1.D.2. The Serious Business of Play: How Gaming can Unlock Creativity and Foster Entrepreneurship

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Creativity is the cornerstone of entrepreneurship. Without a steady flow of brilliant new ideas, businesses cannot flourish or compete, and economic, social and environmental progress slows down.

Research clearly suggests that education systems across the world are failing both in terms of the feeding and nurturing of creativity in young children and later on the blossoming of entrepreneurship and innovation amongst learners in higher and further education and beyond.

Play has long been recognised as a powerful mechanism to promote creativity, encourage exploration, foster critical thinking and support collaboration. These are the skills and behaviours that underpin entrepreneurship. Led by a rapid adoption of new and existing technologies, gaming is fast becoming a global pastime to match television, viewing with mobile gaming and social gaming adding to existing console and online channels.

This paper considers how gaming is revolutionising the way we learn and explores the impact this might have on the fostering of creativity and development of entrepreneurship. We consider the serious game paradigm and provide compelling examples of what the future of learning might look like.

The Context for Creative Education

Education systems across the world are currently struggling to address a number of fundamental challenges. While the drive to provide basic education for all continues, there is an increasing focus (in all parts of the world) on the value and impact of educational experiences on individual learners. Significant evidence suggests that many education systems are failing to adequately prepare learners to be active, positive and resilient members of society. Set against a backdrop of economic crisis, mass globalisation, environmental uncertainty and societal unrest, education has a vital role to play in developing and nurturing the next generation of great thinkers, scientists, artists and leaders. The ability to be creative, to think openly, to explore, to adapt, to innovate, to collaborate – all these qualities are essential components of this next generation. Employers are particularly vocal in their identification of these qualities as being at the core of any successful business or organisation. These are the skills of the 21st century. And yet evidence suggests that education systems rarely attempt to directly teach these skills. Our over-reliance on outdated methods of teaching and obsession with testing and assessment reflects an inability to change our mindset in line with these new demands. Although we may see the value of teaching creativity, how do you test or assess this? We may understand the need for innovation but how do you teach someone to be innovative? These questions are not impossible to answer but they remain a stumbling block to learning becoming genuinely fit for purpose in the 21st century.

Not only are we failing to adequately educate these skills, evidence suggests we are actually doing the reverse. The thinker and writer Ken Robinson argues that ‘we currently educate
children out of creativity’. He also believes that creativity can be learnt (and, by extension, can be taught) and he lays out how this can happen in his 2011 book ‘Out of Our Minds: Learning to be Creative’. Furthermore, the writer Guy Claxton argues that the system of education we see in much of the world is based on a 20th century model of industrialisation and is therefore not fit for purpose when we consider the new education demands of the 21st century. Set alongside this is the emerging narrative from the world of business which reflects not only the importance of creativity (and, by extension, entrepreneurship) but also the shortfall we currently have in this regard. The 2010 IBM report Capitalising on Complexity: Insights from the Global CEO Survey argues that the prevailing context for business today is one of complexity and that the degree of complexity will only increase in future years. The report goes on to state that the single most important quality that future business leaders will need in order to deal with this complexity is creativity. Set against this, there remains significant challenges around defining creativity and, more pertinently, measuring and assessing creativity. Although we know creativity when we see it, we are still struggling to describe it in terms that are understandable and measurable.

With this in mind, we know three things:

- The teaching and learning of creativity is essential if we are to face the global challenges of the 21st century
- It is difficult but not impossible to teach (and to learn) creative skills and we can achieve this if we design and deliver education in the right way
- We are currently failing to do this so we need new approaches that help us meet the challenges of creative education and that enable us to develop the next generation of creative entrepreneurs

This paper considers the role that gaming – and specifically video gaming - might be able to play as a new approach to teaching and learning creativity. We are particularly focussed on a notion of creativity in relation to entrepreneurialism. When we talk about creativity here, we are thinking about a set of qualities that will enable individuals to behave creatively in response to economic, social and environmental challenges. We are not, here, dealing with creativity as defined in artistic terms (i.e. the education of creative talents like music and dance). We explore the opportunities and barriers inherent in using video gaming as a mechanism for learning, explore how current video games might be useful to us in this regard and propose some future steps to ensure that we get the best from this all conquering technology paradigm.

**Why should we consider video games?**

Video games are a modern phenomenon. Their reach and popularity is growing exponentially as new devices and new levels of connectivity enable players to play where they want, how they want and with whom. The numbers are quite staggering. A survey in 2010 suggested that around 72% of households in the USA regularly play video games. There are estimated to be 500 million online game players globally, a figure that is predicted to treble in the next 10 years. The recent rise of mobile gaming has created a whole new type of player. The Angry Birds game franchise has registered more than 200 million downloads making it the most downloaded game of all time. New console game releases are now outstripping feature films in terms of size of budget and revenue with the Call of Duty franchise having taken more than $4 billion in revenue globally so far. Although gaming remains hugely appealing
to children and young people, the average age of a gamer is now put at around 35 with gaming increasingly popular amongst women. New interaction devices that engage the player in a more physical experience (like the Nintendo Wii and X-Box Kinect) are drawing in different types of players who want to play socially with friends and family and want a more physical, immersive experience. The gaming industry is also looking towards new emerging markets with the imminent arrival of low energy consoles that work with the wireless phone networks to bring connecting console gaming to places like India, China and Brazil. Arguably, gaming is the world’s most popular pastime and its popularity is growing.

Video games have, for many years, formed a part of the ‘toybox’ of our free time. However, it is only recently that video games have become such a dominant global pastime. There are arguably three key factors that have led to such a profound leap in the popularity of video gaming globally. The first is the power of the technology. The achievements of big title games like Call of Duty and Halo in terms of visual rendering, gameplay, narrative and sound are nothing short of incredible, placing the player at the heart of a highly realistic cinematic world and giving them the freedom to create their own individual pathway through the game. Interaction technologies like Wii and Kinect also heralded new levels of gameplay that have transformed the perception of gaming as a solitary exercise. Secondly, the availability and ubiquity of the internet has had a significant impact on the growth of gaming. The success of online games like World of Warcraft and the Farmville/Cityville titles played through FaceBook allied to the connectivity now built into every game console allowing players to play together, live, online has created a whole new social aspect to gaming. Finally, the revolution in mobile devices is transforming gaming again, creating continuous opportunities for play for anyone with a suitably equipped mobile handset. As smart phones become more common and the wireless data infrastructure is improved, mobile will potentially grow to become the preeminent platform for gaming worldwide.

We can see clearly why gaming is now being considered so seriously as a mechanism for engagement, communication and education. We now need to understand what it is, beyond mass appeal, that makes video gaming such a potentially powerful tool when we thinking about learning creativity.

The Case for Gaming

The mass appeal of the modern video game experience has not gone unnoticed beyond the entertainment industry. The growth of ‘serious gaming’ – that is games that have a purpose beyond simply entertainment – is reaching into many areas of modern life including education, health and the environment. If you are trying to teach or communicate something, then you may have a better chance of success if you can do it with a game. But why is it, beyond its evident popularity, that gaming has assumed this significance and what are the implications for learning?

First, a good game is immersive – it engages, enchants and excites. If you want to teach or communicate something, the power to hold interest is key. The experience of playing a game – from the physical interaction through the struggle to progress to the promise of an epic win – holds the attention and keeps the player immersed. The competitive or collaborative aspect of many modern games only adds to the level of immersion. In education, where student engagement is so critical, it’s easy to see why games are now increasingly being explored as a complimentary method of teaching. If all 10 year olds could learn a new language through
the experience of playing a game, how powerful would that be? Gaming is also something that people – particularly young people – are doing already. Gamers spend hours (outside the classroom) playing complex, immersive and often demanding games. If we could convert some of that game time into learning time, we could significantly increase educational attainment for many young people.

Second, gaming technology can support us in achieving a number of educational objectives through the nature of the technology itself. Video games are typically user led (in that they allow the user to have a broadly unique experience and to operate at a level that is comfortable for them). In her recent book “Creativity and Education Futures: Learning in a digital age” Anna Craft explores the impact technology has had on learning. Within this context, she talks about the desired move towards a more learner-centric approach to education and sees this as being entirely in step with heightened use of technology. In a game, the player is master of their own universe. The ambition is that, in a classroom, the learner should be master of their universe. This notion can be further developed through the increased personalisation of a user’s game experiences. In advanced video games, the game itself can adapt to the abilities, successes and failures of the player. Gaming technology also produces data. This means that players can be tracked in terms of their progress and achievement and reports can be produced on how well the player is doing. Increasingly games are relying on data as a mechanism to engage the player more fully in their gaming experience. This data capture offers the potential for a new way of assessing learning within the context of video gaming.

Third, modern gaming technologies are increasingly accessible to those wanting to develop new games with a ‘serious’ component. Traditionally, the world of gaming has been a broadly closed shop with the market dominated by proprietary consoles where the cost of development is prohibitive to all but a minority of companies. Although there is still a market for this type of game – high end console titles with Hollywood movie budgets – new platforms are making game development a possibility for many more people, including educators. The rise of online gaming – and the imminent arrival of HTML5 – means that playing a game through a browser is now more common than ever. This means that development costs are more akin to website builds. Furthermore, the market has seen in recent years the growth of ‘off the shelf’ game engines that enable users to construct new games based on existing libraries of content and action. Finally, the emergence of mobile as a common platform for gaming has also created new opportunities for those wanting to enter the game development market. Mobile games are, typically, simpler to develop as they tend to be graphically more straightforward and have less depth to the narrative. Many of the most successful smart phone games rely on simplicity for their impact. Although the educational smart phone game is a relatively new phenomenon, it is clear that this is a market ripe for rapid expansion.

With this in mind, we can begin to see why it is that gaming offers huge potential within the education space:

- Games immerse and engage in a way that few other activities do and have particular appeal to young people
- The technology offers a user-centred experience that can be highly personalised and that can provide detailed data on the user’s progress and experience
- Game development is now within reach for many more individuals and organisations including educators
We must now consider how video games may have particular value in terms of creative learning.

**Can video games help us to be more creative?**

When we think about games and technology as tools for learning creativity, there is a broad context around play and learning to be considered. Anna Craft refers to the ‘playfulness of engagement’ citing the growth of gaming and social networking as having a profound effect on the creative possibilities of young learners. She connects the use of these technologies to what she calls ‘possibility thinking’, whereby the traditional learner’s question ‘what is this?’ alters to become ‘what might I do with this?’ She goes on to link this approach to the development of imagination and the nurturing of creativity. Within this context, she questions the banning in schools of social networking sites like FaceBook and, tellingly, the opposition of mainstream education to video games. She says that ‘it is the playful dimension of [an] exploratory drive that seems significant in 21st century childhood and youth. The contexts in which children and young people engage could be said to be highly playful ones, whether they are actually focused on gaming, social networking or making content. For at the heart of much digital experience is a playful exploration of what might be.’ From this we understand that there is, in effect, a ‘culture of play’ that goes hand in hand with ubiquitous technology and that this has significant potential as a force for creative learning.

Beyond this, it might be useful to explore a little further what it means to be creative, particularly within the context of education. Ken Robinson addresses this in his TED talk of 2010. He says that ‘if you’re not prepared to be wrong, you’ll never come up with anything original’. He is suggesting that inherent in any exploration of what it is to be creative, or (applied to a more entrepreneurial context) what is it to have great ideas that have meaning and value, is a notion that you need to be able to fail or that if you don’t know the answer, you should try something without fear of failure. The contention is that all modern education systems penalise failure and prize, above all else, the ‘right answer’. Conversely, gaming is inherently about failure and offers a risk-free environment within which the player can imagine and ‘problem find’. It is estimated that, in gaming, there is typically a 90% failure rate in actions and consequences meaning that only 10% of the decisions made within a game result in what might palpably be described as ‘success’. Failure is part of the fun, it’s part of the process of exploration, it’s a way that the game becomes compelling. The game developer Jane McGonigal from the Institute for the Future expands on this idea. Driven by what she describes as the ‘opportunity for an epic win’, she suggests that games provide the player with the confidence and incentive to try something out and challenge themselves without fear in a way that they would never do in the real world. The spirit of exploration so evident within game worlds does not, in itself, foster creativity. However, we can see that by allowing players to take a step into the unknown and by encouraging them to explore avenues without knowing where they lead, we are beginning to move closer to Ken Robinson’s concept of an environment more conducive to creative thinking. Furthermore, any creative process must, on some level, be active rather than passive. Games and game worlds offer players the ability to experience something first hand, to take control, to make decisions, to ‘do’ rather than to ‘observe’. This active learning is critical when we start to employ games within any educational approach.
There is another aspect to gaming that suggests it might provide a compelling solution to the challenge of fostering creativity. In recent years, we have seen a marked shift in the dynamics of gaming from a situation where the majority of gamers were focussed on a solo win to one now where the majority are concerned with collaborative victory. The social aspects of gaming have revolutionised the way games are being developed and played. The opportunity to solve a problem or reach an epic win by working in a team has proved to be more compelling than the desire to succeed alone. This is evidenced by the success of online games like World of Warcraft and the popularity of the live online gaming element of modern game consoles. Set within a context of learning creativity, we can see how valuable this might be. Collaborative games offer a cast of many characters who are willing to trust you, support you and work with you to reach a common goal. They foster skills of communication, leadership and teamwork, all of which are vital within the creative process. There are gamers playing right now who are collaborating, trying out new ideas, exploring new pathways, all with the aim of reaching that epic win. That spirit of collaboration offers us further evidence of how video games could offer a solution for creativity education.

Being a creative entrepreneur is about more than simply coming up with a brilliant idea and then making it happen. There are a broad set of supporting competencies or qualities that we need in order to operate in a creative way. Alongside the ability to collaborate, to communicate and to lead (all of which are mentioned previously) we also need the ability to empathise and to think and see from different perspectives. Again, this is where gaming may be useful. The pioneering video game designer Will Wright explores this in detail and suggests that the principle value of games is the facility they have for putting us into the shoes of others. He argues that the capacity for changing perspective is one of the most potent tools a game designer can employ.

When we consider whether video games can help us be more creative, what we can clearly see is that there are some characteristics inherent in most video games that potentially lend themselves to the fostering or teaching of creative skills. That games give us the ability to try and fail, that they demand we collaborate to succeed and that they require us to see the world from a different perspective all hint at the value video games may have in educating creativity.

**Games for Creativity and Entrepreneurship: Where are we now?**

We have so far established both the need for new approaches to learning creative skills and the potential applicability of video games to meet this need. We can now consider the extent to which both ‘serious’ and ‘entertainment’ games currently harness the power of gaming to this end.

In considering the current market for video games that have relevance to the idea of teaching creativity, there are a number of different game types we might consider each with their own potential and limitations. First, we consider business/entrepreneurship simulations. The idea of a business simulation game has been around for many years. In recent years, many attempts have been made to create a wholly digitised version of a ‘case-study’ approach to business education. There are many examples of such games including Business Tycoon Online, Virtonomics and Blossom. Most operate on the same basis – you assume the role of an entrepreneur, set up a business, grow the business and become a successful entrepreneur. There are challenges with this type of game. Often they are based on a rather narrow notion of ‘success’ as being related to business growth and the acquisition of wealth and status.
These games are also typically rather didactic in the way in which they frame the entrepreneurial challenges. That said, a game like Blossom (which offers the player the chance to save, manage and develop a flower business) provides entrepreneurship education to underserved populations worldwide. Although similar in nature to other business/entrepreneurship simulations, it is being made available to people who would not normally be able to access this kind of experience and has been designed to engage young people who may want to explore their inner entrepreneur but will have little or no chance of doing that within their local environment. Although limited, this kind of business simulation game can give individuals a ‘feel’ for what it’s like to be an entrepreneur and that, in itself, is of value. In most cases however these games fall short of offering any kind of genuinely ‘creative’ learning experience as the pathways through the simulation are pre-defined and there is little scope for original thinking.

The distinction between ‘simulation’ and ‘game’ is often ill defined. In health games, we often see highly literal simulations that help players experience a particular procedure virtually before they practice it on a live patient. These types of games represent one end of the simulation spectrum. At the other end, we have what we might call ‘scenario-based problem solving games’ that present a particular scenario and then invite the players, either individually or collaboratively, to solve the challenges set. Through this action, they learn both factual information about the challenge itself and skills around creative thinking, collaboration and leadership. This type of experience can be seen in practice in the game ‘World Without Oil’ (WWO). WWO is described as a "what if?" game. The game asked what would happen in the event of an oil crisis. How would the lives of ordinary people change? First players were required to read official news about the oil crisis and consider what other players were saying. Then they fed in their own stories of how a shortfall of oil was affecting their own lives, and what they were doing to cope. As the crisis continued, they continued to feed in thoughts, reactions and solutions. The game encouraged submissions via blogs, videos, images, emails and voicemails. Over 1900 people signed up as players of World Without Oil, generating over 1500 stories from inside the "global oil crisis of 2007." These stories and the reactions to them created a rich, complex, and plausible collective imagining of an oil crisis and stimulated a range of creative responses in terms of how such a crisis could both be managed and avoided. For players and observers, the experience created a compelling narrative around oil dependency and energy policy. The game made the issues real, and this in turn led to real engagement and real change in people's lives. What we learn from WWO is that games can create a compelling context for engagement, for learning and for grappling with real world problems. Games can enable us to assume responsibility for things we would normally be only passive observers of and, in so doing, can generate new thinking and new approaches. The particular power of an online game like WWO is that it can connect stories together and offer a context for data gathering thereby creating tangible, relevant outputs.

If we consider creativity in relation to gaming, it may also be useful to look beyond the serious game paradigm and into the entertainment game world for inspiration. When we think about the concept of collaborative problem solving, the dynamics of the online multiplayer role-playing game World of Warcraft are instructive. The game has more than 10 million subscribers and enables individual players to work together towards the successful completion of ‘quests’. The game invites players to assume a role within an imaginary world populated by other players and by ‘non-player characters’. They interact with the landscape, fight monsters and complete quests. Although the game can be played solo, players can also join groups in order to tackle more challenging content. In fact, the majority of end-game
challenges are designed in a way that they can only be overcome through collaboration. Interaction with other players also happens within ‘guilds’ whereby knowledge and experience gathered can be shared with others in your guild. Through the game, your unique story develops, you gain skills and talents that enable you to complete more complex challenges and you build relationships with other players. We can see how a game like World of Warcraft engenders many of the skills that we associate with creativity and entrepreneurship: positive collaboration; collective problem solving; explorations into the unknown. Although not explicitly an ‘creative game’ World of Warcraft may represent one of the most creative experiences within the game world.

A survey of current game titles from across the gaming spectrum would suggest that there are many ways in which video games are engaging players in what we might describe as a ‘creative experience’. There are also numerous attempts to recreate the experience of being entrepreneurial through simulations. It is difficult to measure the impact of these experiences and it may be that the serious game market is, in fact, less adept at creating compelling collaborative problem solving environments than the entertainment gaming industry. If this is the case, the challenge here is that entertainment games are often not seen as educational and therefore are not integrated into mainstream educational practices and not evaluated in terms of their educational impact. Conversely, serious educational games are gaining traction in the classroom but may lack the impact of their ‘less serious’ cousins. In the next section, we consider some of the other barriers inherent in developing or using video games as a mechanism for learning creativity.

But the Problem with Games is...

There are undoubtedly myriad challenges when we consider the role of video games in education and skills development. These can be divided into three principle areas: cultural, practical and pedagogical.

Culturally, there are significant challenges for educators and, where children are concerned, parents. In spite of the many advances in game play experience, interaction and engagement, video games are still seen by many as being a negative influence on the creative and cognitive abilities of those who play them. There are significant concerns around the amount of ‘screen time’ children are exposed to and parents, therefore, need to be convinced of the value of exposing their children to further digital engagement. Teachers are broadly polarised into two groups around this issue: there are those who embrace the idea of technology and gaming as a tool for learning and those who feel the pedagogical arguments are yet to be won (more of which later) and also that gaming is a genre of experience they are rather too unfamiliar with to be placing it in the classroom and in the hands of their more technology-savvy students. This kind of cultural opposition will only be challenged with the advent of better educational games that are demonstrably helping with learning.

The practical barriers are, perhaps, more straightforward. First, there are many people looking towards gaming as a way of engaging and educating whilst, simultaneously, losing their focus on the game itself. It’s not easy – or indeed cheap – to develop a great game and the move towards cheaper game development (and the consequent expansion in the number of games produced) has not always been matched by quality. The Games For Learning Institute in New York has recognised this problem and, in response, has developed what they call ‘design patterns’ that help in the development of learning games; they are not rigid
constraints but are a set of principles within which there is significant scope for localisation and interpretation. Beyond the practical challenges of building effective and immersive games for learning, there are also challenges around their use within formal educational settings. It can often be difficult to connect games in a meaningful way to a curriculum-based approach to learning. This makes the time commitment needed to use games in the classroom more difficult to justify. There might also be practical problems around the availability of appropriate technology (pcs; mobile handsets etc.) and the timeframe within which a game might be played. In short, education systems are not designed and built with gaming in mind. Although there is evidence that this is changing, there is still some distance left to travel.

The pedagogical barriers to the adoption of video games as a tool for learning are, perhaps, the most profound. In short, there is not enough evidence that demonstrates the effectiveness of video games within an educational context. Many still question the transferability of learning – when we play a video game, particularly one that is ostensibly ‘educational’, do we simply play for fun without directly absorbing the educational aspects of the experience? If we consider the case study of World of Warcraft, which seems to demonstrate many of the attributes of a game that might be supportive of creative collaboration, it would certainly be contentious to suggest that WOW players are, as a result of their experiences within the game, more creative, better problem solvers and more collaborative in the ‘real world’. Conversely, in serious games, the ‘game’ part is too often swallowed up by the ‘serious’ part, to a point where no game is evident at all. This defeats the point of using a gaming approach in the first place.

As we can see, the barriers to using gaming within an educational context are myriad. That said, all can be overcome through more rigorous research, better communication around value and, fundamentally, through the development of better games for learning.

The Future for Games and Creative Learning

In Ken Robinson’s book ‘Out of Our Minds: Learning to be Creative’, he states that ‘Creative environments give people time to experiment, to fail, to try again, to ask questions, to discover, to play, to make connections among the seemingly disparate elements. This experimentation or research may not lead to an artistic product or scientific application for many years, as all original ideas and products spring from an initial period of experimentation or fooling around. This may sometimes seem purposeless but it is the essence of the creative process.’ When we consider the fundamental nature of playing a video game, there are striking parallels with the ‘creative environment’ Robinson defines. Robinson also talks about the ‘remarkably powerful creative synergy [that] arises when people of different backgrounds and skills work together’. The increasingly collaborative nature of video games augmented by globally hyper-connected communities of players further supports the contention that video games vast potential in terms of helping individuals learn to be more creative and to become entrepreneurial.

The popularity of games allied to the growth in, and diversity of, devices, platforms and business models means that the structure is there for gaming to be more embedded in the lives of people across the world. In many developed cultures, gaming is already a major part of day to day life. The platform exists. We do not have to convince people to ‘buy in’ to the idea of playing video games. However, more work needs to be done. If games are to be more than merely entertainment, we need to address some fundamental issues:
- We need better ways of understanding how effective games are at helping people learn
- We need better models of embedding learning into games
- We need to prove more definitively that games can really work as a tool for learning
- We need smarter games that have creativity at their heart

Critically, we need to understand how we take what people experience in games and turn those experiences into skills that can be applied in the real world. We also need to connect what happens in games more closely to what’s being taught in schools.

The potential is there – we have the technology, we know what engages people, we understand how to build great games, we now have to collaborate to start building creative learning games that really work.

About the Authors

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Jim is a highly creative researcher, writer, consultation expert and entrepreneur. As co-founder and Managing Director of White Loop, he runs the company's research output as well as leading on all major creative activities.

He has particular expertise in 21st century skills, TVET strategy, global education trends, technology-enhanced learning and digital strategy. Jim brings his passion for creativity & belief in the power of education to every project. Jim has extensive experience in stakeholder engagement, primary research and market analysis, with over ten years experience producing compelling and accessible reports and papers. He is also highly experienced in the use of technology as both a tool for engagement and a mechanism to generate value and meaning from research outputs.

In 2010, he was invited to join the board of the Business Leadership Review, an online publication run by the Association of MBA's in London, and is a regular contributor. In 2011, he co-founded Stealth Education, a technology incubator that develops learning technologies and serious games. He is also founder and Chief Executive of The Creative Network, a not-for-profit organisation established in 2008 and focused on bringing together creative entrepreneurs to generate ideas for positive social change.

Ross Hall

Ross joined Pearson in December 2006, from a background in corporate venturing.

He has been responsible for establishing and growing more than 20 businesses around the world, in a wide range of market sectors including education, human resources, logistics, media and healthcare. Ross also has a track record of advising organisations on innovation for growth and using innovation as a vehicle for social and economic development.
At Pearson, he is driving a company-wide agenda that aims to define and implement novel education solutions that result in economic and social development outcomes for disadvantaged communities - giving learners improved employment opportunities and life chances, binding communities together, helping education institutions deliver world-class service and benefiting employers by addressing skills gaps.

Key to Ross’s impact at Pearson is his authorship of Effective Education for Employment - an important research project - and the accompanying Blueprint for Effective Education – a consulting method that is now being used to evaluate and transform education systems and institutions around the world.

To complement this work, Ross has also spearheaded the development of several new groundbreaking services including a consultancy service, a Quality Assurance service, and a suite of new employability qualifications that embrace 21st century skills.