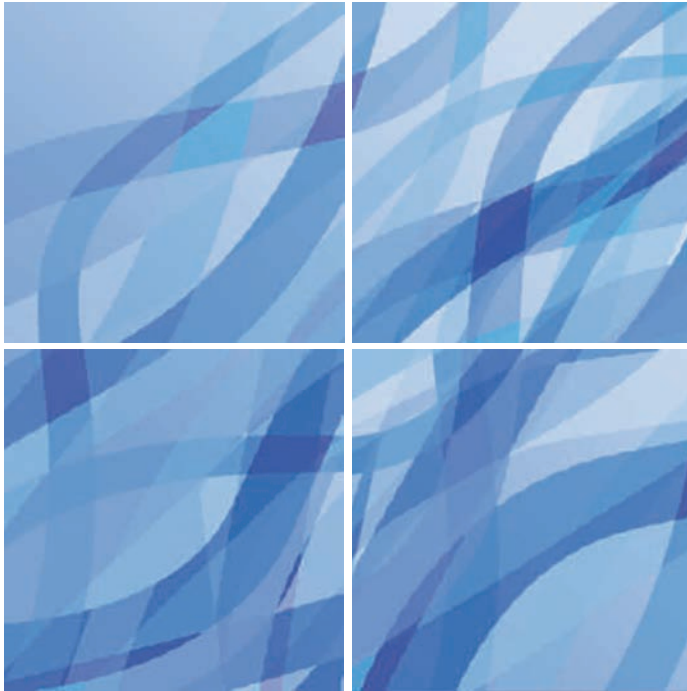


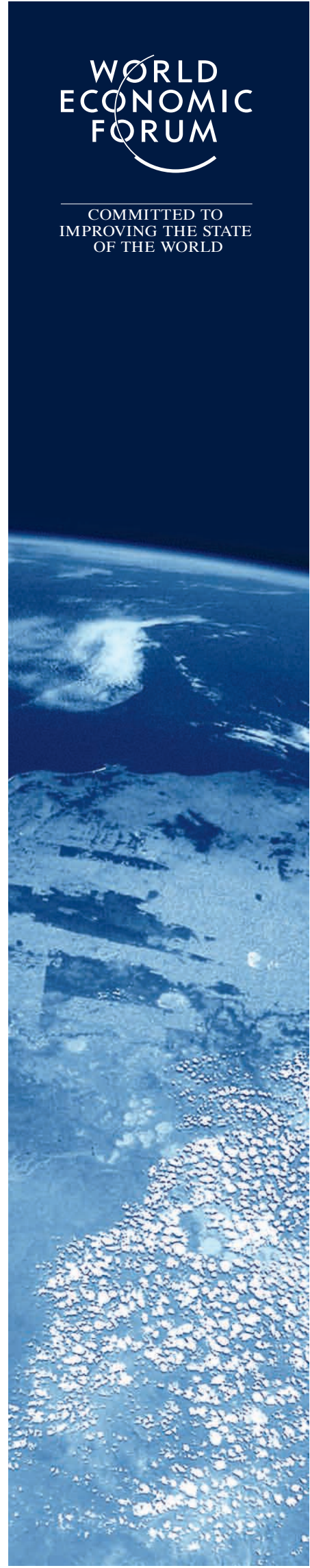
# Educating the Next Wave of Entrepreneurs

Unlocking entrepreneurial capabilities to meet the global  
challenges of the 21<sup>st</sup> Century



## Executive Summary

A Report of the Global Education Initiative



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**REF: 150409**

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The world is experiencing one of the most extraordinary periods in history. The power equation continues shifting across countries and regions, while rapid changes unfold in the market place reshaping the political landscape and the interactions between governments and businesses. The financial crisis, combined with rising inflation and the consequent slowdown in global demand, has engendered significant insecurity about the outlook of the world economy, and increased anxiety about its potential implications on the accomplishment of the Millennium Development Goals by 2015. However, it is in difficult times when the power of collaboration bears fruit, helping us better understand the challenges we face and encouraging us to unleash our imagination and capitalize on the opportunities ahead.

Entrepreneurship and education are two such extraordinary opportunities that need to be leveraged and interconnected if we are to develop the human capital required for building the societies of the future. Entrepreneurship is the engine fuelling innovation, employment generation and economic growth. Only by creating an environment where entrepreneurship can prosper and where entrepreneurs can try new ideas and empower others can we ensure that many of the world's issues will not go unaddressed. As highlighted in the inaugural 2008 Summit on the Global Agenda in Dubai, entrepreneurship is also one of the core principles of the World Economic Forum. The motto of our organization is "entrepreneurship in the global public interest", calling for entrepreneurs to put their ideas to the service of the global community.

Equally important is the power that education has in developing the skills that generate an entrepreneurial mindset and in preparing future leaders for solving more complex, interlinked and fast-changing problems. Education needs to come back to the top of the priorities of governments and the private sector and be seen as the fundamental mechanism for attaining sustainable economic development and societal progress. More than ever, the world needs effective global leaders and stronger educational systems that prepare the current and future generations of entrepreneurs, workers, teachers, managers and individuals with the skills needed to succeed and help others.

Recognizing these opportunities, the Global Education Initiative (GEI) of the World Economic Forum in the context of its mission to help create sustainable, scalable and relevant education systems through multistakeholder partnerships, has embarked on a process to advance Entrepreneurship Education as one of the key drivers of sustained social development and economic recovery. The full report consolidates existing knowledge and good practices in entrepreneurship education around three focus areas that cover the lifelong learning process of an individual: youth, higher education and social inclusion. It also outlines specific approaches that are needed for each one of these areas, as well as opportunities, challenges and practical recommendations for key stakeholders.

We thank all contributors of the full report and this summary for their thought leadership and for helping us serve once again as a platform for dialogue and reflection among governments, businesses and civil society. We specifically thank the GEI Steering Board members AMD, Cisco, Goldman Sachs, Intel and Microsoft for their leadership and stewardship of this report, and all of the GEI Steering Board members for their many years of unconditional support of the Initiative and the mission of the World Economic Forum.

Klaus Schwab  
Founder and Executive Chairman  
World Economic Forum

## Preface

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As members of the Steering Board of the Global Education Initiative (GEI), our mission is to support the efforts of the World Economic Forum to advance education globally. We strongly believe education is the engine that fuels personal development, and societal and economic progress. As such, it is a topic that demands action, not only from academia and governments, but also from the private sector, the donor community, and civil society.

Through the GEI model of multistakeholder partnerships, the Forum and its partners have mobilized more than US\$ 100 million in resource support and made an impact with more than 1.8 million teachers and students in Jordan, Egypt, Palestine, Rwanda and the State of Rajasthan in India. This approach has proven successful, and has demonstrated that it is through collaboration that we can achieve and scale the development and delivery of effective education programmes.

We also believe that entrepreneurship results in increased innovation and sustained economic growth. We see enormous potential in investing in entrepreneurship education in order to nurture talent and develop the next wave of leaders and innovators who will not only create jobs and value for society, but also empower others to create a better future.

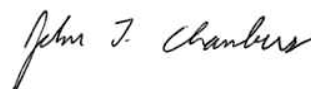
In 2008, our organizations funded a workstream within the GEI dedicated to the advancement of entrepreneurship education. Our main objectives within this workstream are to bring together different stakeholders from the public and private sectors, as well as practitioners, experts and members of academia and civil society, to share existing knowledge and good practices, raise awareness and work together to design innovative new approaches for entrepreneurship education.

We believe entrepreneurial skills, attitudes and behaviours can be learned, and that exposure to entrepreneurship education throughout an individual's lifelong learning path, starting from youth and continuing through adulthood into higher education – as well as reaching out to those economically or socially excluded – is imperative. This report addresses entrepreneurship education from this broader perspective, likely the first time it has been viewed in such a comprehensive manner.

We are pleased to present this report as a first step in gathering current evidence on entrepreneurship education. We hope it serves as a foundation for further discussion, action, and localization of recommendations in countries and regions around the world.



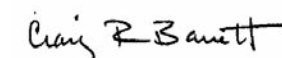
**Dirk Meyer**  
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AMD



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**Craig Mundie**  
Chief Research and Strategy Officer  
Microsoft Corporation

## Introduction

Entrepreneurship has never been more important than it is today in this time of financial crisis. At the same time, society faces massive global challenges that extend well beyond the economy. Innovation and entrepreneurship provide a way forward for solving the global challenges of the 21<sup>st</sup> century, building sustainable development, creating jobs, generating renewed economic growth and advancing human welfare.

When we speak about entrepreneurship, we are defining it in the broadest terms and in all forms – entrepreneurial people in large companies, in the public sector, in academia and, of course, those who launch and grow new companies. Now more than ever we need innovation, new solutions, creative approaches and new ways of operating. We are in uncharted territory and need people in all sectors and at all ages who can “think out of the box” to identify and pursue opportunities in new and paradigm-changing ways.

*“My greatest challenge has been to change the mindset of people. We see things the way our minds have instructed our eyes to see.”*

**Muhammad Yunus**, Managing Director, Grameen Bank

Entrepreneurship education can be a societal change agent, a great enabler in all sectors. Not everyone needs to become an entrepreneur to benefit from entrepreneurship education, but all members of society need to be more entrepreneurial. The public sector, private sector, academia and non-profit sectors all have roles to play in facilitating the development of effective ecosystems which encourage and support the creation of innovative new ventures. We need to create the types of environments that are conducive to encouraging entrepreneurial ways of thinking and behaving.

Much has been written about the impact of entrepreneurship on economic growth. If we are to attain the Millennium Development Goals of reducing poverty, we must develop human capital in all countries and societies, in remote regions as well as major cities, and in all sectors, to address both the opportunities and major challenges we face in the world. While the context

around the world varies dramatically, entrepreneurship education, in its various forms, can equip people to proactively pursue those opportunities available to them based on their local environment and culture. We have seen a number of “waves” in entrepreneurship education, starting a century ago, developing in phases and now expanding exponentially. By making entrepreneurship education available to young people and adults alike, we are preparing the next wave of entrepreneurs and entrepreneurial individuals to enable them to lead and shape our institutions, businesses and local communities.

*“What we need is an entrepreneurial society in which innovation and entrepreneurship are normal, steady and continual.”*

**Peter F. Drucker**

The time to act is now. There is tremendous movement on the entrepreneurship front in countries around the world. As evidenced by the numerous recent reports and initiatives focused on entrepreneurship education, there is also sufficient buy-in for action. While many of the reports point in common directions, most initiatives have been at the local, regional or national level. With the current momentum, now is the time to take these efforts to the next level – to move from words to action as well as to address entrepreneurship education in a comprehensive manner at the global level. The World Economic Forum’s effort in this area can be the catalyst to bring together actors who have been involved in numerous initiatives around the world, encourage a bias for action and build concrete next steps for implementation.

# Purpose of the Report

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The full report consolidates existing knowledge and practices in entrepreneurship education around the world to facilitate sharing and scaling as well as to enable the development of innovative new tools, approaches and delivery methods. It provides a landscape of entrepreneurship education practices across youth, higher education and social inclusion, providing not only examples but also recommendations across these segments as well as for various stakeholders.

The report has been developed by a core working group of authors and through consultation with the World Economic Forum's Entrepreneurship Education Technical Advisory Group (TAG) and other experts. The Steering Board of the World Economic Forum's Global Education Initiative (GEI) has played a critical role in launching, supporting and providing guidance on the project as it has evolved during the course of 2008. In addition, several of the Global Agenda Councils (GAC) of the World Economic Forum (specifically those on Technology and Education and Entrepreneurship) have highlighted the importance of entrepreneurship education.

*"Only by letting thousands and millions of entrepreneurs try new ideas, to innovate, to create businesses that put those ideas to work in a competitive and open way, only by doing those things are we going to be able to tackle some of the world's big problems".*

**Angel Cabrera**, President Thunderbird School of Global Management, Chair Global Agenda Council on Entrepreneurship

## **Why this report? Why now? More importantly, why should you read it?**

Our goal is to raise awareness about the importance of entrepreneurship education for developing the skills to solve global challenges, increase understanding about current approaches, build acceptance of entrepreneurship's rightful role in education and provide a platform for action to take the necessary next steps for mainstreaming entrepreneurship in education.

The report is geared towards high-level policy-makers and leaders from the private and academic sectors who can work together to develop high-impact solutions through multistakeholder partnerships for embedding entrepreneurship education within their countries and regions.

Entrepreneurship is a global phenomenon. The future, to an even greater degree than in the past, will be driven by innovation and entrepreneurship. It is time to more adequately develop entrepreneurial skills, attitudes and behaviours in our schools systems as well as outside formal schools systems, to reach across all ages as part of a lifelong learning process. As we have seen through initiatives such as Global Entrepreneurship Week, which took place for the first time in November 2008 and will continue on an annual basis, activities and initiatives around the world are growing rapidly.

## **If there have been so many recent reports, how does this one differ?**

**First**, in this report we use a broad definition of entrepreneurship to include the pursuit of opportunities, whether they are to create start-ups, spin-outs or entrepreneurial activities in larger organizations (private or public) or social ventures.

**Second**, this is the first time entrepreneurship education has been considered in such a systematic manner throughout the lifelong learning process of an individual – starting from youth, continuing into higher education and including informal education systems which reach out to those socially excluded. Entrepreneurship has taken many different forms in communities across the world. There have been many successful initiatives focused on enhancing entrepreneurial skills and training in developing and developed countries, as well as programmes targeted towards youth. However, as yet, there has been little attempt to draw on these findings in a systematic way to move beyond classic stereotypes and develop a wider understanding of the key issues involved in implementing entrepreneurship education in different countries and communities.

**Third**, we have attempted to address this topic on a global basis. Clearly, the full report is not meant to be a catalogue of initiatives around the world; rather, it is meant to give a flavour of the types of activities that exist and to serve as a basis for further discussion and research. The report is intended to provide the foundation and starting point for a series of further discussions and the development of locally relevant action plans in regions across the world.

## **Definitions and Views of Entrepreneurship**

A key theme surfacing throughout the development of the report is the varying views and definitions of entrepreneurship around the world.

## Purpose of the Report

In a number of countries around the world, the role of entrepreneurs is unclear and can even be viewed negatively. In some countries, entrepreneurship is not often rewarded but rather penalized. The multidimensional benefits entrepreneurship provides to society need to be illuminated.

In addition, there is a need for clarity on the definitions of entrepreneurship. There are many working definitions, but for the purposes of the report, entrepreneurship is defined as:

*“The pursuit of opportunities beyond the resources you currently control.”*

(Stevenson, 1983, 1985; Stevenson and Jarillo, 1991).

Entrepreneurship is a process that results in creativity, innovation and growth. Innovative entrepreneurs come in all shapes and forms; its benefits are not limited to start-ups, innovative ventures and new jobs. Entrepreneurship refers to an individual’s ability to turn ideas into action and is therefore a key competence for all, helping young people to be more creative and self-confident in whatever they undertake (EC, 2008).

As H.M. Queen Rania of the Hashemite Kingdom of Jordan stated at the Global Education Initiative private meeting in Davos 2007, society faces a strong need to encourage people to “practice at believing the unbelievable, using imagination, courage and tapping into the inner entrepreneur”.

There are many other words often used as substitutes for entrepreneurship including enterprise, innovation, small business, growth companies, etc. To fully capture and understand the entrepreneurship phenomenon, we need to take a broad and inclusive view; otherwise we will miss important components and trends in this rapidly growing movement.

In addition, there are many forms and meanings of the word entrepreneurship:



### Overview of Recommendations

The recommendations in the report are divided into two categories. First, there is the “Call for Action” for policymakers, with the goal of raising awareness about

the importance of entrepreneurship education and the need to address it through multistakeholder partnerships. Second, there is a menu of more specific action items in the recommendations sections for all key stakeholders, including those from the public, private, academic and non-profit sectors.

While the report lays out a variety of steps which can be taken to develop and embed entrepreneurship education in formal and informal education systems, the authors and members of the World Economic Forum’s Technical Advisory Group (TAG) for Entrepreneurship Education encourage public and private sector leaders to take a revolutionary, not an evolutionary, approach. Entrepreneurship education is needed to build entrepreneurial human capital for the society of the future. We need more to encourage a more entrepreneurial culture and develop the necessary skills, attitudes and behaviours to prepare young people and others to pursue entrepreneurial opportunities. In addition, we need more entrepreneurial institutions and societies.

The danger of not doing so is that we maintain the status quo. In this time of economic crisis, we simply cannot afford that. It is time for rethinking systems and taking bold and decisive actions that will benefit society today and in the longer term. We need to leverage the power of innovation and creativity to guide our way to a healthy and prosperous future. Entrepreneurship empowers people, in all societies and at all levels, to take their own destiny into their hands. It creates opportunities which not only contribute to economic growth, but also to personal and professional development.

## Call to Action

### Transform the Educational System

Entrepreneurship education is essential for developing the human capital necessary for the society of the future. It is not enough to add entrepreneurship on the perimeter – it needs to be core to the way education operates. Educational institutions, at all levels (primary, secondary and higher education) need to adopt 21<sup>st</sup> century methods and tools to develop the appropriate learning environment for encouraging creativity, innovation and the ability to “think out of the box” to solve problems. This requires a fundamental rethinking of educational systems, both formal and informal, as well as the way in which teachers or educators are trained, how examination systems function and the way in which rewards, recognition and incentives are given.

## Purpose of the Report

Academia needs to work with ministries of education as well as other ministries, the private sector and other stakeholders to rethink the educational systems in their country with the aim of developing entrepreneurial societies. Embedding entrepreneurship and innovation, cross-disciplinary approaches and interactive teaching methods all require new models, frameworks and paradigms. It is time to rethink the old systems and have a fundamental “rebooting” of the educational process. Incremental change in education is not adequate, especially in today’s rapidly changing society. We need schools, colleges and universities that are entrepreneurial in their approach to preparing individuals for the future.

### Build the Entrepreneurial Ecosystem

Entrepreneurship thrives in ecosystems in which multiple stakeholders play key roles (see Figure below). Academic institutions are central in shaping young people’s attitude, skills and behaviours; however, actors outside of the education systems are playing an increasingly critical role in working with formal and informal educational

programmes as well as reaching out to underserved and socially excluded targets groups. This requires collaboration and multistakeholder partnerships.

First and foremost, entrepreneurship education requires close cooperation between academia and business. Past barriers to academic collaboration with business need to be broken down and outreach both encouraged and supported. As demonstrated later in the report through the case studies, companies and entrepreneurs play instrumental roles in promoting entrepreneurial endeavours by providing knowledge, expertise, mentoring, social capital and financial support. In addition, businesses that foster an entrepreneurial culture contribute directly to the entrepreneurial education process themselves by providing employees with the opportunity to cultivate entrepreneurial skills and aptitudes at work.

Policy-makers at the international, national, regional and local levels all have important roles to play in setting the

## Entrepreneurial Ecosystem



## Purpose of the Report

appropriate legal and fiscal frameworks to encourage entrepreneurship and in filling market gaps as necessary. Higher Education Institutions have a critical role to play as intellectual hubs in entrepreneurial ecosystems by serving as an incubator for innovation and research as well as a focal point for collaboration among researchers, students, professors, companies and entrepreneurs. Foundations, NGOs and other organizations can play an important facilitation or intermediary role, often helping to link various stakeholders. Most important are the champions (often serial entrepreneurs but also educators, staff or students) who leverage their social capital and serve as catalysts for building the entrepreneurial ecosystem.

As illustrated by the World Economic Forum's Global Education Initiative, the need for multistakeholder partnerships is critical for education and even more so for entrepreneurship education. There is a need for capacity and capability building within the entrepreneurial ecosystem and this is best done through partnerships and a "portfolio" approach, not through "one off" initiatives.

### Strive for Effective Outcomes and Impact

The purpose and goals of entrepreneurship education need greater clarity. They should be based on a broadly defined set of outcomes, not only on narrow measures such as the number of start-ups created.

Entrepreneurship education is about developing attitudes, behaviours and capacities at the individual level. Inherently, it is about leadership. It is also about the application of those skills and attitudes which can take many forms during an individual's career, creating a range of long-term benefits to society and the economy.

Developing a broader framework for assessing entrepreneurship education is necessary to capture a richer and more nuanced set of outcomes. Measuring intangible outcomes is difficult; however, applying only simple measures of the potentially wrong things can result in falling far short of the intended outcomes and impact. Even worse, anecdotal stories of "best" practices could lead to the replication of programmes which actually are not working, resulting in wasted time and money for little to no impact.

To measure effectively, better data is needed. While there have been many studies and research projects on entrepreneurship, to date, there have not been enough empirical research on entrepreneurship education itself and its impact. Longitudinal studies are not easy to design and implement, but they could provide better

evidence of the impact of entrepreneurship education. Internationally comparable statistics and data collection is imperative as well.

### Leverage Technology as an Enabler

Throughout the report, the role of technology in delivering entrepreneurship education is evident, particularly in terms of creating greater access and scalability for entrepreneurship education. While the development community has struggled with the challenges of social inclusion, poverty alleviation and interventions to overcome barriers to progress, the IT and telecoms industries have entered the fray and created dramatic changes in the landscape of opportunity and social inclusion. The growth of the Internet and use of computers and mobile phones has also made a huge impact, particularly with small businesses and education.

The role of the media is also important for raising awareness and creating role models. Mass media in the form of radio and television has grown across the world, especially after satellite television. This parallel development of ICTs and media has created new infrastructure and opportunities and changed the landscape. The ICT industry has been proactive in working with users, content developers, educational institutions, policy-makers and others to frame a set of opportunities that can be disseminated to those who would benefit most from them. Those in the entrepreneurship education field tend to be early adopters in leveraging the latest technology. The full range of implications for enterprise and entrepreneurship education needs to be further developed, particularly in developing economies where scaling is critical.

*"Education is the clearest path to individual opportunity and societal growth, and entrepreneurship education is especially vital to fuelling a more robust global economy. Entrepreneurs bring new ideas to life through innovation, creativity and the desire to build something of lasting value. Therefore, we must continually foster educational cultures within our companies, governments and communities to keep the entrepreneurship pipeline filled for generations to come"*

**Dirk Meyer**, President and CEO, AMD

## Structure and Scope

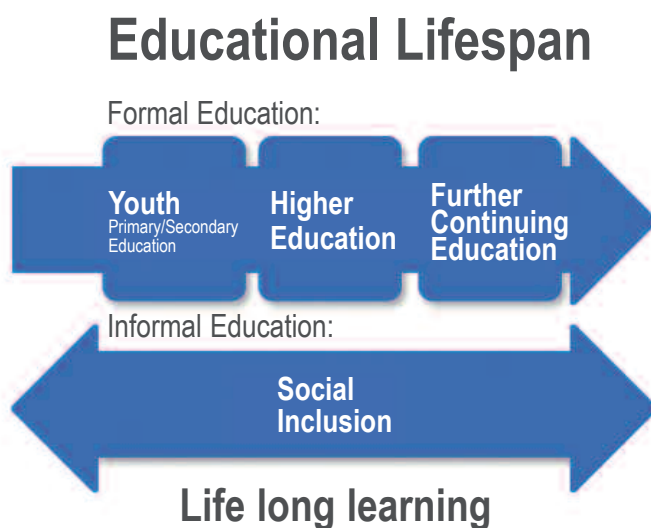
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Given the various forms of entrepreneurship both across and within regions and countries around the world, the report looks at three types of entrepreneurship: youth (with a focus on disadvantaged youth), higher education (with a focus on growth/opportunity entrepreneurship) and social inclusion, outlining the differing types of education approaches needed for each. In each of these areas, the report identifies opportunities and challenges, highlights existing entrepreneurship education tools and good practices and develops recommendations for multistakeholder support of the development and delivery of effective educational programmes for entrepreneurship.

While the first two forms of entrepreneurship education are self explanatory, the third is more complex. Entrepreneurship for Social Inclusion seeks growth by allowing more people (especially marginalized ones such as the very poor, women in many contexts, minorities, disabled and disadvantaged) to engage actively in productive economic activities.

There are commonalities about entrepreneurship education across all three of the focus areas. However, there are also distinct differences that merit this particular segmentation. It is important to look at all of these key communities to develop a comprehensive view of the landscape and recommendations for next steps. It should be noted that each of the three types of entrepreneurship exist in most countries across the world, although some are more dominant in certain regions than others. Addressing entrepreneurship education requires working with existing education systems to incorporate the necessary changes as well as launching new initiatives outside of current structures.

The purpose of the report is not to identify and highlight all practices but to provide some examples. Because the field is moving and growing extremely rapidly, it is difficult to create a “catalogue” of all practice. Nor is the report a data-driven research piece. Rather, it collects the views and examples to date on these topics to be used as a platform for further discussion.



## Key Findings of the Report

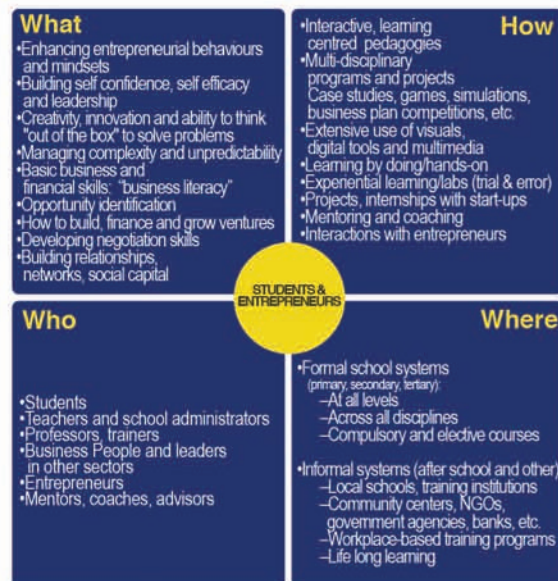
Can entrepreneurship be taught or, more importantly, learned? It's an age-old debate. It is clear that education plays an essential role in shaping attitudes, skills and culture – from the primary level up. Entrepreneurship education provides a mix of experiential learning, skill building and, most importantly, mindset shift. Certainly, the earlier and more widespread the exposure to entrepreneurship and innovation, the more likely students will become entrepreneurial, in one form or another, at some stage in their lives.

*"Most of what you hear about entrepreneurship is all wrong. It's not magic; it's not mysterious; and it has nothing to do with genes. It's a discipline and, like any discipline, it can be learned."*

**Peter F. Drucker**

The three core chapters of the report focus on different segments of the educational lifespan or system from youth to higher education to those socially excluded. Each chapter highlights opportunities, challenges and current practices. However, there are many common approaches and key success factors across the chapters.

Outlined below are some of the key areas in terms of **what, how, where** and **who** to teach entrepreneurship, to maximize the learning of the participants.



# Key Findings of the Report

## Youth



This section highlights the findings from the report chapter on Entrepreneurship Education for Youth, defined as ages 6-24.

### Context and Importance

- **Young people around the world have a right to entrepreneurship education**

Every individual has the right – as part of his or her personal understanding and exploration – to be exposed to the possibility of ownership that benefits the community and to the habits of thought that lead to socially responsible wealth creation. These rights are grounded in the individual's entitlement to the ownership of one's person, labour, time and ideas, and the individual's obligations to community and broader social goals.

- **We propose that every school system offer entrepreneurship education**

Mainstream pedagogy will have to change, leading to the hands-on, project-based, multidisciplinary approaches that entrepreneurship education requires.

- **We aim our proposals – our call to action – at senior policy-makers**

Change must occur primarily in the public systems of education and youth development. Senior policy-makers must foster the growth of an entrepreneurship ecosystem that is itself entrepreneurial, that liberates the innate creative abilities of youth and that gives everyone access to ownership.

### Existing Practices

Below are some promising practices within youth entrepreneurship education that foster and reinforce 21st-century attitudes and skills.

- **Celebrate the Entire Range of a Learner's Talent**

Entrepreneurship education celebrates each child's entire range of talents and aspirations, and does not reduce anyone simply to a grade point average or test score or intelligence quotient. Entrepreneurship education rewards the diversity of approaches that emerge from individuals working to meet the needs of others.

- **Focus on Fundamentals:**

- Joy of business, responsible wealth creation and ownership, always stressing a commitment to community and service to others.
- Market opportunity recognition and research.
- Empathy ("walk in your customer's shoes").
- Comparative advantage.
- Laws of supply and demand.
- Marginal utility ("economics of one unit").
- Return on investment and break-even calculation.
- Compound interest ("Rule of 72").

- **"See One, Do One, Teach One"**

Entrepreneurship is reflective action, so no amount of book-based learning on its own will allow the student to progress in this field. One cannot just study a chart of the dance-steps to learn a new dance. And there is no better way to confirm and demonstrate that mastery exists than to teach a skill – especially a new-won skill.

### Pedagogy

The curriculum for most successful youth entrepreneurship programmes includes many or all of the following activities, typically with clear learning objectives tied to textbook themes, usually with pre- and post-reflective sessions and evaluations, and frequently taking place outside the classroom:

- Simulations and games
- Interactive teamwork and group activities
- Direct, action-oriented market research (students need to recognize market opportunities by observing and interviewing potential customers, identifying needs in their own communities)

## Key Findings of the Report

- Student buying and selling events, using real money (grants or loans from the school or programme)
- Field trips to local businesses, especially entrepreneurial ventures
- Entrepreneurs or venture funders as guest speakers in class
- Business plan competitions, with business people as judges
- Student-run businesses, using real money (including in-school stores)

### Visualize and Plan for Business:

Students need to create and present a business plan.

### Leverage Technology/Use Multimedia:

Digital tools (including games, simulations, animation) offer particularly rich learning possibilities.

### Work Closely with Entrepreneurs:

No entrepreneurship programme can succeed without close interaction with entrepreneurs.

### Find, Train and Support the Right Teachers:

Entrepreneurship education demands an entrepreneurial teacher. Retooling for successful youth entrepreneurship education means selecting and promoting teachers who are able to engage young learners in the necessary experiential activities.

*"Preparing today's students for success and eventual leadership in the new global marketplace is the most important responsibility in education today. ... Entrepreneurship education is an important tool to achieving these objectives [and]... should be universally available to provide all students with opportunities to explore and fulfil their potential."*

**Stephanie Bell-Rose**, President, Goldman Sachs Foundation & **Thomas W. Payzant**, Harvard Graduate School of Education

## Higher Education



This section highlights the findings from the report chapter on Entrepreneurship in Higher Education.

### Context and Importance

- The demand for entrepreneurship programmes, courses and activities in higher education is increasing globally.
- Typically, skill-building courses in entrepreneurship education entail creativity, new venture creation, business idea development and opportunity recognition, business planning, leadership, entrepreneurial marketing, entrepreneurial finance and growth management as well as soft skills like negotiation or presentation competences (Solomon et al., 2002).
- Courses in innovation and innovation management are essential ingredients of an entrepreneurship programme or curriculum. Delivering innovations in the form of new products or services and building rapidly growing enterprises requires specific leadership competences and social responsibility by pioneering entrepreneurs.
- In terms of the methods, there is a need for more interactive, interdisciplinary and proactive learning approaches, with teachers acting as moderators rather than lecturers, fostering team-based, participant-centred and interactive learning.
- Information technology is a valuable enabler for developing individually tailored e-learning modules, business simulations or virtual project communities with participants from different countries or disciplinary backgrounds.

# Key Findings of the Report

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## The Entrepreneurial University

- A number of universities are striving to become “entrepreneurial universities” making entrepreneurship part of the core mission of the institution.
- For an entrepreneurial university, it is a prerequisite that cross-disciplinary, cross-campus initiatives and courses are integrated in such a way that all students can be reached and introduced to entrepreneurship.
- According to Clark (1998), the core elements of an entrepreneurial university are: a strengthened steering core with a clear vision and mission, boundary spanning structures and mechanisms to interact with the “outside” world (external stakeholders), a diversified funding base (less state funding), inter- and multidisciplinary activity and an integrated entrepreneurial culture.
- Gibb (2006) further suggests that the entrepreneurial university embeds entrepreneurial learning outcomes in the way it designs and delivers its educational opportunities that more accurately reflects the essence of an entrepreneurial culture in society. It requires a new paradigm for entrepreneurship not founded on a traditional business model that aims to develop entrepreneurial lives and careers.
- Leading entrepreneurial universities and colleges chiefly distinguish themselves from average institutions by taking on a commitment for scientific excellence as well as for maintaining academic values and following ethical guidelines (Bok, 2003). The commercialization of inventions or innovations which evolved from these institutions is then achieved on the basis of an ethical value system with an aim of creating value for society.
- These leading entrepreneurial higher education institutions differentiate themselves through a marked performance orientation as well as a clearly recognizable profile based on their scientific strengths, often leading to the commercialization of inventions and innovation.
- At the same time, experiences in many countries illustrate that there is still a considerable challenge in the process of establishing entrepreneurship education throughout the university sector (Schramm, 2006).

## Stakeholder Actions

- An extended perspective on entrepreneurship is necessary. This perspective should also address students as future opinion leaders and stakeholders of new enterprises (e.g. as investors, bankers, journalists or policy-makers).
- The introduction of entrepreneurship into national (or regional) education systems at all levels of education is critical to raise the level of knowledge about entrepreneurs within the group of future leaders.
- The integration of entrepreneurship into the curricula of all faculties is critical, as is the involvement of entrepreneurs and (local) enterprises (especially high-growth enterprises) in the design, running and promotion of these entrepreneurship courses.
- Action should be taken at all levels (national, regional and local) to improve the framework for entrepreneurial learning and activities, especially in higher education institutions and their surroundings, taking into account in each case the different, specific local conditions.
- The design of adequate framework conditions by universities and governments should not only serve to support entrepreneurship education and the recognition of credible entrepreneurial opportunities, but also to establish the further entrepreneurial “support chain” of technology commercialization and academic spin-off activity in higher education contexts.
- Governments can play a vital role in creating funding mechanisms for programmes, activities and initiatives associated with entrepreneurial education. There are many direct and indirect funding options. In addition, public authorities can support national and international entrepreneurship research and education networks to expedite their sustainability and reach.

*“An entrepreneur is a person who is willing and able to convert a new idea or invention into a successful innovation, simultaneously creating new products and business models largely responsible for the dynamism of industries and long-run economic growth.”*

**Joseph A. Schumpeter**

## Key Findings of the Report

- Entrepreneurs play an important part in the motivation of students by serving as role models. In this respect, alumni can play a key role and by engaging them, the university is also tapping into a potential source of future funding and support.
- The potential for collaboration between established companies, universities and their spin-offs should be nurtured further. In addition, private enterprises and entrepreneurs should be cultivated to finance entrepreneurship chairs, institutes and centres.
- There are many key drivers for societal change, demanding increased capability in terms of entrepreneurial human capital. The visible injustices of poverty have meant there has been a growth of social enterprise as a response to the lack of fairness in trade, access to markets, resources and opportunity.
- Much of employment in the developing world is generated by the informal sector. It is therefore important to focus on grassroots, innovation-based entrepreneurship. This has implications for the role of NGOs and curricula with respect to emergent horizontal supply chains, markets and much more (local) knowledge and innovation-based enterprises.

### Social Inclusion



This section highlights the findings from the report chapter on Entrepreneurship Education for Social Inclusion. By that, we mean those outside of the formal education and/or employment systems.

### Definition

- For the purposes of the report, social inclusion is defined as a term that applies to those people who are defined as being at the “bottom of the pyramid”, based on CK Prahalad's seminal work in mapping out the world's aspiring poor, comprising 4 billion people who are joining and actively participating in the market economy.
- We narrow this definition further for practical reasons to include: illiterate and unemployed, semi-literate and underemployed, those with secondary and university education but who remain outside formal employment, and society at large.

### Context and Importance

- The most fundamental reason for thinking about entrepreneurship at the grass roots is to find sustainable solutions to overcoming the injustices of poverty, which are evident in most countries and captured in the Millennium Development Goals of the UN.

- However, there is still much to do, and the missing piece seems to be a form of education that can be applied for self-improvement in more direct ways than current education systems provide.

### Current Approaches

- There are arguments about how and what to do at this level of society in terms of entrepreneurship education. At the same time, there have been many solutions to alleviating poverty and practical projects and programmes that go by descriptions and titles other than entrepreneurship.
- Much is being done, albeit in ad hoc projects, sometimes without the benefit of real understanding on the supply side, an apparent disconnect between policy ambitions and grassroots realities. In addition, some of the so-called education in entrepreneurship is nothing more than business planning, book keeping, regulatory compliance training or strategy-made-simple forms of training.
- Fortunately, there are highly interactive programmes that are run in many countries, which are practise based and provide for simulations and real-world experiences that can be replicated and scaled up if supply side constraints can be dealt with. Some of these programmes start at an early age, with the potential to be connected later to life-learning programmes.
- These programmes highlight the characteristics of people who are entrepreneurial in terms of behaviours, self confidence, creativity, ambition and the ability to build social capital, as well as other group cooperative behaviours that are needed to succeed.

# Key Findings of the Report

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- Highlighting these programmes can help create a clearer understanding of what constitutes entrepreneurship education for social inclusion and provide a platform for building on some of the successes that exist around the world.

## Scale and Sustainability

The deliberations that take place as a result of the report development should move towards creating a powerful commitment for entrepreneurship education that can enhance social inclusion.

If the agenda is to achieve scalability in entrepreneurship education, there is also going to be a need to increase the quantity and quality of people on the “supply” side, finding and training enough people with the skills, knowledge and practitioner experience to act as tutors/trainers and enablers of entrepreneurship education. Beyond the actual tutors, there is a need for those in the wider stakeholder community – the “ecosystem” – who also understand entrepreneurship so that their role, regulations, support and infrastructure can be more effective.

Such a grand scale also cannot be achieved on short-term, project-based funding. New models need to be found where this form of education is funded in the longer term as a discrete activity and/or as part of an integrated activity in other programmes for education, health, water, credit schemes and the like. Creative solutions that are long-term and sustainable need to be found to ensure that entrepreneurship education is available in society for a long enough period to make a difference.

The main challenge is to ensure that there is clarity about the objectives of the entrepreneurship education provision and thus to design measurements for those achievements. The challenge is to better understand what does or what does not work in terms of the efficacy of entrepreneurship education.

*Over the next five years, Goldman Sachs will support partnerships with universities and development organizations that will lead to 10,000 women receiving a business and management education. These innovative certificate programmes will help open doors for thousands of women around the globe whose financial and practical circumstances would otherwise prevent them from receiving this type of education.*

# Lessons Learned from GEI Steering Board Case Studies

As part of this project, a series of interviews was conducted with several companies serving on the Steering Board of the World Economic Forum Global Education Initiative to learn about their programmes and experiences in entrepreneurship education. The organizations interviewed included AMD, Cisco, Intel, Microsoft and the Goldman Sachs Foundation.

These organizations have launched a range of activities including organizing conferences/forums, initiating business plan competitions, developing training courses – for both entrepreneurs and faculty, creating accelerator programmes and labs and developing course materials using online tools such as videos and games.

While each company has taken various approaches to addressing entrepreneurship education, there are a number of **common elements**:

- Focusing on raising awareness, changing mindsets, developing both hard and soft skills
- Connecting business, technology and other disciplines
- Using technology as an enabler for delivering entrepreneurship education
- Building cross-border linkages

At the same time, there are many **common challenges** which were identified through the case studies:

- Changing mindsets is a long-term goal; it is difficult to “move the needle”
- Entrepreneurial attitudes vary across regions/cultures
- Need to localize content to fit the local context
- Challenge of building serious student interest in launching high growth/tech companies (depending on the region/culture)

- Necessity of building the proper internal and external systems or infrastructure to implement the programmes
- Need effective short-, medium- and long-term measures of programme outcomes
- Making sure the programmes are sustainable

There were also a number of **common lessons learned** including:

- The need to address the ecosystem/all parts of the value chain
  - Cannot be done in isolated manner – have to partner with others
- The importance of multistakeholder partnerships
  - Local, regional and national governments
  - Other companies
  - NGOs
  - Schools, universities, training centres
  - Student and entrepreneur organizations
- Need for critical mass
  - More than one-off initiatives
  - Need to scale/link programmes
- Importance of getting out there, getting feedback and then modifying approach
  - In essence, being entrepreneurs
- Activities are more powerful if they leverage the core competencies and human capital/people of firm

The full report contains the detailed case studies outlining the programmes and activities of the companies. We congratulate these companies, as well as the other GEI Steering Board members, for their significant investment in entrepreneurship education as well as their leadership in spearheading the World Economic Forum initiative in this area.

## Steering Board Case Studies

Activities:	Forums/ Events	Training/ Mentoring Students & Entrepreneurs	Training Faculty	Business Plan Competition/ Awards	Accelerator/ Incubator Programs	Centres or Labs (Physical/ Virtual)	Curriculum Content	Online Education Tools
Company:								
AMD							✓	✓
CISCO		✓	✓	✓	✓	✓	✓	✓
INTEL			✓	✓			✓	
MICROSOFT	✓	✓		✓	✓	✓	✓	
GOLDMAN SACHS	✓	✓	✓	✓			✓	✓

*Entrepreneurship Education Initiatives of GEI Steering Board Companies Interviewed*

# Overall Recommendations

The role of education in society is changing. No longer are schools and universities expected to stay within their ivory towers. New forms of education are emerging both within and outside of formal education systems. After school and community programmes, workplaces as well as TV, Internet and media are playing increasingly active and important roles. These multiple channels provide many opportunities to build effective approaches to delivering entrepreneurship education.

Below are a set of approaches which, through the work on the report, have been found to be agreed upon approaches for entrepreneurship education. In addition, key success factors and current challenges are outlined.

## Approaches

Across youth, higher education and social inclusion, there are a number approaches which are being effectively utilized and which support the call to action to “mainstream” entrepreneurship education.

### 1. Developing Leadership and Life Skills

The clear priority of entrepreneurship education is to focus on developing entrepreneurial attitudes, skills and behaviours. It is about developing the leaders for the society of the future and providing them with the life skills necessary for navigating in the rapidly changing world. Effective entrepreneurship education programmes focus on building the self confidence and self efficacy as well as developing the practical skills necessary for students to initiate and pursue ideas, and provide them with experience in building the necessary teams around them to implement projects.

Entrepreneurship education should not be limited to a focus on start-ups, which is often the case in current programmes around the world, but should be focused on shifting mindsets and develop skills which can be applied in many forms and entrepreneurial settings. Always important, but perhaps more so in today's environment, is the inclusion of ethics – helping students understand the importance of being responsible leaders.

*“Entrepreneurship in education means developing personal qualities and attitudes as well as formal knowledge and skills: Personal qualities and attitudes that increase the probability that a person will see opportunities and act upon them. Further creativity, self confidence, resourcefulness, willingness to take risks, the ability to see the consequences of one's own actions, and the willingness and ability to come up with new solutions all help to develop an entrepreneurial attitude and conduct. Such qualities and attitudes will be useful in any work situation and in society in general, and knowledge and skills related to what is required to establish a new enterprise and how and why we succeed in developing an idea into a practical and well-structured activity.”*

**Strategic Plan, Norwegian Government,  
2004 – 2008**

## APPROACHES

1. Developing Leadership and Life Skills
2. Embedding Entrepreneurship in Education
3. Taking a Cross-disciplinary Approach
4. Utilizing Interactive Pedagogy
5. Leveraging Technology

# Overall Recommendations

## 2. Embedding Entrepreneurship in Education

Access and exposure to entrepreneurship within educational systems at all levels is important as it is the outreach to target audiences outside of traditional educational systems. In both respects, the role that technology can play in delivering entrepreneurship education is essential. While most students do not start or join a new business upon graduation, many do so during later stages of their careers or will contribute as an entrepreneurial employee within an organization. Therefore, exposure to entrepreneurship as well as practical training in starting and growing companies is important.

Many recent reports support the call for making opportunities available to students at all levels and in all settings. At the same time, the level and background of the students, as well as the local context, needs to be taken into account in shaping the programmes and curricula.

Institutional culture, practice and policies often get in the way of developing an entrepreneurial spirit and environment within educational systems. Entrepreneurship champions play critical roles but there must also be a strong commitment from the school leadership. Traditionally, schools and universities have been focused on ensuring students can secure future employment. Today, both formal and informal school systems must prepare students to work in a dynamic, rapidly changing entrepreneurial and global environment. This requires a complete paradigm shift for academia, including changing the fundamentals of how schools operate and their role in society. It requires encouraging and supporting our educational institutions to become more entrepreneurial.

## 3. Taking a Cross-disciplinary Approach

The world is not divided into functional silos, so the educational process should not be either. In an increasing number of schools and universities, entrepreneurship is treated as an integral part of a multidisciplinary education process. Students are encouraged to take courses and engage in projects with students from other disciplines, enabling them to draw upon expertise from across the institution – engineering, science, design, liberal arts and business. Minimizing the institutional barriers to this cross-fertilization, these institutions can provide a more creative and innovation

learning process. There is no discipline whose students will not benefit from such an approach.

In most countries, the majority of entrepreneurship courses are offered in business schools or programmes. Entrepreneurship needs to be expanded across disciplines – particularly to the technology and science departments, where many innovative ideas and companies originate. Even on campuses with less of an interdisciplinary approach, entrepreneurship programmes are increasingly linking traditional business courses with those offered in science and technology programmes. This allows for the sharing of expertise and knowledge between the business and technical students, sparking greater innovation and facilitating technology transfer.

## 4. Utilizing Interactive Pedagogy

A greater emphasis is needed on experiential and action learning with a focus on critical thinking and problem solving. The pedagogy should be interactive, encouraging students to experiment and experience entrepreneurship through working on case studies, games, projects, simulations, real-life actions, internships with start-ups and other hands-on activities which involve interaction with entrepreneurs. Schools and training programmes provide a safe environment for encouraging students to stretch and test themselves, to experiment and develop an understanding of risk-taking and the ability to turn ideas into action. It is important that students have the opportunity to experience both successes and failures – and to learn from both experiences. Most importantly, they need to learn to try, even if they fail, and then to start over and try again.

Active and learning-by-doing methods integrate elements of practice into the learning process. This highlights the importance of actively engaging entrepreneurs and other professionals in both course design and delivery. These individuals also serve as role models, particularly if they are alumni of the school, as well as coaches and mentors. They also enhance entrepreneurial spirit within the university and create stronger links between the university and the local community.

## 5. Leveraging Technology

In today's environment, technology plays an increasingly important role in the educational process. Many leading ICT companies, including the members of the World

# Overall Recommendations

Economic Forum's Global Education Initiative Steering Board, are ahead of the curve on this trend, already working with school systems and teachers to leverage technology, both as a delivery channel and a teaching tool. For entrepreneurship education, this is particularly important. Not only can technology help reach larger audiences, including those who previously might not have had access to entrepreneurship education, but it can also help in the development of interactive and locally relevant programmes and materials.

## Key Success Factors

Across youth, higher education and social inclusion, there are a number of key success factors which enable effective entrepreneurship education.

*"Intel believes that entrepreneurship is crucial to building local innovation capacity. It brings new technologies to market, and supports economic development through building strong local and regional economies. Both the public and the private sectors have important roles to play in advancing entrepreneurship around the world, including through enabling effective entrepreneurship education."*

**Craig R. Barrett**, Chairman of the Board,  
Intel Corporation

## 1. The Entrepreneurial Ecosystem

Entrepreneurship thrives in ecosystems in which multiple stakeholders play a role in facilitating entrepreneurship. Policy-makers at the international, national, regional and local levels all have important roles to play in setting the appropriate legal and fiscal frameworks to encourage entrepreneurship and to fill market gaps as necessary.

Educational institutions, at all levels (primary, secondary and higher education) have a critical role to play in developing the appropriate learning environment, utilizing relevant learning methods and developing educators to teach using interactive pedagogies. Higher education institutions, in particular, have a critical role to play as intellectual hubs in entrepreneurial ecosystems by serving as an incubator for innovation and research as well as a focal network for collaboration among researchers, students, professors, companies, venture capital firms, angel investors and entrepreneurs.

## 2. Developing Effective Educators

Despite the rapid growth of interest in entrepreneur education, there is still a lack of critical mass of entrepreneurship educators in schools and universities across world, not to mention in the informal educational systems. The current pool of entrepreneurship teachers should be expanded. Growing the base of experienced educators not only means providing the necessary training and education, but also requires expanding the definition of educators beyond professors to include entrepreneurs, alumni, business professionals and even students. Entrepreneurs and others with entrepreneurial

**SUCCESS  
FACTORS**

1. The Entrepreneurial Ecosystem
2. Developing Effective Educators
3. Curriculum Development
4. Outreach (Engagement of Business)
5. Advancing Innovation
6. Sustainable Funding

# Overall Recommendations

experience should be allowed, encouraged and trained to teach. They not only provide great value in the classroom, but they also enhance entrepreneurial spirit within the institution overall and create stronger links with the local community and ecosystem.

Using active learning methods is more complex than traditional teaching methods. It requires engaging students' feelings and emotions in the learning process and developing the creativity, innovation and critical thinking skills of individuals. Educators/facilitators therefore must be able to create an open environment of trust in which students develop the necessary confidence to take risks by learning from trial experiences with both successes and failures. The proper incentives, assessment, rewards and recognition must be put in place to encourage educators to try these approaches.

### 3. Curriculum Development

The proliferation of entrepreneurship programmes around the world has been positive in terms of validating interest in the field, but more depth and rigor is needed to ensure that entrepreneurship courses, materials and research are of high quality. Research and curriculum development are of particular importance in helping to ensure entrepreneurship's rightful place among the academic disciplines. This requires curricula that focus on learning "for" rather than "about" entrepreneurship. Students also need to learn how to manage and grow enterprises, not just how to start them.

Entrepreneurial learning must be deeply embedded into the curriculum to ingrain a new entrepreneurial spirit and mindset among students. In many countries around the world, entrepreneurship tends to be offered in stand-alone courses rather than being integrated in the content of courses in other departments or disciplines. Entrepreneurship also remains primarily elective or extra-curricular at many schools and universities.

### 4. Outreach (Engagement of Business)

Entrepreneurship education should be very closely linked with practice. Educators should be encouraged to reach out to the business community and integrating them into the learning process. Outside speakers and case studies provide role models for students considering an entrepreneurial career path. This is an important part of creating entrepreneurial drive: if students see that people

"like themselves" were able to successfully create companies, it helps to demystify the process and make that option more feasible.

More local case studies, featuring entrepreneurs discussing their successes and failures as well as challenges they faced in the process, need to be developed and shared broadly. This is particularly important for those outside of formal education systems. More could also be done to profile these entrepreneurs in the media to create a broader exposure to such role models.

In most countries, universities are government funded and, in many cases, lack the incentives to initiate proactive outreach with the private sector. Government-funded universities tend to have very traditional structures making it more difficult to integrate new approaches. University-business collaborations are an essential element of the entrepreneurial university and are founded on mutually-beneficial relationships. This is a major policy thrust of the European Commission and is a new government approach in the United Kingdom, where university enterprise networks are being established.

### 5. Advancing Innovation

Innovation and R&D spur economic growth, competitiveness and employment, notably in high-tech, high-skilled and high-value areas of the economy. A number of institutes and universities around the world provide some of the finest engineering, technology and science training; however, the commercialization of R&D is still in its infancy. More needs to be done to encourage links between academia and the private sector, as well as the sharing of best technology transfer practices.

To foster technology transfer, scientific and technical institutes and universities should include modules on entrepreneurship; these would enhance awareness within the research community of the opportunities and modalities that exist to commercialize innovative R&D. Links with business school students and faculty as well as with the business community should also be encouraged. Venture capital firms can and are beginning to play a more important role in working with technical universities to structure and fund spin-outs. Nurturing centres of R&D excellence is important as well.

# Overall Recommendations

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This includes attracting and retaining the most talented PhDs from around the world. For any country to realize its global competitive potential, it will need to create a full ecosystem revolving around attracting and retaining the most talented researchers; encouraging links between universities and the private sector; enlarging the flow of technology transfers supported by efficient and effective intellectual property rights; and creating schemes to specifically support young innovative companies at the cutting edge of development (EVCA, 2005).

## 6. Sustainable Funding

In most countries, the bulk of the funding for schools and universities still comes from governments, although this is beginning to change as companies and foundations have begun to contribute. There are a few examples of entrepreneurs funding centres or chairs, but this is still relatively rare outside of the US. In general, most alumni around the world do not feel strong ties to their own schools and universities, which are still seen as the realm of governments. There needs to be a stronger culture of “giving back” which requires that schools track and engage alumni. Engagement of the private sectors also should be further encouraged.

It is clear that public interventions have affected the behaviour of schools, universities and educators, increasing the focus on entrepreneurship education. The field of entrepreneurship education is still relatively young and it is therefore important and necessary that this support is continued until entrepreneurship is embedded in a sustainable manner in schools and universities and supported through informal education systems. Efforts

to communicate with policy-makers about the need, benefits and possible actions to take to encourage and support entrepreneurship education should be increased. At the same time, too much start and stop financing should be avoided, and plans for making the programmes sustainable should be considered and integrated from the start. This requires a shared vision by all stakeholders of the desired outcomes at the policy level.

## Challenges

A number of challenges remain across entrepreneurship education for youth, higher education and social inclusion.

### 1. No “One Size Fits All” Answer

There is no “one size fits all” solution for entrepreneurship education. The challenges and opportunities for entrepreneurship vary dramatically in different parts of the world as well as for different segments of the educational journey. It is therefore not possible to take only one approach. Given the multi-faced nature of entrepreneurship, educational programmes must also be multi-faced. Nor is it possible to import models from other parts of the world without modification. Local context must be taken into account in devising and tailoring a set of programmes and initiatives relevant for each area. In countries, regions, cities and towns around the world in which entrepreneurship education is most prevalent, we can see that often this was the result of many different approaches and actors playing various roles, whether individually or through multistakeholder partnerships.

## CHALLENGES

1. No “One Size Fits All” Answer
2. Continuous Learning
3. Academic Acceptance/Legitimacy
4. Effective Measurement and Evaluation
5. Scalability

# Overall Recommendations

## 2. Continuous Learning

Entrepreneurial learning models, knowledge and good practice across sectors and national borders need to be better shared. There are many new models being tested around the world, both inside and outside of formal educational systems. These models need to be shared more broadly to fuel new and more effective approaches to entrepreneurship education.

Within the formal education system, more must also be done to facilitate faculty and teacher collaboration, exchanges and research across borders. While collaboration may be strong between schools within a given country, there is a large gap in cross-border activities. Currently, networks and working relationships between faculty teaching entrepreneurs are limited and there is little sharing of good practice.

Greater mobility and exchange of experience between educators is needed, not only between schools and universities but also between academia and the business world. Programmes need to be developed that allow educators to spend a significant amount of time at other institutions and/or in the private sector to truly engage, learn and grow.

## 3. Academic Acceptance/Legitimacy

Another issue is the acceptance of entrepreneurship within academia more broadly. While entrepreneurship is still not fully accepted as an academic discipline, many schools and universities have created niches in this area. A growing numbers of universities are offering “concentrations” or “majors” in entrepreneurship, many have academic entrepreneurship departments and a large percentage is offering entrepreneurship courses.

However, entrepreneurship is still trying to find its home. Faculty champions of entrepreneurship often have to fight internal battles for support and funding of their activities. Efforts are often fragmented and driven by external actors instead of by the education system itself (European Commission, 2002).

## 4. Effective Measurement and Evaluation

Greater clarity is needed regarding the purpose and goals of entrepreneurship education. These should be based on a broadly defined set of outcomes, not only on narrow measures such as the number of start-ups created. Measures need to not only cover short-term

results, but also medium- and longer-term results. It also needs to be cross-country, including as many countries and regions as possible. To date, much of the existing data is from the US and Europe, even though entrepreneurial activity could actually be higher in many other parts of the world. As each of the three main chapters cover, measurement is still one of the biggest challenges in entrepreneurship education and one we hope will be addressed as a result of the report.

## 5. Scalability

While an increasing number of entrepreneurship education programmes exist today compared to a decade ago, scalability and penetration remain key challenges. Technology provides a mechanism for reaching greater economies of scale as well as providing greater access. At the same time, given the explosion of activity in this field, educators and providers struggle to take advantage of the growing body of knowledge and experience that exists. It is not easy to find the right information at the right time about other programmes and initiatives which one might leverage and/or approach as partners. Again, technology can help provide solutions. Additionally, the system is not developmental across the key parts of education – from primary, through secondary to tertiary. This is an area which is beginning to receive attention but in which much more work is needed.

*“Every citizen, no matter where they live or what their circumstances, has an equal right to a quality education. Based on more than a decade of working with education leaders, governments, businesses and development organizations, Microsoft firmly believes that information technology can help transform both teaching and learning, enabling higher quality education experiences for everyone.”*

**Craig Mundie**, Chief Research and Strategy Officer,  
Microsoft

# Recommended Actions for Key Stakeholders

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To prepare for educating the next wave of entrepreneurs, entrepreneurial individuals and entrepreneurial organizations, actions are necessary at the international, national, regional and local levels. All sectors have a role to play. Policy-makers, academic institutions, the business community and other key stakeholders need to work together to seize this opportunity to fuel the engine of the economy's future growth and to improve social well-being by preparing young people to thrive and succeed in a globally competitive and dynamic world.

Governments should encourage and support entrepreneurship education, both in the formal school systems as well as in various informal education channels. This includes supporting programmes to train teachers and other educators (including business people and entrepreneurs) to teach entrepreneurship. As the report outlines, the teaching methods required to teach entrepreneurship effectively are dramatically different from traditional lecture-based teaching methods.

Educational institutions at all levels, primary, secondary and tertiary, need to embrace entrepreneurship education and embed it into not only the curriculum but, perhaps more importantly, into the way they operate and teach. Most school systems around the world are government owned and/or financed. Teaching materials and methods are based on tools and techniques from the last century. The entire system needs revamping or a reboot to adjust to the needs of the society of the future. Sticking to the status quo is dangerous. We need to challenge ourselves and our institutions to address the needs of the future, not those of the past.

Educators themselves need to have more mechanisms to learn and share with each other, particularly since the field of entrepreneurship is still relatively new in many educational institutions and, unlike in other disciplines like math or science, there is not a set, agreed-upon curriculum or quality standard.

Entrepreneurship education also needs to extend more effectively beyond educational systems – many effective models are being developed in foundations, community

organizations, NGOs, etc. These efforts should be supported and encouraged. The use of technology and media tools is also critical but needs to be coupled with the development of locally relevant content. The development of online educational games to engage young people in entrepreneurship is an important new and developing area.

Entrepreneurship education is not an “extra” or a “nice to have”. It is not an option. It is a necessity in today's world. We need ubiquitous entrepreneurship and innovation – it should not be limited to those who actually start companies. It needs to permeate society and our way of operating.

## Recommended Actions for Governments

It is clear that public interventions have affected the behaviour of universities and faculty, increasing the focus on entrepreneurship education. The field of entrepreneurship education is still relatively young in many parts of the world and it is therefore important and necessary that this support is continued until entrepreneurship is embedded in a sustainable manner in schools and universities. Efforts to communicate with policy-makers about the need, benefits and possible actions to take to encourage and support entrepreneurship education should be increased.

### Transform the Educational System

1. Develop ambitious national plans for entrepreneurship education at all levels: primary, secondary and higher education (example: Norway).
2. Create working groups to bring together players from different ministries which are involved in entrepreneurship education (entrepreneurship often cuts across several ministries: education, economy, research and technology, etc.) to develop coordinated solutions and approaches.
3. Encourage the creation of public or private agencies and/or foundations to support and foster entrepreneurship education.

## Recommended Actions for Key Stakeholders

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4. Work with leadership in educational institutions:
- Agree on shared outcomes, targets and measures linked to funding mechanisms

5. Reassess the rules and regulations for academia:
- Recognition and acceptance of teaching by practitioners
  - In Undergraduate education, recognize entrepreneurship as a legitimate career path
  - Creation of appropriate rewards and recognition

### **Build the Entrepreneurial Ecosystem**

1. Provide the appropriate regulatory framework for:
- Start-ups
  - Growth firms
  - Employment contracts
  - Intellectual property and transfer
  - Risk taking (bankruptcy laws)
2. Support the local physical infrastructure necessary for entrepreneurship education.
3. Ensure a consistent and adequate level of funding for entrepreneurship education programmes:
- Provide tax incentives, including those to encourage donations to universities to support entrepreneurship programmes
  - Provide resources (and seek private-sector matching) to help fund entrepreneurship teaching and research
  - Ensure that the initiatives funded are sustainable and provide the necessary funding to reach sustainability
  - Encourage the development of local angel and venture capital funds
4. Support training programmes of educators (professors, teachers, practitioners, students)
- Using interactive pedagogies
  - Developing new and relevant course materials
  - Focusing on the critical “how-to” of becoming leaders in entrepreneurship education
  - Building career development and accreditation opportunities

5. Provide support to encourage the sharing and exchange of practice:
- Facilitate the sharing of good practice across institutions and borders, both within regions and internationally
  - Create opportunities for professors and researchers from various countries to work together on projects
  - Provide support for international mobility and exchanges of educators and researchers

6. Provide support for the development of entrepreneurship course materials and case studies.

7. Encourage the development of social capital/ecosystem networks:
- Support organizations providing linkages and networking events

### **Strive for Effective Outcomes and Impact**

1. Work with academia and other stakeholders to develop appropriate measurement and evaluation of the impact of entrepreneurial institutions, not just outputs, of entrepreneurship programmes:
- Support longitudinal studies and data collection
  - Develop measures which take the specific programme goals, local market needs and context into account

### **Leverage Technology as an Enabler**

1. Support the ICT infrastructure necessary for entrepreneurship education:
- IT-broadband, telecommunications
2. Support the development of technology as both a tool and delivery method for entrepreneurship education (and education in general), not only for entrepreneurship per se, but also for leadership and personal development:
- Computers in schools and community centres
  - Development of online training materials relevant in the local context

# Recommended Actions for Key Stakeholders

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## Recommended Actions for Academic Institutions

Most initiatives are led by individual champions, whether inside or outside the academic institution, but a commitment is also needed from the highest levels of the school or university.

### Transform the Educational System

1. Engage university leaders in actions to gain their commitment to reshaping the institutional paradigm: institutional vision, policies and outcomes, structures, values and rewards.

### Build the Entrepreneurial Ecosystem

1. Encourage all faculties/disciplines to develop opportunities for students at every level to experience entrepreneurship. Integrate entrepreneurship into the curriculum and build towards a multidisciplinary learning environment:

- Increase the number of schools offering entrepreneurship courses, programmes and activities
- Augment the number entrepreneurship courses, programmes and activities and make them available to a broader group of students
- Make entrepreneurship a required course
- Integrate entrepreneurship across other disciplines
- Encourage entrepreneurship across disciplines, particularly in science and technology
- Build projects and programmes across disciplines

2. Encourage the use of interactive teaching methods:

- Promote the application of “learning by doing” through project-based learning, internships and consulting
- Leverage the uses of case studies for discussion-based learning
- Develop the proper incentives, assessment, rewards and recognition to encourage educators to try these approaches
- Involve entrepreneurs and companies in entrepreneurship courses and activities

3. Broaden and build a strong pipeline of entrepreneurship professors and teachers:

- Hire more professors and teachers fully dedicated to entrepreneurship
- Recruit professors and teachers who have entrepreneurship experience

- Support workshops and training programmes for teachers
- Provide training for entrepreneurs, business people and other practitioners to become effective educators
- Develop appropriate incentives and celebrate successes
- Review regulations on the participation of entrepreneurs, business people and others in teaching activities
- Encourage the development of specialized entrepreneurship doctoral programmes

4. Encourage the sharing of best practices among teachers and across institutions and countries.

5. Support the development course materials (books, cases, online games, videos, etc.), not only for entrepreneurship per se, but also for leadership and personal development.

6. Engage diverse body of students in existing offerings and provide support and facilities for allowing students to develop their own initiatives, whether through clubs, laboratories, etc.

7. Engage and reach out to the business community, public sector and other players in the ecosystem.

8. Encourage the engagement of alumni, entrepreneurs and other practitioners in the classroom.

9. Facilitate spin-outs from technical and scientific institutions:

- Advance core research and innovation
- Accelerate the application of science and technology to market through technology transfer offices and/or other mechanisms
- Establish stronger links between academia, business and entrepreneurs
- Facilitate the provision of direct training and/or support programmes for entrepreneurs in the process of starting companies
- Provide the appropriate training for staff, particularly in the area of technology transfer
- Ensure the time (sabbaticals, if necessary) for faculty to engage in entrepreneurial activities

# Recommended Actions for Key Stakeholders

## Strive for Effective Outcomes and Impact

1. Develop a clear framework of desired outcomes of entrepreneurship education by:
  - Developing individual capabilities, attitudes, and mindsets
  - Encouraging application of those capabilities (as evidenced through start-ups and other ventures)
  - Contributing to economy/society
2. Create effective measures and track those over the long-term to understand the impact of entrepreneurship education.
3. Ensure a consistent and adequate level of funding for entrepreneurship education programmes:
  - Provide resources (and seek public and private sector matching) to help fund entrepreneurship teaching and research
  - Provide the necessary funding to reach sustainability
  - Encourage the development of local angel and venture capital funds
4. Set high-quality standards for entrepreneurship curricula and research:
  - Encourage the development of research on entrepreneurship as well as the field of entrepreneurship education
  - Ensure research and teaching covers all of the entrepreneurial growth phases, not just the start-up phase
  - Develop high-quality local content, case studies and course materials
  - Facilitate the development of high quality, locally relevant materials
  - Create degree programmes, consistent with those at an international level
  - Promote entrepreneurship as a legitimate academic discipline

## Leverage Technology as an Enabler

1. Support the development of technology as both a tool and delivery method for entrepreneurship education (and education in general), not only for entrepreneurship per se, but also for leadership and personal development:
  - Computers in schools and community centres
  - Development of online training materials relevant to the local context

## Recommended Actions for Companies

Companies, and especially entrepreneurs, have an important role to play in developing entrepreneurship education.

### Transform the Educational System

1. Encourage governments and academia to make entrepreneurship education a key priority for the education agenda in both formal and informal education and all age levels.
2. Encourage mutually-beneficial business-university collaborations.

### Build the Entrepreneurial Ecosystem

1. Support the development of entrepreneurship within schools and universities by providing resources for professorships/chairs, educators, institutes and entrepreneurship centres.
2. Engage with academic institutions as well as other organizations providing entrepreneurship training by providing expertise, teaching and mentoring:
  - Encourage the involvement of employees (as speakers, mentors, role models)
  - Exchanges of academic and company staff
3. Participate actively in the ecosystem, providing and sharing social capital.
4. Partner with other stakeholders in the ecosystem to launch specific initiatives to develop effective programmes and processes for entrepreneurship education:
  - Forums and events
  - Training and/or mentoring entrepreneurs and students
  - Training faculty
  - Competitions and awards
  - Accelerators, incubators, labs
  - Entrepreneurship centres/institutes
  - Curriculum development
  - Online educational and training tools
  - Global exchange networks
5. Encourage programmes that target underdeveloped or underserved groups such as women, minorities, disadvantaged or disabled people.

## Recommended Actions for Key Stakeholders

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6. Share tacit knowledge/capabilities with NGOs and other organizations that support entrepreneurs. This indirectly promotes entrepreneurship education by supporting the capacity of organizations which develop entrepreneurs. In so doing, it enables such organizations to operate more effectively, thereby increasing their impact on the entrepreneurial educational process.

### Strive for Effective Outcomes and Impact

1. Work with academic institutions, governments and others to develop more effective measurement tools.
2. Provide funding for research on the field of entrepreneurship education and evaluation tools such as longitudinal studies as well as statistics.

### Leverage Technology as an Enabler

1. Provide expertise and partner with educators to develop effective online tools and materials for entrepreneurship education.

*"We are facing a transition, and we must take this opportunity to provide today's students and entrepreneurs with the tools and the thinking that is required for the future. Collaborative technologies can fundamentally transform both how we teach and learn. We need to harness the power of the Internet and these new technologies for creating and sharing knowledge that will prepare students with the skills to compete in the 21st century."*

**John T. Chambers**, Chairman and CEO, Cisco

### Recommended Actions for Other Actors

These could be foundations, NGOs, quasi government agencies, entrepreneurs, media, etc.

1. Raise awareness about entrepreneurship as well as the importance of entrepreneurship education.
2. Profile entrepreneurial role models:
  - Create more public recognition vehicles for entrepreneurs through the media, awards, etc.
  - Develop and share stories and case studies profiling successful entrepreneurs

3. Engage the media to share these stories more broadly as well as to change the mindset about entrepreneurship and entrepreneurs, particularly in countries or regions in which there are negative perceptions.

4. Leverage existing networks offering good practice in entrepreneurship education.

5. Create mechanisms for sharing practices and research not only through conferences and meetings but also through online sites or wikis which can be updated directly by those active in the field.

6. Encourage the development of innovative new tools and approaches for entrepreneurship education.

7. Develop and support programmes that target underdeveloped or underserved groups such as women, minorities, disadvantages or disabled people.

The above recommendations attempt to outline some of the actions which can be taken by various stakeholders. Champions are needed at all levels and in all sectors. Both bottom up and top down approaches are necessary for different elements of the process. No one actor in the ecosystem can address these challenges on its own. Multistakeholder partnerships are essential for building the commitment and addressing the broader set of issues which are necessary for creating and sustaining a more entrepreneurial society. Capacity building is therefore important for all players, not just entrepreneurship educators. In that regard, policy-makers, academic leaders and even the media can benefit from entrepreneurship training.

There is no "one size fits all" answer. Context matters. The challenges and opportunities for entrepreneurship vary dramatically in different parts of the world. It is therefore critical that the local context is taken into account and that the relevant local players are engaged in the process.

# Recommended Actions for Key Stakeholders

## Recommendation Matrix

Actors:	POLICY MAKERS	SCHOOLS	UNIVERSITIES	EDUCATORS	COMPANIES ENTREPRENEURS	FOUNDATIONS	NGOs	MEDIA	STUDENTS
<b>Actions:</b>	<b>TRANSFORM THE EDUCATIONAL SYSTEM</b>								
Embedded Strategy	✓	✓	✓	✓	✓	✓	✓		
Establish Coordinating Bodies	✓	✓	✓	✓	✓	✓	✓		
Embed Within Existing Bodies	✓	✓	✓		✓	✓	✓		
Change Rules and Regulations	✓	✓	✓						
	<b>BUILD THE ENTREPRENEURIAL ECOSYSTEM</b>								
Funding	✓	✓	✓		✓	✓	✓		
Infrastructure Development	✓	✓	✓	✓	✓	✓	✓		
Capacity Building	✓	✓	✓	✓	✓	✓	✓		
Support Curriculum Development	✓	✓	✓	✓	✓	✓	✓		
Build Networks/ Social Capital	✓	✓	✓	✓	✓	✓	✓		✓
Share Practices & Information	✓	✓	✓	✓	✓	✓	✓	✓	✓
Facilitate Academia- Business Outreach	✓	✓	✓	✓	✓	✓	✓		✓
Awareness Raising	✓	✓	✓	✓	✓	✓	✓	✓	✓
	<b>STRIVE FOR EFFECTIVE OUTCOMES AND IMPACT</b>								
Develop Effective Measures	✓	✓	✓	✓	✓	✓	✓		
	<b>LEVERAGE TECHNOLOGY AS AN ENABLER</b>								
Leverage Technology	✓	✓	✓	✓	✓	✓	✓	✓	✓

## Conclusions

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Entrepreneurship and entrepreneurial skills are core components to building socially inclusive and highly participatory economies in an increasingly global and competitive world. While the report highlights and raises awareness of the importance of entrepreneurship education in spurring economic growth and achieving the Millennium Development Goals, it also urges action.

The report consolidates existing knowledge and good practices in entrepreneurship education around the world to enable the sharing and development of innovative new tools, approaches and delivery methods. It also provides recommendations to governments, academia and the private sector on the development and delivery of effective education programmes for entrepreneurship. This is only the beginning – the launch of a process in which the recommendations can be discussed on the global, regional, national and local levels and implemented with the involvement of key stakeholders.

Innovation and economic growth depend on being able to produce future leaders with the skills and attitudes to be entrepreneurial in their professional lives, whether by creating their own companies or innovating in larger organizations. Entrepreneurship education is the first and arguably the most important step for embedding an innovative culture and preparing the new wave of entrepreneurs, entrepreneurial individuals and organizations.

The entrepreneurial movement is well underway. There is a high and growing level of interest in entrepreneurship from students, faculty, university administrators, employers and policy-makers, as well as an increasing number of initiatives throughout the world. The moment is right for a significant evolution of entrepreneurship education. While we can't determine today the exact nature of the next wave of entrepreneurship, we do know that it will require more creative, innovative and entrepreneurial attitudes, skills and behaviours.

The report is meant to be a catalyst and call for action on entrepreneurship education. We need to learn from models around the world and focus on integrating the most relevant and high quality practices into the context relevant for each country and region. This should be a long-term commitment, however, not one that starts and then stops a few years later. Sustainability is a key issue.

That means the objectives of entrepreneurship education should be clear from the start and outcomes should be measured to ensure that the intended results are being delivered.

The findings of the full report will be shared through the World Economic Forum regional summits and other leading international fora during the course of 2009, with the goal of deepening the findings at the regional and local levels and initiating concrete actions that can advance entrepreneurship education as a critical component for addressing the global challenges of the 21<sup>st</sup> century.

## Acknowledgements

The World Economic Forum is pleased to recognize AMD, Cisco, Goldman Sachs, Intel and Microsoft for their leadership and stewardship of this report, and all of the GEI Steering Board members for their many years of unconditional support of the Initiative and the mission of the World Economic Forum.

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Babar Kamal	Research Assistant, Partnership and Resource Mobilization Unit	United Nations Institute for Training and Research (UNITAR)

# Acknowledgements

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## Additional Acknowledgements

Arun Muthirulan		Accelerator India
*Wiki-collaborative space		
Jeroo Billimoria	Executive Director	Aflatoun, Child Social and Financial Education
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# Acknowledgements

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# Acknowledgements

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