, how we live and how we will work.

It is a fact that the workplace of the future will be significantly changed from what we know today. The jobs that will be available and the skills they demand, we have not yet imagined. The ways of working to complement the new workplace will have to be utterly different from our traditional understanding of 'the office'. This poses great challenges for us as we move to a more globalised and technology driven society and working environment. Estimates suggest that students currently in the education system will have held an average of 10-12 jobs by the time they reach the age of 38. For employers this can be both an opportunity and a challenge. Over 60% of children today will work in jobs that currently do not exist.

It is incumbent on us all at this time to begin planning for the future of our graduates and to build a society in which they thrive. Given the degree of uncertainty associated with this we need to carefully consider what the future may hold and what skills will be appropriate in circumstances where the pace of technological change is constantly accelerating and how best to prepare young people for this rapid pace of change.

The education system has the potential to offer most students their first opportunity to see into their future world of work and their lives. We need an education system that is more inclusive and encouraging of entrepreneurial thinking to develop the skills that will be required in the future. Infusing entrepreneurial thinking into the education system has a myriad of positive effects, including economic growth, increased societal reliance but also individual growth, increased school engagement and improved equality.

We must be ambitious and brave in designing education programmes, work and workplaces that will excite, develop and attract the talent and skills to work in connected, constantly evolving, digital workplaces.

In a globally competitive economic environment, where societal challenges will become more powerful, there has never been a more urgent need for a talented, enterprising workforce and constant innovation in product and service development that can create economic, social and cultural value.

Well thought out and designed entrepreneurial education policy will maximise the potential of skilled young people to devise the next generation of innovative products and processes for all our benefit.

Danny McCoy
CEO, Ibec

Introduction

What is entrepreneurial education?

“Entrepreneurship is when you act upon opportunities and ideas and transform them into value for others. The value that is created can be financial, cultural or social.”¹

The need for entrepreneurship has never been more widely acknowledged than it is now. In September 2014 the Government launched a national policy statement on Entrepreneurship in Ireland which singled out the education system as having a critical influence in shaping entrepreneurial attributes from an early age. Ibec has developed a set of recommendations to turn this aspiration into a reality. Its key proposition is that this will not happen without the commitment of the education system itself. In order to secure this commitment we need a new language which defines entrepreneurship in a way that is not inimical to education values and reinforces the type of learning outcomes to which educators are committed.

A thriving society backed by a strong economy can only be achieved if it imbues motivation and aspirations for innovative, well rounded, educated and entrepreneurial people, regardless of their career path. They have the spirit and courage to think in new ways and adapt to the challenges they face.

As education is key to shaping young people's attitudes, skills and culture, it is vital that entrepreneurial education is addressed and delivered

from an early age. Reinforcing entrepreneurial education in schools and within higher and further education institutions will have a positive, lasting impact on the dynamism of our economy and society.

There are many different challenges associated with entrepreneurial education. The first challenge surrounds the definition of what is under discussion and the language used to define entrepreneurial education. The second challenge centres on whether entrepreneurship can actually be taught and learned or whether it is innate. This raises the question of what entrepreneurial education looks like and how it can be developed across the various levels of the education system.

Young people who benefit from entrepreneurial learning develop latent business knowledge and essential skills and attitudes, including creativity, initiative, tenacity, teamwork, understanding of risk and a sense of responsibility and social resilience. These are the high level skills necessary for all commercial and social endeavours, that make young people more employable and more 'intrapreneurial' in their work within existing organisations, across

1. Moberg, K., Stenberg, E. & Vestergaard, L. 2012. Impact of entrepreneurship education in Denmark-2012. Odense, Denmark: The Danish Foundation for Entrepreneurship – Young Enterprise

Introduction

the social, public and private sectors. As a result, entrepreneurship is included as a key competence in the European Framework for Life Long Learning, as a focus for action in the Rethinking Education Commission Communication and is highlighted as an instrument to improve employability levels according to the Annual Growth Survey 2013. Therefore investing in entrepreneurial education is one of the highest return education investments that a government can make, not only in the business sector, but also for society.

All businesses, across all the sectors of the economy, recognise the high value of the technical and academic skills of graduates in Ireland. However they have raised concerns about the gap in core competencies and skills that are generally associated with entrepreneurial education. This sentiment was validated by the recent National Employers Survey (May 2015), which indicated that there is a low degree of employer satisfaction with graduates' entrepreneurial skills and business acumen skills, below 45%². This result must trigger a policy response to improve the entrepreneurial mindset and skills amongst graduates. Entrepreneurial education, embedded in the continuum of education, is one measure to address this skills gap.

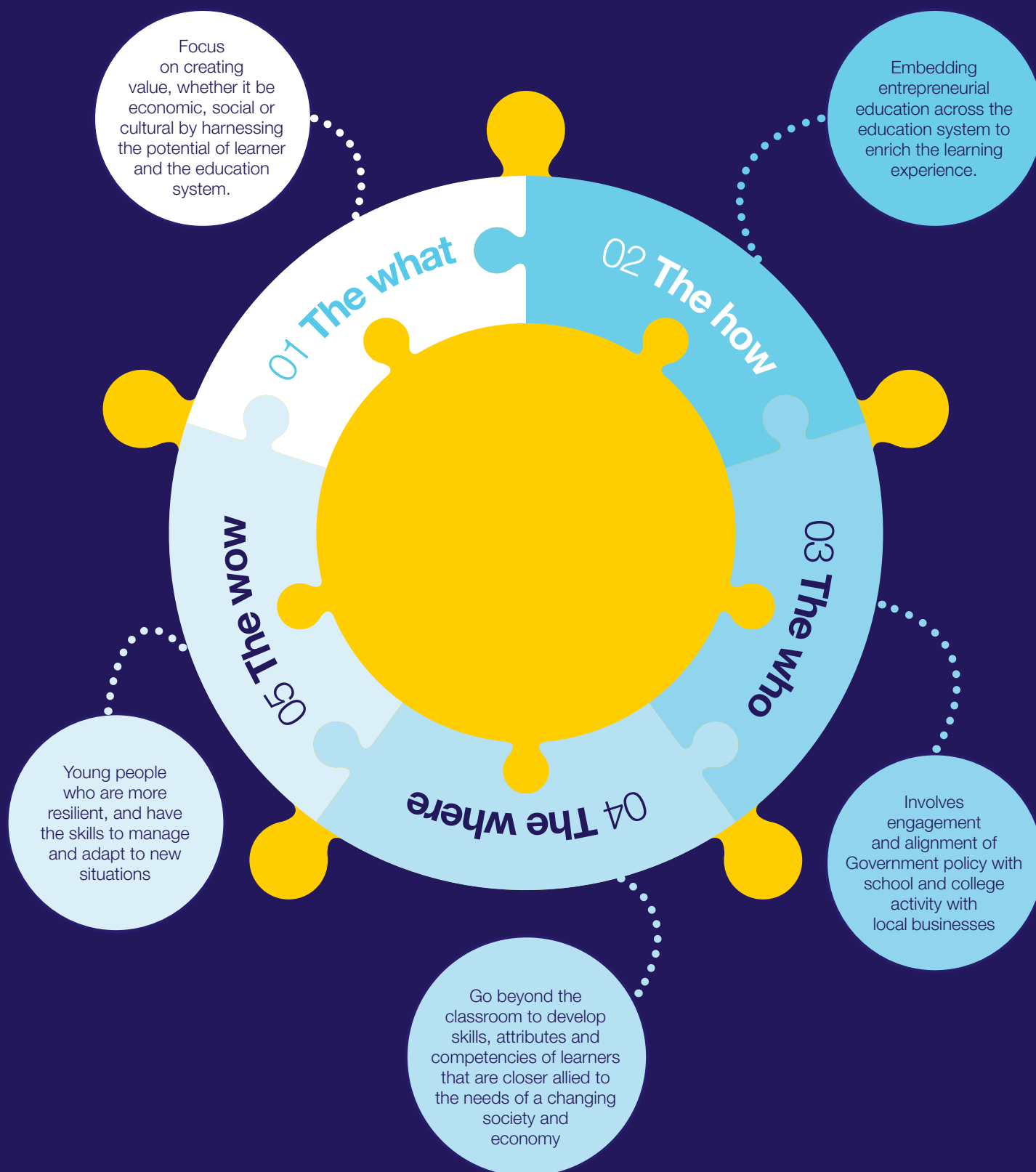
While some EU countries have clear strategies to deliver entrepreneurial education, Ireland possesses a wide variety of separate entrepreneurship initiatives taking place across all levels of Irish education which are highly fragmented, lacking a clear sense of overall purpose and not embedded in core curricula.

We should take the opportunity to build on the good work and move forward in a more cohesive way.

Claire McGee
Innovation and Education Policy, Ibec

2. <https://www.education.ie/en/Publications/Education-Reports/National-Employer-Survey-Employers-Further-Higher-Education.pdf>

Entrepreneurial education: five key points



What do we mean by entrepreneurial education?

Entrepreneurial thinking provides individuals with a new way of thinking, the courage to meet and adapt to the challenges they may encounter and to become more opportunity orientated, proactive and innovative and building resilience. That may involve developing their own commercial or social ventures, or becoming innovators in the organisations in which they work.

There needs to be a clear understanding of what we mean by entrepreneurial education and thinking.

Drawing on the experiences of Denmark, the most accurate and comprehensive definition of entrepreneurial education can be neatly summarised as the methods, activity and content that underpin the following definition of entrepreneurship:

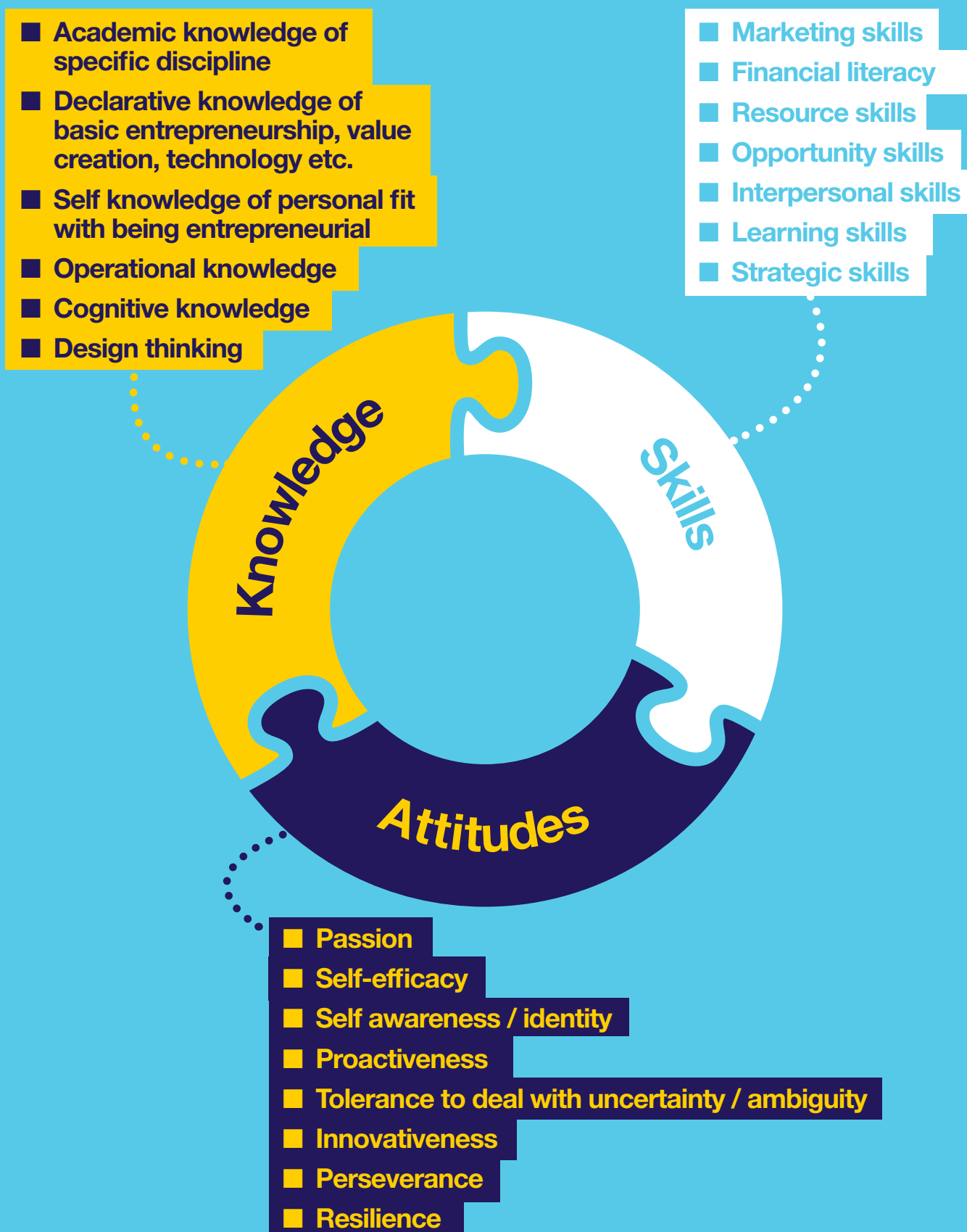
“ Entrepreneurship is when you act upon opportunities and ideas and transform them into value for others. The value that is created can be financial, cultural or social .”

The main goal of entrepreneurial education is to develop some level of entrepreneurial competencies. These competencies can be defined as the knowledge, skills and attitudes that affect the willingness and ability to perform the entrepreneurial job of value creation.

3. Moberg,K., Stenberg, E.& Vestergaard,L. 2012. Impact of entrepreneurship education in Denmark-2012. Odense, Denmark: The Danish Foundation for Entrepreneurship – Young Enterprise.

Entrepreneurial competencies

(Adapted from Lackeus, 2015)



What do we mean by entrepreneurial education?

Why is entrepreneurial education so important?

For much of the past decade the European Commission has held the view that entrepreneurship must be embedded in the education system and that it should be available to all primary, post-primary and third-level students.

There is a growing body of international evidence which demonstrates that students whose education emphasises entrepreneurial thinking show improved academic performance, school attendance, and educational attainment. Students also have increased problem-solving and decision-making abilities, have improved interpersonal relationships, teamwork, money management, and communication skills, and are more likely to find employment.

In addition, it has a positive impact on enhanced social psychological development, including resilience, self-esteem, motivation and self-efficacy. The reason that students achieve these benefits is because the primary goal of educating students in entrepreneurial thinking is not necessarily to get them to start their own business, but to give them the ability to think positively, to look for opportunities to make things happen, to have the self-confidence to achieve their goals, and to use their talents to build a better society (economically, culturally and socially). It also recognises that students of all academic abilities can be part of this process and that success is not dependent upon examination success but on how they fulfil their potential and live their lives.

Where does Ireland stand regarding entrepreneurial education?

Ireland possesses a wide variety of separate initiatives across all levels of Irish education. While many are effective on an individual basis, the initiatives are highly fragmented, lacking a clear sense of overall purpose and direction, and not meeting the needs of the country. A coherent entrepreneurial education policy, integrated across all education levels and government departments, is required. Such a policy needs to provide entrepreneurial education to a wider number of students throughout the education system, and not be confined to business students alone.

A succession of Irish publications such as the Enterprise Strategy Group report, the Small Business Forum report, various GEM reports and the 2007 'Towards Developing an Entrepreneurship Policy for Ireland' report have argued for the development of entrepreneurial education across all levels of the Irish education system as a sustainable source of locally grown entrepreneurs.

The report of the Entrepreneurship Forum (Jan 2014)⁴ focused on how entrepreneurship is a driving force in an economy and that growing the number of start-ups in Ireland should be a key policy priority. It argued that, by making entrepreneurship a normal career choice, we will increase the pipeline of entrepreneurs. There appears to be a growing acceptance of the need to build behaviour-related skills at a young age.

To encourage a successful knowledge economy, Ireland needs to increase the number and quality of indigenous companies and create graduates with entrepreneurial skills. Research (ACE 2009)⁵ tells us that entrepreneurial education not only helps to create entrepreneurs and new business ventures but additionally develops more creative and self-confident individuals who are equally valuable within organisations. Such an approach will support the continued attraction of foreign direct investment and deliver graduates who can create employment or contribute to the potential of the organisation for which they work.

4. Report of the Entrepreneurship Forum, January 2014 Entrepreneurship in Ireland: Strengthening the Startup Community <http://www.djei.ie/enterprise/smes/EntrepreneurshipForumReport2014.pdf>

5. Coleman, M., Cormican, K., 2009. The Accelerating Campus Entrepreneurship (ACE) Initiative: Creating entrepreneurial graduates for Ireland.

Where are we currently going wrong?

More than half of Irish universities and institutes of technology have institute-wide policies and plans to assist with the development of entrepreneurial behaviours, skills, experiences and mind-sets. However, entrepreneurship education remains fragmented, if prolific. A review in 2011⁶ found that in third level institutions there were 44 full entrepreneurship education awards and 416 courses with credit-bearing entrepreneurship modules. However in the main, particularly at third-level, entrepreneurship programmes are not available to students of non-business programmes.

To date, entrepreneurial thinking within education is primarily viewed from an economic perspective. This works well for elective courses at third level, many of which relate to business disciplines. However, the infusion of entrepreneurial thinking into the non-business disciplines such as arts, humanities and science, and at primary and post-primary school level, is also equally critical.

Most entrepreneurship courses are underpinned by “business planning and management”. Whereas evidence suggests that successful entrepreneurs depend more on their ability to be adaptable to the market rather than formal business planning. Causal processes around the linear progression from idea to market research to finance to market tend to be taught in classrooms. However, serial entrepreneurs suggest that, in reality, surprises and deviations are an integral part of the entrepreneurial experience, and that adaptability and the ability to deal with the unexpected are more valuable attributes. We need an education system that reflects this reality.

Entrepreneurial learning requires experiential, real world and problem based learning to enable individuals to learn from doing and risk taking. This needs to be incorporated into existing models of education, coupled with more innovative ways of teaching and learning. It lends itself more to a cross-faculty or multi-disciplinary approach rather than the traditional structures and programmes of theoretical learning that exist.

6. Report to South East Regional Authority, May 2011, ‘Youth Entrepreneurship Strategies (YES) Project, Entrepreneurship Education in Ireland – Research Mapping and Analysis. Tom Martin and Associates.

Policy recommendations

The European Commission has long recognised that to truly foster entrepreneurial spirit, culture and activity across its member states, it needed to ensure that entrepreneurial education is made available to all students at all levels across all countries.

Working towards this ambition, the EU has published a series of reports and recommendations for member states to act upon. In addition there have been a number of conferences and workshops aimed at developing an entrepreneurial mindset through education and learning systems that have provided recommendations and possible actions for various stakeholders, with the development of entrepreneurship education strategy being at the heart of any set of initiatives. Unfortunately, the Irish response to this call for action has not been proactive.

For these reasons, Ibec is making the following recommendations.

Theme 1

Develop, implement and deliver an ‘Entrepreneurial Education Policy’

Recommendation 1: Department of Education and Skills to lead the embedding of entrepreneurial skills in education policy, with support from relevant government departments and in consultation with key stakeholders and partners. This should be central to the new National Skills Strategy which is currently under development.

Recommendation 2: The development of entrepreneurial learning outcomes should be a key metric in the system performance frameworks of the further and higher education sectors.

The Department of Education and Skills is currently devising a new National Skills Strategy to co-ordinate the extensive reform programmes underway within the education and training system and new investment plans. A key priority for this strategy should be to incorporate a comprehensive policy on entrepreneurial education. It is the natural and appropriate home for a dedicated policy plan on entrepreneurial education. This will ensure:

- a high level of support from key government department and agencies responsible for delivery of the strategy
- a coordinated approach with relevant linkages to other national policy initiatives to support entrepreneurship in Ireland, including the 2015 Action Plan for Jobs and the National Policy Statement on Entrepreneurship (September 2014)
- that entrepreneurial education is embedded and rolled-out in all programmes across the education and training system
- a statement of intent by government to respond to the overwhelming call from employers and educators to improve the transferable skills and attributes of learners.

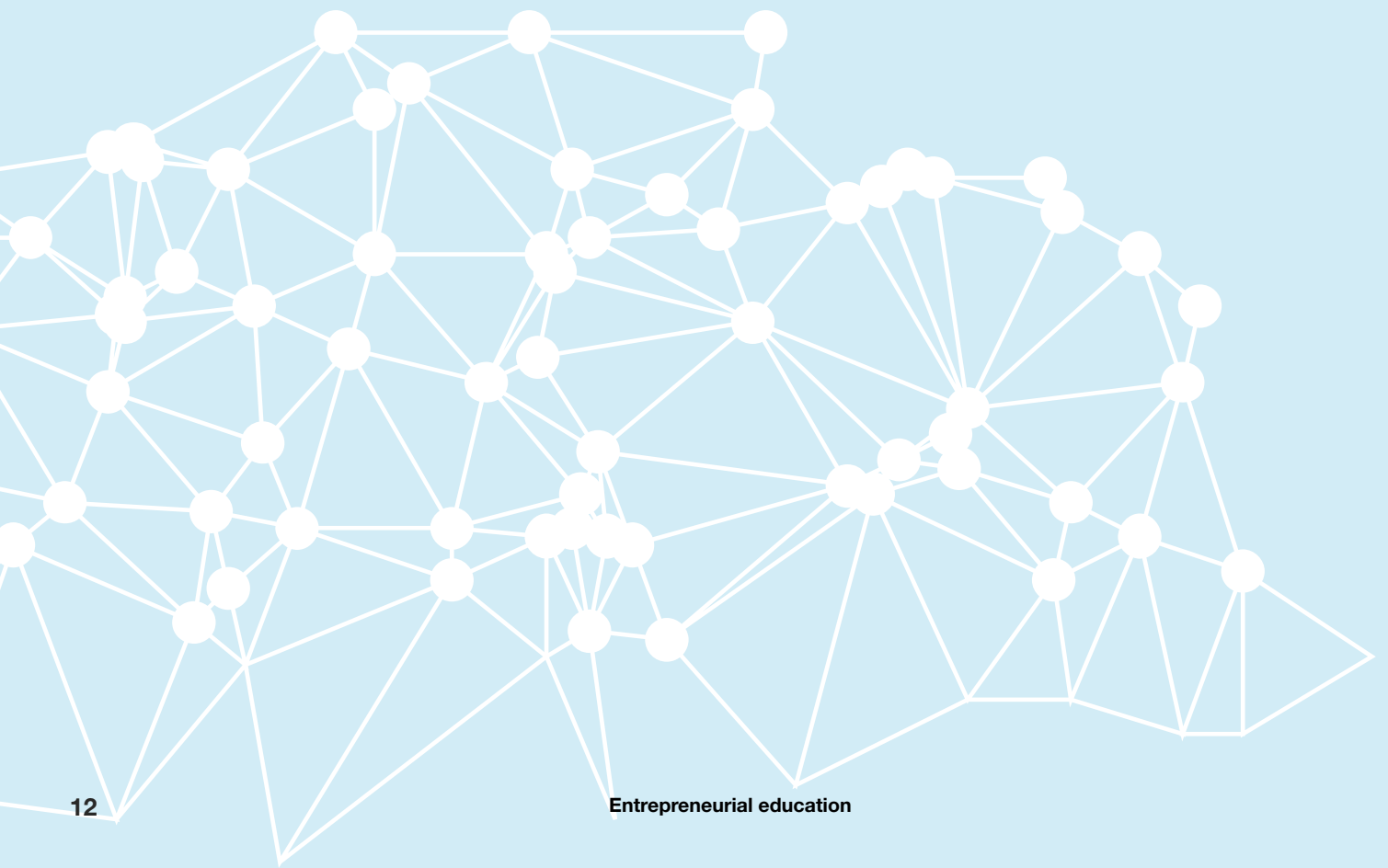
An entrepreneurial education policy will provide the meaning and detail of a clear educational concept that seeks to equip teachers and educators with the ability to teach the world of tomorrow. It will give focus and direction on how to embed entrepreneurial education into the entire curriculum across the education continuum in Ireland. It will require a strong political commitment to its long term planning and the future development.

The policy should clearly set out the aim of the Department of Education and Skills, and relevant and connected departments and what it seeks to achieve. It should bring together the many different initiatives currently underway and incorporate best practice learnings from other member states. It will also consider specific actions and measures for key stakeholders, including the senior management of key government departments, higher education institutes, primary and post-primary school bodies and the business and civic communities.

Policy recommendations

To achieve its objectives, the policy will need to highlight an integrated approach, owned by the education providers and supported by the business community. The development of a policy statement, with concrete action plans, in conjunction with the partners who will deliver and implement its key recommendations will help set the tone and provide clarity around the desired outcomes. It will also ensure that all partners are working towards the same concept of entrepreneurial education and thinking, with a common understanding of the associated language.

There have been extensive reviews of both the further and higher education systems in recent years resulting in new strategies for both sectors. These reviews have concluded that the funding system for higher and further education is in need of further reform in order to incentivise high performance and better responsiveness to the needs of economy and society. Therefore entrepreneurial education should be integrated as a key metric in their performance reports.



Theme 2

Promote experiential learning at all education levels

Recommendation 3: The Department of Education and Skills should continue to implement Junior Cycle reform and ensure that it is properly resourced to meet its objectives.

Recommendation 4: The National Council for Curriculum and Assessment (NCCA) and Quality and Qualifications Ireland (QQI) should ensure that future curricula modification includes a strong practical component and the development of key skills at the appropriate education level.

Recommendation 5: Transferable and entrepreneurial skills should be embedded in the learning environment, curriculum and assessment of all Government supported apprenticeship programmes.

The Government has taken some steps to embed entrepreneurial education in the education and training system.

The Junior Cycle reform plan sets out a model for the development of key skills and statements of learning that, in many ways, define entrepreneurial education. These will help to encourage the development of the skills required for positive business and social entrepreneurship, including well-being, resilience, strong interpersonal skills, effective communication, self awareness, self-motivation and management. If properly implemented, it will demonstrate how entrepreneurial education can be developed through a variety of teaching and learning experiences which extend beyond the traditional academic examination.

In addition, the development of the new apprenticeship model also provides an opportunity for learners to gain practical work experience while gaining dedicated occupational training. Apprenticeships and other work-based professional training can play a key role in boosting skill levels across our economy, supporting people into sustainable careers or encouraging them to start up their own businesses. While the proposed apprenticeship programmes are designed to train people for specific skilled occupations, they must also be broad enough to equip candidates with genuinely transferable skills and an entrepreneurial mind-set. These are skills which they will need beyond their current occupation. The challenge is to embed these skills in the learning environment, curriculum and assessment at all levels of education and training.

Policy recommendations

Entrepreneurial thinking and mindsets cannot be encouraged or achieved through traditional teaching and instruction alone. To provide all students with an opportunity to develop and enhance the creative skills that are closely associated with entrepreneurial thinking, experiential learning, action-orientated learning, mentoring and group projects are vital additions. New teaching methods and innovations must be given the necessary supports and space to develop and succeed. It is important to recognise that this approach will not threaten academic abilities formed by conventional teaching practices, but rather enrich the academic experience and learning outcomes for both the student and educator.

Entrepreneurial education must be considered as an integrated, horizontal approach that is embedded naturally throughout the learning programme.



Theme 3

Provide professional development and opportunities for educators to encourage entrepreneurial thinking

Recommendation 6: The Department of Education and Skills Teacher Education Section, Professional Development Service for Teachers and the Teaching Council should ensure that entrepreneurial education is embedded in all teacher training programmes - from entry to initial teacher education programmes, induction of newly qualified teaching and the continuing professional development of teachers throughout their careers

Recommendation 7: The Department of Education and Skills should work with state agencies, including Science Foundation Ireland (SFI) and Local Enterprise Offices to develop an entrepreneurial education network with a single web portal.

Recommendation 8: The National Forum for the Enhancement of Teaching and Learning should ensure that entrepreneurial education pedagogy is at the centre of its new professional development framework.

Recommendation 9: The Department of Education and Skills Inspectorate should ensure entrepreneurial learning outcomes are embedded and measured through school self-evaluation inspection reports.

Our best teachers, working in primary, post-primary or third level education, keep their methods and practice under review. They adjust their practices according to developments in teaching pedagogy. To facilitate this, teachers and educators also need opportunities

to acquire and enhance their knowledge, skills and attitudes required to include entrepreneurial education and to enable entrepreneurial learning in their work programme.

Policy recommendations

By introducing entrepreneurial thinking into teacher training programmes, it would enable teachers to understand the distinction between entrepreneurship and entrepreneurial thinking and how it supports education. It will emphasise the common understanding on the need for entrepreneurial education, to dispel any myths and misunderstandings around the concept and how it can be incorporated into existing school curricula, learning outcomes and school activities. Training should focus on supporting educators to make entrepreneurial education more explicit in learning outcomes and how current academic activity and entrepreneurial thinking correlate. Teachers should be encouraged and rewarded for engaging with and developing links outside their institutions with local business and social enterprises to enhance the experiential learning opportunities for students.

Existing in-service training provisions should also provide continuous professional development opportunities for current teachers to receive ongoing entrepreneurial education training.

To support this, teachers also need to possess a range of competences related to creativity, innovation and entrepreneurship and to work in a supportive school environment where this activity is encouraged and mistakes can be viewed and used as learning opportunities.

While there are a number of positive initiatives underway (see Appendix), the aim and content of each initiative and their learning outcomes is not captured and shared in any central location. The development of an entrepreneurial education network supported by an online resource, would ensure continuous quality and enable teachers and educators to exchange experiences. The online resource could act as a central hub that gathers and disseminates information and supporting materials could be an excellent resource for teachers, including useful teaching materials such as case studies, videos etc. that are available to teachers to develop and adapt for their own needs.

The National Forum for the Enhancement of Teaching and Learning recently launched a consultation process for the establishment and management of a professional development framework for those who teach in higher education. This framework will address a number of the key recommendations for teaching and learning from the National Higher Education Strategy to 2030. It is critical that entrepreneurial education is at the centre of this framework.

Theme 4

Inspire the student

Recommendation 10: Higher level institutions should reward and accredit students who participate in extra curricular entrepreneurial projects.

Recommendation 11: The Department of Education and Skills should introduce a new unified National Entrepreneurial Award - at primary and post-primary levels. In addition companies who have worked effectively with schools to develop entrepreneurial education should be acknowledged in these awards. All related awards should feed into this programme.

The individual student should be front and centre of any initiative to encourage entrepreneurial thinking. Students should be encouraged to take on the responsibility to initiate and seize opportunities presented which allow them process entrepreneurial skills outside the classroom without a teacher or lecturer watching over. Value and accreditation should be given to the development of entrepreneurial thinking and experiences, such as the involvement in clubs and societies and civic society projects, particularly at third level.

In addition, this is an excellent opportunity to foster a greater understanding of social entrepreneurship and the social economy. Opportunities must be granted to students to develop, implement and participate in social and civic society projects. Benefits such as fun, engagement, creativity and learning by taking on societal challenges could be more viable reasons for students, teachers and academics to engage in entrepreneurial education and practices.

Education of our wider society to appreciate the importance of entrepreneurship is crucial if we are to create the jobs that are needed into the future. It is essential to foster a culture that supports a level of risk taking, curiosity and learning from mistakes or failures rather than focuses on punishment for failure. Failure and dealing with failure needs to be addressed within education to counteract the perceived risk aversion, more generally fostered within the curriculum.

Theme 5

Encourage and reward the role of business and civic society

Recommendation 12: The Department of Education and Skills should develop a national framework to facilitate the expansion of business “adopt a school” type programmes, which are currently promoted in the ICT Skills Action Plan and proposed in some Regional Action Plans for Jobs, to incorporate other career options and entrepreneurial education initiatives.

Recommendation 13: The Department of Education and Skills in collaboration with stakeholders should develop guidelines for industry on how to support entrepreneurial education activities and how their resources can be valued within the education sector to ensure a consistent approach to industry engagement.

Our society and economy is constantly changing including business organisations and the jobs available. Creativity and innovation are becoming important graduate skills for the future. To respond and prepare for these requirements, new and different opportunities to develop the talents and skills of young people must be sought. Acquiring a high level of academic skills coupled with high levels of literacy and numeracy will remain important but learning how to make use of these skills and apply them in an organisation is critical. Entrepreneurial education prepares young people for their role in society and the working world. For it to be effective, the business community must be involved.

Ireland's business community has already contributed a great deal to existing enterprise experiences in schools and higher education institutions. The development of a comprehensive strategy may be the opportunity to formally recognise their input and to build upon it. It will ensure a tighter programming of activity to reflect the common needs of business and education to improve the overall experience. Those in the front line of enterprise and entrepreneurial activities can set an example that will inspire others to follow their

lead. Business champions are the right people to convince their peers and followers of the importance of entrepreneurial in education.

Initiatives such the Business in the Community Schools' Business Partnership, Junior Achievement Ireland and the Smart Futures programme have already fostered productive links between companies and schools. However, there is a limit to the absorptive capacity of schools for this type of activity. Therefore a national framework for an 'adopt-a-school' type programme is required.

Promoting a natural culture and genuine spirit of entrepreneurship is essential to facilitate a strong pipeline of future business startups. It is well recognised that education plays a significant role in shaping attitudes and culture. Ibec supports the Government's National Policy Statement on Entrepreneurship where it underlines the importance of the system supporting young people and adults to acquire the skills that enterprise needs now and to prepare them to both take up and to create the jobs and workplaces of the future.



Theme 6

Implement a coordinated approach to national policy

Recommendation 14: Dedicated Department of Education and Skills funding should be ringfenced to support effective entrepreneurial education projects at all levels of the education system.

Recommendation 15: Department of Enterprise, Jobs and Innovation should expedite the roll-out of the measures contained in the National Policy Statement on Entrepreneurship and 2015 Action Plan for Jobs and its regional plans to support a strong entrepreneurial culture and ecosystem.

Recommendation 16: The new Strategy for Science, Technology and Innovation should incorporate an entrepreneurial education element in all programmes to ensure that the innovative capacity of all research programmes is harnessed to develop commercially successful outcomes.

As stated, the support for entrepreneurship has never been greater than at present. Nonetheless, government support and policy measures to advance an entrepreneurial ecosystem are taking place in different pockets of government and at different paces. Nonetheless, many of these initiatives place skill development and human capital at the centre.

While each activity is positive and welcome for its own merit, a degree of coordination between the various strands is required to ensure they are appropriately aligned to deliver the desired outcome.

The 2015 Action Plan for Jobs sets out ambitious targets to grow and support job creation and development in Ireland. As part of the Plan's Disruptive Reform programme, a national talent drive will commence to ensure a more dynamic responsive and high quality education system, to

result in high quality skills at all levels, enhanced employability of learners, and strong engagement between the education and training system and employers. This Disruptive Reform has the potential to support the roll out of entrepreneurial education across the education system. In addition, the Action Plan also sets targeted actions on the development of entrepreneurial education and skills, including the increasing participation in Ireland's Best Young Entrepreneur awards, Student Enterprise Award and Sean Lemass Award for Excellence in Enterprise, embedding entrepreneurship support within the HEI System Performance Framework and the inclusion of entrepreneurial education as an important element of the national framework for enterprise engagement. Ibec welcomes these initiatives and would encourage government to expedite their implementation. These action plan targets must be reflected in a national policy on entrepreneurial education.

Policy recommendations

Innovation and entrepreneurial thinking are inextricably linked. Europe, and to the same degree Ireland, suffers from what is known as the European Research Paradox. On one level, Europe has a strong research base, dynamic companies and talented people with a high level of research papers, however, paradoxically there is limited action in turning good research ideas into innovative products and services.

We know that Ireland produces high quality early stage research but have limited success in producing entrepreneurial people and minds who can spot market potential of different sources of knowledge and research outputs, to create commercial value.

The Department of Enterprise, Jobs and Innovation are currently developing a new Strategy for Science, Technology and Innovation, from which the development of highly trained and skilled people will be a key success factor. It will be important that entrepreneurial thinking is embedded in all research programmes to harness the knowledge and technology created into commercial products and services. The goal should be to continue to produce high quality research and graduates with strong technical and academic ability, but also to link with industry and to educate students in critical and independent thinking to bring their research to the next level.

Conclusion

Fostering a new entrepreneurial culture in Ireland requires a clear strategy for entrepreneurship education across the full spectrum of our education system.

Building creativity, innovation, problem solving and risk taking including entrepreneurship, at all levels of education is necessary for our economic future. Whether internal or external entrepreneurs, the development of entrepreneurial thinking will ensure individuals are adaptable and capable of dealing with the challenges of the dynamic environment of our global economy and society.

Our recommendations are inter-related, all have an important place in what should be an overarching government policy on entrepreneurial education. The result should aim to develop students as they move through the education system and take their place in society with the ability to communicate, participate, initiate, innovate, contribute and adapt to change as society and the economy continues to evolve. Our entrepreneurial talent must match our academic ability if we are to harness our full potential to create value for our society and economy.

“We may not all be entrepreneurs, but we can all be entrepreneurial thinkers.”

Appendix

Examples of entrepreneurial activities throughout the education eco-system

Currently in the Irish education system there are a range of entrepreneurship programmes aimed at developing entrepreneurial thinking, skills and behaviours with varying levels of depth and some more embedded than others. Please note that this list is intended to provide a representation of current activity rather than a full and exhaustive list of the various actions and will be updated.

General

1. The South East Regional Authority was a partner in the INTERREG IVC part-funded YES project (www.young-entrepreneurs.eu) comprising eight participating regions from eight EU member states. The project concluded in December 2012. The overall objective of the YES project was, through exchanging and transferring experiences and good practices among partners, to find better ways of integrating entrepreneurship education into mainstream education and to improve policies at national, regional and/or local level.

www.sera.ie/Projects/Title,6568,en.html

2. Junior Entrepreneur Programme is a 10 week entrepreneurial education programme for primary school pupils. The not-for-profit programme is led by Jerry Kennelly (founder & CEO of Tweak.com) in association with academic partner, Mary Immaculate College, Limerick. The programme is embedded in the principles of the Primary School Curriculum and utilises an integrated teaching and project-based approach to teach many strands of the curriculum. The programme helps participating pupils to develop a number of skills including literacy, writing, presentation, drawing, technology, research skills, numeracy, financial, consumer awareness, storytelling, listening skills, creative thinking, problem solving, team building and collaboration skills. www.juniorentrepreneur.ie

Primary Level

1. Bizworld Ireland run 2-3 day immersion events in primary schools where students are put into teams and set up a company, raise money, pitch to investors and have a product or service at the end of it. Bizworld also offer summer camps and work with educators to introduce entrepreneurial concepts to schools. However, Bizworld is based in Dublin, Kildare, Wicklow, Galway, Cork and Limerick and could be rolled out nationally.

www.bizworldireland.ie

3. The programme has a significant personal development impact on participating pupils, building confidence, self-awareness and self-esteem, and an appreciation of individual skills and talents. This year, successful entrepreneurs around the country are championing the programme in their areas, making it possible for thousands of primary school pupils to take part in this unique initiative. 5,000 pupils are currently participating in the programme and playing their part in creating their very own classroom enterprises.

4. Each year, with materials and support from South Dublin County Enterprise Board, 5th and 6th class students in participating schools study what makes a business succeed, idea generation, market research, finance and production culminating in setting up their own business and trading both inside and outside of school through Bí Gnothach. Some of the successes in this area can be down to whether an Entrepreneurship Education Development Officer is involved through the professional development service for teachers (PDST).
5. Junior Achievement Ireland is part of a worldwide programme to help primary and secondary level students to become more engaged with enterprise and see their role in the world as individuals, workers and consumers. www.jai.ie
6. Business in the Community's Schools' Business Partnership is an educational inclusion programme that partners schools with business and empowers young students to take control of their future. www.bitc.ie
7. Kidz Buzziness is a curriculum-integrated activity to provide primary school children between the ages of 10 and 12 years with a basic understanding of entrepreneurship. www.sera.ie/Projects/KidzBuzziness-4kids
- real enterprise including working as part of a team, managing production and finances, organising a sales and marketing campaign and liaising directly with customers, judges and the media.
2. The Seán Lemass Award for Excellence in Enterprise are presented to student entrepreneurs who received top prizes at either the Student Enterprise Awards or the Get up and Go competition
3. The Network for Teaching Entrepreneurship, a worldwide youth entrepreneurship education and development programme, and Foróige, Ireland's youth organisation have partnered over the last 10 years to deliver in and out of school programmes, workshops and awards to secondary schools. This is something that could be actively promoted nationally.
4. Foróige Network for teaching entrepreneurship www.foroige.ie/our-work/youth-entrepreneurship
5. The Young Entrepreneur Programme – which is run in secondary schools and third level institutions across Ireland. The programme has held 25 events and seen 3400 students complete an entrepreneurship course since 2007. www.youngentrepreneur.ie
6. BT Young Scientist & Technology Exhibition – Primary schools can also participate here and showcase any STEM projects for evaluation. www.btyoungscientist.ie

Second level

Students who have not taken a business studies option in Junior or Senior Cycle may receive little exposure to entrepreneurial education, apart from the Transition Year, Leaving Certificate Vocational and Leaving Certificate Applied Programmes. . There are a number of initiatives in which secondary schools students can participate but they tend to be voluntary in nature. They include:

1. Transition Year students have the opportunity to run a Get up and Go mini company to experience the operations simulated in a real firm. This is run by the Transition Year Programme under the auspices of the Professional Development Service for Teachers (PDST). In addition they can participate in RTE's Junior Dragon's Den. The Local Enterprise Offices "Student Enterprise Awards" is the biggest enterprise competition for students in Ireland. It helps students to grasp real life skills associated with running a
9. CoderDojo is another initiative that is run for students aged 7 to 17 and hosts free coding clubs with regular weekly sessions. This enables students to learn how to code, develop websites and apps etc., visit companies and hear from guest speakers. Approximately 5000 children attend 100 CoderDojos across Ireland. These skills are an essential part of any modern enterprise. www.coderdojo.com

Appendix 1

10. Gaisce Presidents award is a self-directed personal development programme in which participants are supported and mentored by a more experienced person to achieve a personal challenge over a period of time.
www.gaisce.ie
11. Young Social Innovators aims to fire young people's passion to change the world for good. This is expressed in the organisation's belief that young people are a powerful and largely untapped force for change in their local communities and in wider society. An online Social Innovation Hub (Hubsii) has been created to connect people and their ideas for social innovation. The National Careers Skills Competition, run by Careers Portal, is open to second level students who have taken part in Transition Year work experience. It asks participants to investigate closely one person with whom they have worked, describe the job-role, find out what education is required to enter it and describe the skills that they have developed during the placement.
www.youngsocialinnovators.ie
12. Careers Portal runs a Transition Year support service which includes resources to help students to prepare and get the most out of their work experience.
13. MoneySense for Schools is an Ulster Bank interactive resource for schools which shows how good money management skills help in everyday life.
www.moneysense.ulsterbank.ie/schools
3. In 2012 the Irish Research Council launched a pilot employment based postgraduate programme, at Masters and PhD level, for 30 students.
www.research.ie
4. In 2013 Science Foundation Ireland launched an industry fellowship scheme to facilitate researchers moving to industry and industry people moving into HEI's to undertake research.
www.research.ie
5. The Irish Research Council offers an Enterprise Partnership Scheme whereby a postgraduate student can undertake their PhD while spending one third of their time in a company. These strong links between industry and academia are fostering strong working relationships and increasing the direct commercialisation of research.
www.research.ie
6. Individual universities and colleges have been developing initiatives in the area of enterprise education such as having Professors of entrepreneurship, a range of subjects and courses at undergraduate and postgraduate levels, technology transfer offices in situ to facilitate the transfer into commercial ventures of research, and a range of enterprise awards available on campus.
7. The Government's Framework for Sustainable Economic Renewal (2008) committed to providing training and development to scientific and engineering doctoral programmes as part of their commitment to entrepreneurship.

Third level

1. Campus Engage National Network aims to promote innovative teaching and learning and other activities in the area of civic engagement. It seeks to support the Higher Level Institutes, their staff and students to across all disciplines, to engage with the needs of the communities they serve. Participates in the programme are supported to link with local community interest projects for mutual reward.
www.campusengage.ie
2. Accelerators in the DCU's Ryan Academy which pay students through equity investment in their businesses to develop their idea into a company over 3-6 months. **www.ryanacademy.ie/accelerators**

Further education

1. Education and Training Boards Ireland is involved in a European project, Edison, which is focused on the development of entrepreneurial skills at teacher and student level. It specifically aims to encourage students to consider what it is to be an entrepreneur, to identify their entrepreneurial skills and qualities, and to ultimately create the entrepreneurial mind-set in teachers and students in line with the Europe 2020 Strategy. The programme is broadly based on four modules: Identifying Entrepreneurial Competencies, Enhancing the Core Entrepreneurial Competencies, Develop a Cross Curricula Approach to Embedding the Entrepreneurial Concept, and Assessment and Planning for future development.
www.etbi.ie/european-links/edison

About Ibec

Ibec represents Irish business; home grown, multi-national, big and small, spanning every sector of the economy. The organisation and its sector associations, work with government and policy makers nationally and internationally, to shape business conditions and drive economic growth. It also provides a wide range of professional services direct to members.

For further information

Talent and skills are becoming more critical than ever for companies who want to compete effectively and thrive. This makes the ability of our education and training system to develop skills and nurture talent a key policy concern for business. Ibec is working on behalf of its members to provide input to national education and training policies that support economic sustainability, provide opportunities for individuals to develop their potential and support the wellbeing of society.

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