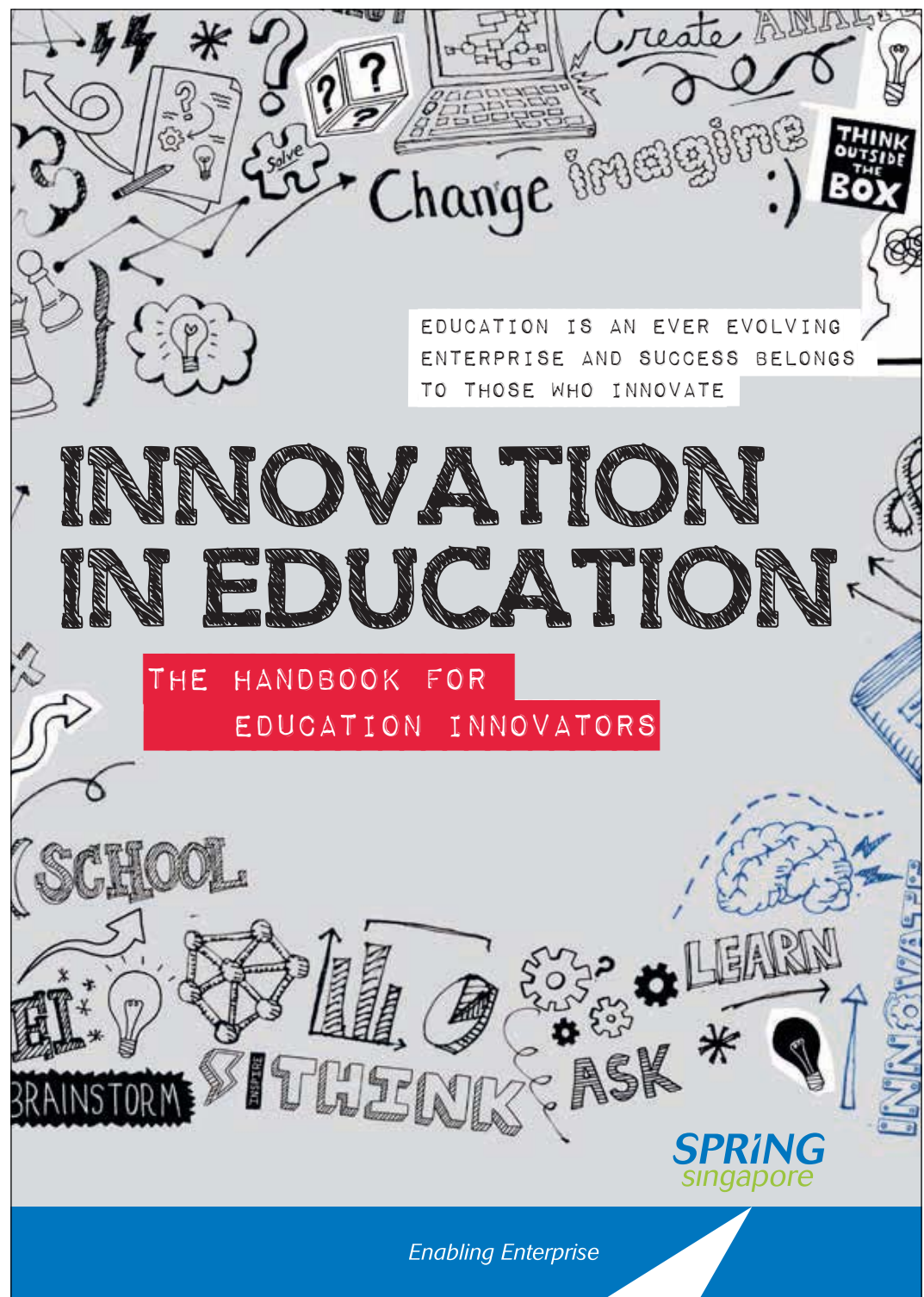


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*Are you striving to create new value propositions, while coping with day-to-day fire fighting?*

☐ YES ☐ NO

*Are you constantly thinking about how to export your IP internationally, by inventing new products and services and forming partnership models?*

☐ YES ☐ NO

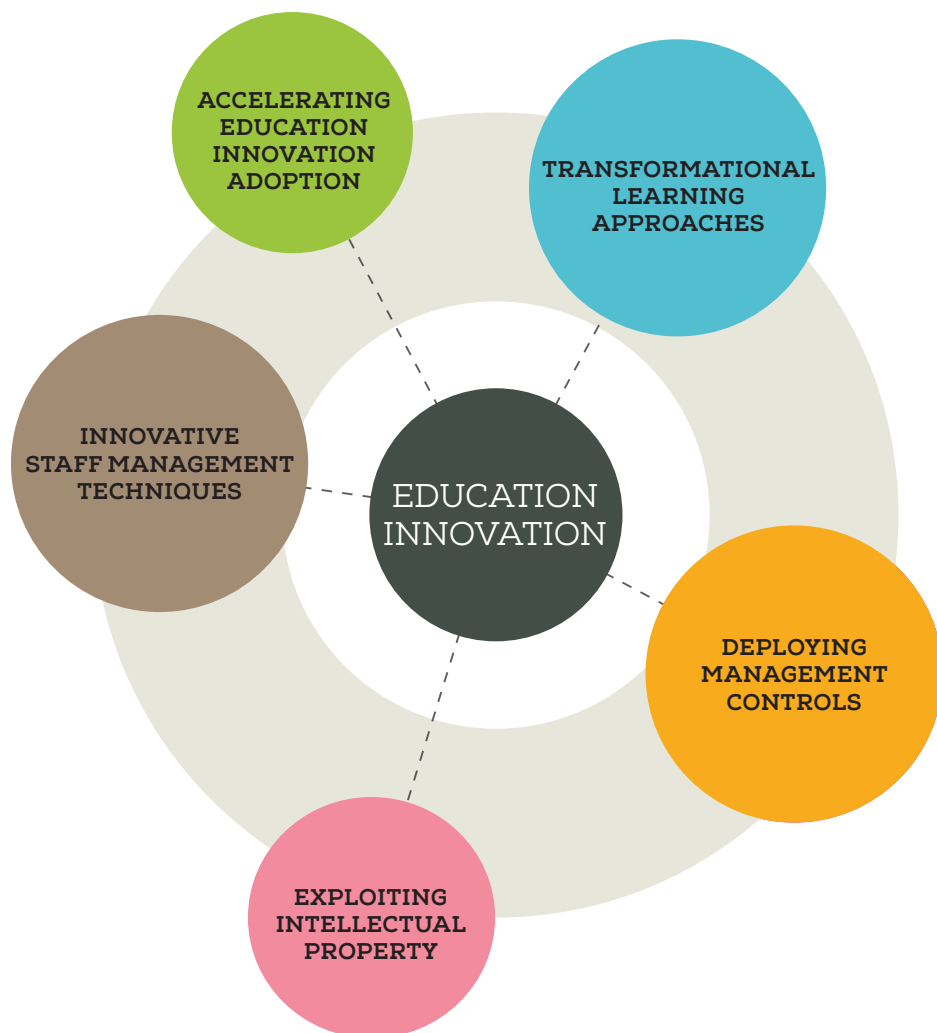
*Are you trying to find innovative systems and practices, to attract staff and motivate desirable teacher competencies and behaviours?*

☐ YES ☐ NO

IF YOU'VE ANSWERED "YES"  
TO ANY OF THESE QUESTIONS,  
**YOU HAVE THE  
RIGHT BOOK!**

*You're holding a handbook for innovators, game changers, and trend-setters that will not stick to the status quo, but strive to level-up their game by augmenting products, services, business models, as well as operating systems and management techniques.*

*This is a book for Education Innovators.*



## LET'S GET STARTED



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# EMBARKING ON THE EDUCATION INNOVATION JOURNEY



## Innovating for Growth in the Education Sector

Singapore's education system is well-respected globally for its high levels of academic achievement. Private education institutions in Singapore, being nimble and market-oriented, are therefore presented with many opportunities for innovation and growth.

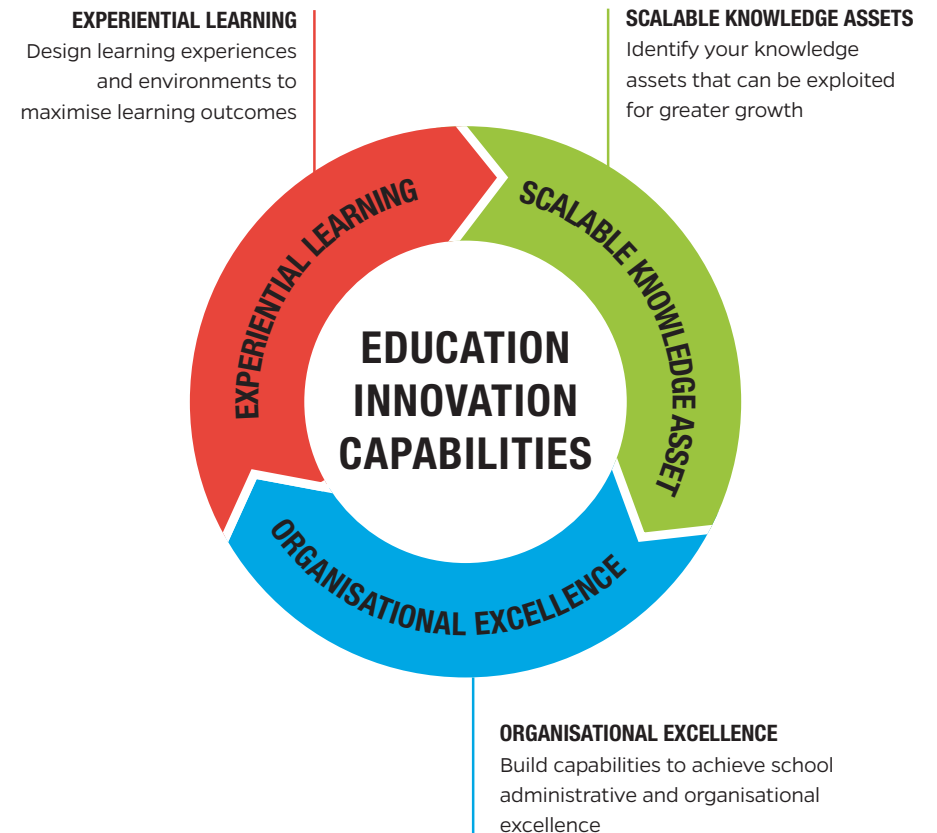
Asia is expected to occupy 76 percent of the global demand for international higher education in English-speaking destination countries, doubling from 943,000 students in 2010 to almost 1.9 million students in 2020. Continuing education in Singapore is expected to triple from 80,000 training places in 2010, to 250,000 in 2015.

Local private education institutions however face rising competition from developed countries such as Australia, the UK, and the US. With changing patterns of learning among the workforce, organisations dealing with higher education and corporate training also need to adopt more flexible modes of curriculum delivery.

As a result, private education institutions in Singapore need to know how to introduce fresh curriculum, pedagogies, technologies, organisational or operational approaches that can be customised to their unique contexts, implemented correctly, and linked to their strategies for differentiation and sustained growth.

As such, SPRING Singapore launched the Education Innovation (EI) Initiative to support local education SMEs in their innovation journey. It encourages private education and training SMEs to leverage innovation for growth by developing capabilities in Experiential Learning, Scalable Knowledge Assets, and Organisational Excellence.

The Education Innovation initiative is a holistic effort to encourage private education SMEs in Singapore to leverage innovation for the next stage of growth through:



# ENABLING INNOVATION AMONG LOCAL EDUCATION SMES

The appointed consultant, Eden Strategy Institute, conducted an extensive quantitative survey, several focus groups, and in-depth discussions with over 30 private education providers in Singapore. Five specific key innovation aspirations faced by education and training companies in Singapore were identified:

- 1 Private education providers are keen to learn about transformational learning approaches that motivate students for real learning.
- 2 Education companies in Singapore strive to exploit their intellectual property into new products, promote new propositions, and grow premium revenue streams at minimal risk.
- 3 Schools seek to develop innovative staff attraction, selection, training, performance management, and retention cultures and strategies.
- 4 Schools face challenges deploying management controls.
- 5 The private education sector lacks methods to accelerating EI adoption.

## The EI Study

An EI Study was commissioned by SPRING Singapore to introduce local companies to good practice organisations around the world which have successfully used EI to transform their programmes, processes, and people, so as to augment learning outcomes, develop more industry-relevant programmes, and increase operational efficiency.

The case studies which you will read about were selected based on the aspirations and problem statements defined by local private education and training SMEs. Following a broad global scouting of hundreds of Education Innovations around the world, 21 good practice education institutions in the US and the UK were identified for detailed study. The authors conducted face-to-face, in-depth senior management interviews, data analysis, classroom observations, and ethnography with these organisations between February and June 2013.

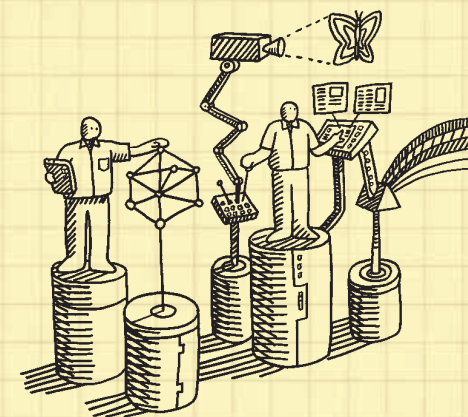
The case studies detail their context, challenges, innovation journeys, and the impact of the initiatives launched.

# FINDINGS OF THE EDUCATION INNOVATION STUDY

Each education segment had a set of challenges unique to them which they addressed through various measures.

## EARLY CHILDHOOD & ENRICHMENT

Early Childhood & Enrichment schools needed to better support teachers' capability and capacity, by helping them adopt new teaching or administrative approaches. They also needed to take care of teachers' emotional needs and help them better connect with their students. This study discovered that schools had addressed these challenges by improving classroom management techniques as well as physical designs of learning and social spaces, to create a healthy learning environment and inculcate healthy social norms between teachers and young learners. They also emphasised on selecting and investing in teachers who have the bandwidth and competency to manage and deliver flexible learning approaches - which are more uncertain and stressful, but more engaging and effective - to provide quality lessons.



## HIGHER EDUCATION

In the Higher Education segment, key challenges were found in motivating students, helping them achieve career readiness, and reducing cost. U.S. and U.K. institutions tackled these issues by emphasising on inspiring students to motivate them to learn through mentorship programmes, practical skills training, and working with alumni to help students achieve specific job objectives. The segment has also leveraged technology to make learning more engaging, while enhancing productivity - both in terms of reducing schools' operating costs and optimising the time spent by students.



Interestingly, many of the organisations studied also shared common experiences along their journeys.

### ADULT LEARNING & CORPORATE TRAINING

Adult Learning & Corporate Training organisations needed to cater to the changing requirements of employees and employers while balancing the costs of customisation, and helping adults learn effectively despite increasing constraints. The research had revealed that many corporate training companies sought to accurately address specific training needs of each company, by empowering “dedicated” account managers, who work closely with the senior management, to tailor courses according to the needs of each company. Training organisations also focused on retaining these managers, as their strong knowledge and relationships are essential to provide effective programmes. In addition, they instilled systems and methodologies to effectively and efficiently customise corporate programmes while maintaining consistency and standards.

### EDUCATION INNOVATIONS ARE SELDOM STANDALONE

Leading schools first established their operating context – their communities and stakeholders, challenges faced by their students and teachers, as well as their aspirations and competencies – before considering investing in a combination of EIs as a means to attain their strategic objectives.

### SOCIAL SKILLS ARE AS IMPORTANT AS ACADEMIC IMPROVEMENT

Rather than jump into evaluating any particular EI, it is useful to first help students feel safe, accepted, and equipped with the social and verbal tools to express themselves, before they experience a conducive environment to learn. Acceptable social norms and behaviours can be achieved by identifying root cause challenges at home or in the community; establishing a climate of trust; building self-esteem; and inspiring both students and teachers.

### LEARNING IS BECOMING INCREASINGLY PERSONALISED

Standardisation is important to ensure quality in public school systems, but it can also impede student passion and creativity. Leading schools have introduced differentiated learning experiences for students. Adaptive learning systems are now able to optimise learning by delivering content in different formats based on preferred student modalities. Online learning offers opportunities for students to learn a wide range of skills, at their own pace, at their location of choice, and at great cost savings.

### ACTIVE LEARNING CAN SUPPORT INTELLECTUAL STIMULATION AND RIGOR

Many innovative schools are also departing from the traditional lecture format and stimulating students by incorporating breakout sessions into lesson plans for students to work independently or in groups, animating and gamifying complex concepts, and enabling students to become content creators across disciplines. Feedback mechanisms and teacher support groups help to ensure academic rigour. Finally, schools are increasingly deliberate in incorporating ergonomic factors and

collaborative spaces into their facility design to optimise their learning environments.

### SUCCESSFUL ORGANISATIONS FOCUS ON CAREER DEVELOPMENT FOR BOTH STUDENTS AND STAFF

Students ultimately use their learning to gain employment. Schools and universities can provide better practical skills using continuous learning and partnering companies to facilitate internships and recruitment. Rigorous hiring, skill enhancement, and career development programmes also help to attract and retain high quality staff in schools.

### THOUGHTFUL EI IMPLEMENTATION LEADS TO FINANCIAL RETURNS

Surprisingly, the costs of investing in proven EIs have not been prohibitive for many of the organisations studied. Many new technologies are available at low costs, and most organisations have been able to introduce them while keeping within normal operating budgets. Leading schools have been diligent in carefully evaluating and championing each EI, and some process improvement innovations are even shown to reduce costs successfully.



*The fact is that given the challenges we face, education doesn't need to be reformed - it needs to be transformed.*

**Sir Ken Robinson**

KEY INNOVATION ASPIRATIONS #1

# TRANSFORMATIONAL LEARNING APPROACHES

NEW YORK PRE-SCHOOL

## INTRODUCING SELF-DEFINED LEARNING IN EARLY CHILDHOOD

*A private pre-school in New York uses the interests of students to define curriculum and activities to motivate early education learning*



This private nursery school, which has requested to remain anonymous, has a rich history spanning over four decades back, and is one of the most premium pre-schools in the United States. It offers programmes for three-year-olds through kindergarten years, and enrolls 150 children per year.

### Maximise engagement with young learners

The school principal, who has over 40 years of experience in education, was aware that the pace of development among young children is vastly different. As such, a pre-defined curriculum is unable to address their needs.

Preschools therefore need to create interesting topics to effectively capture children's attention to optimise learning outcomes. It is hence important to satiate student curiosity by teaching concepts using contexts that they can relate to.



### Applying different contexts to the same content for Self-Defined Learning

The school uses the Emergent Learning approach pioneered by the schools in Reggio Emilia, Italy. In this pedagogy, the teacher gauges the topics that should be taught by listening closely to student conversations. Skills and concepts such as journal writing, storytelling, colours, and art are weaved into the chosen context that the children are keen to learn about, whether they are cars, houses, animals, or dinosaurs.

The teachers have the autonomy to decide if the activities should be outdoors or indoors. They can also tap external resources such as parents and the community. For instance, one of the sections at the school was interested in learning more about houses.







So the teachers invited construction experts to teach structural models, parents to talk about interior design, and planned an activity to decorate the house.

Since the teachers are quintessential to a “truly emergent” curriculum, the school has paid special attention to hiring and training qualified teachers. The teachers are recruited after several rounds of interviews to evaluate their skills, teaching experience, openness to learning, and ability to build a connection with the students. It had even invited a representative from Reggio Emilia to train the teachers in Emergent Curriculum. Furthermore, the school periodically nominates teachers for education conferences on trending education issues.



*Within just two years of introducing Emergent Learning, the school has witnessed positive outcomes for its teachers and students. The teachers play a pivotal role in deciding the direction of the curriculum and this improves their morale.*

### **Positive impact for different stakeholders**

Within just two years of introducing Emergent Learning, the school has witnessed positive outcomes for its teachers and students. The teachers play a pivotal role in deciding the direction of the curriculum and this improves their morale. Students are not afraid to express themselves, and enjoy learning as they can plunge into any area of interest. In addition, the curriculum has enriched the

classroom relationship by emphasising frequent interactions between teachers and students.

By creating an effective, innovative curriculum, this pre-school is able to command premium fees and is among the most expensive schools in New York.

*Note: The school identity has been kept undisclosed at the request of the interviewee.*



### **EDUCATION INNOVATIONS**

- Enabling teachers to identify student interests
- Using student interests to customise curriculum
- Tapping resources such as parents and the community
- Organising activities to take learning outside the class
- Teacher-hiring and training strategies for curriculum delivery



### **RE-CONTEXTUALISING INNOVATIONS**

- How can you enable teachers to identify the true interests of their students?
- Are teachers able to articulate the main concepts so they may be taught using different contexts?
- Are we providing teachers with enough autonomy and resource support to individualise their classes?

**NORTH SHORE-LIJ CENTER FOR LEARNING AND INNOVATION**

## CONTINUOUS DELIBERATE PRACTICE TO MAXIMISE LEARNING EFFECTIVENESS

*North Shore's corporate university has helped its internal stakeholders attain scale, maintain quality, and save on costs*



North Shore-LIJ Center for Learning and Innovation is the first corporate university for a healthcare system, providing training for 16 hospitals, four long-term-care facilities, three trauma centres, dozens of ambulatory care centres, six home health agencies, and nearly 400 physician practice locations that serve seven million people throughout the New York area.

### **Lack of continuous learning and realistic training methods**

North Shore-LIJ was formed from a series of mergers, and staff needed to be more consistently integrated. Organisational performance was also not at its optimum as there was a lack of systematic and continuous training for its staff. At the same time, hospital staff needed to be trained realistically for stressful and dynamic real-life emergencies, so as to improve its clinical outcomes.



### **Deliberate Practice and Collaborative Learning to continuously upgrade**

North Shore's pedagogy was developed from evidence-based neuroscience studies that found the best learning outcomes in Experiential Learning, where appropriate amounts of stress help information retention. North Shore therefore does not conduct any lectures, but makes its trainees do pre-work before classes.

"Learning is most effective if the facilitators speak the least in class," elaborates Dr. Gallo, Chief Learning Officer of North Shore.

This involves studying case studies, presentations, and articles before class. North Shore's 'Deliberate Practice' training



philosophy for the past five years have also seen hospital trainees arriving in intact teams and working together to solve problems on live 'cases'.

The organisation gradually developed a facility with six classrooms equipped with audio and video technologies, 19 simulation rooms with various high-fidelity simulators, 14 physician examination rooms, and several control rooms. Simulation rooms can be flexibly configured for dual purposes to save on costs, with a single simulation room costing under USD 100,000.



“North Shore’s ‘Deliberate Practice’ training philosophy for the past five years have also seen hospital trainees arriving in intact teams and working together to solve problems on live ‘cases’.

The Centre also developed hundreds of its own scenarios for trainees to work on in its facilities. Using live recordings of each situation, hospital faculty and Centre facilitators can jointly provide realistic and immediate performance feedback for trainees to learn from. These sessions also use everything from high fidelity simulators (mannequins) to simulate cardiac arrest, to trained actors for mental disorders. Dr. Gallo confirmed, “We haven’t come across any conditions that we cannot simulate.”

### Continuous training to build organisational capability

Over the past five years, the Centre has trained 100,000 employees and in 2012 it provided 165,000 learning hours. The rate of continuous, repeat training is high, with most of the health system’s 45,000 employees coming in multiple times each year.



As a result of the Centre, North Shore-ILJ health system has also been able to build its organisational capability to effectively respond to the rising quality expectations resulting from a pay-for-performance system and the shift from inpatient to outpatient treatment. In 2013, the Centre was also honoured with a silver trophy at the Global Council of Corporate Universities in the category of “Best Innovative Corporate University”.



### EDUCATION INNOVATIONS

- Corporate partnerships with GE, Ritz Carlton, and NCHL, as well as affiliations with six universities
- Training in Leadership, Operational Performance, Patient Safety, Organisational Development, and Technical Education
- Investing in technological and infrastructure hardware, as well as organisational culture, evidence-based pedagogies, and processes as ‘software’



### RE-CONTEXTUALISING INNOVATIONS

- How can training providers better understand the external mega-trends and internal pressures of their clients, so as to translate them into training needs?
- Are there ways for corporate training providers to involve client staff as faculty, to enhance buy-in as a de facto corporate university?
- Are the skills we are training our clients in and the environments we are simulating directly and completely relevant to their job performance?



*We're moving toward a global economy where the true strategic asset is IP.*

**Horatio Gutierrez**

KEY INNOVATION ASPIRATIONS #2

## EXPLOITING INTELLECTUAL PROPERTY



## HARVARD EXTENSION SCHOOL

# MAINTAINING QUALITY WHILE SCALING INTERNATIONALLY

*Harvard was able to maintain its brand and ensure quality when growing a global student base, by using a combination of rigorous course requirements and online learning innovations*



Founded in 1909, Harvard Extension School is a school of Harvard University that offers certificate, professional degree, and postgraduate programmes in 60 fields.

### **Tedious admission and changing requirements of working professionals**

Harvard Extension offers lifelong learning, but it recognised that it had to streamline its overly rigorous admissions process and deliver lessons online to cater to busy working professionals. However, it had to ensure that the Harvard standards were uncompromised and that online learning courses were as effective as classroom-based learning.

### **Expanding through open enrolment and quality online learning**

Harvard Extension adopted an open enrolment system to simplify the admissions process. However, to ensure its graduates are of



high calibre, students need to attain at least B grades in one basic, advanced and elective course.

"A student enrolled in the Masters programme is constantly challenged with assessments, group assignments, as well as an individual thesis or capstone course during her studies. These measures filter out underperformers, and ensure that only the most deserving and motivated students succeed," explains Assistant Director of the Sustainability and Environmental Program, Dr. Ramon Sanchez.

Online lessons are made as effective as in-class sessions by incorporating new pedagogical features. For instance, an





The efficacy of Harvard Extension's quality assurance measures were proven when student results for initial courses offered to online learners from Extension School were comparable with those of full-time students pursuing undergraduate courses at Harvard College.



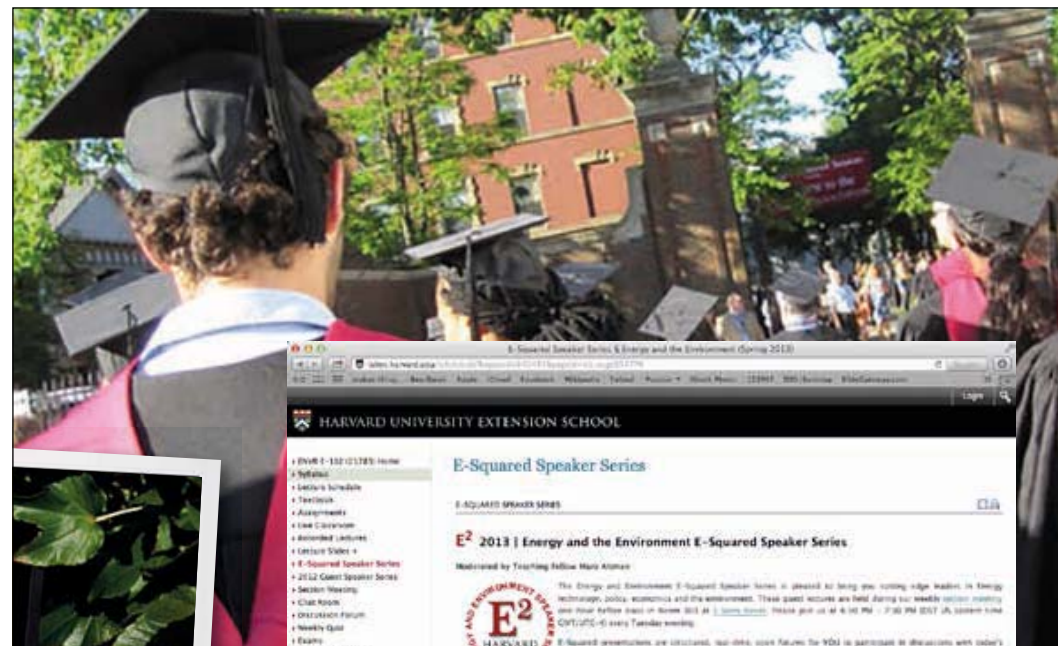
online platform allows remote students to clarify their questions as they watch lectures. A user can also engage with the student community around-the-clock using collaborative tools, for purposes such as "case study assignments". Complementing these online programmes, students also need to physically attend a 6- to 8-week residence component to gain the full Harvard experience. Statistics on student participation and outcomes are also collected and analysed to help instructors make more data-driven decisions on effective content delivery methods.

### Successfully expanding student and alumni networks globally

The efficacy of Harvard Extension's quality assurance measures were proven when student results for initial courses offered

to online learners from Extension School were comparable with those of full-time students pursuing undergraduate courses at Harvard College.

Over the years, the many technological and pedagogical innovations introduced for online learning has proven to be cost-effective and helped the Extension School extend its reach globally. The school had over 13,000 students in 2013 and it has reached 500,000 students through a wide range of online, face-to-face, and blended learning courses and a fifth of the registered student population are international students.



### EDUCATION INNOVATIONS

- Online and offline lectures split in 15-minute learning blocks, in line with shorter online attention spans
- Virtual simulation games, video conferencing, online collaboration tools
- 24-hour long online group projects to generate business plans
- Interactive seminars and guest lectures by industry practitioners to equip students with industry knowledge
- Real-life case studies to reinforce classroom learning and its practical applications
- Cross-university synergies from linking student theses with faculty research



### RE-CONTEXTUALISING INNOVATIONS

- How can different elements of the full classroom experience be best repackaged online for distance learning?
- What is the optimum mix of online and in-class teaching that ensures both academic quality and student flexibility?
- How can your organisation use objective student data to demonstrate the efficacy of online learning?

HUTHWAITE

## INVESTING IN SYSTEMS TO SUPPORT KNOWLEDGE ASSETS

*Huthwaite has established human resource practices to retain know-how and invested in content management systems to scale up its knowledge resources*



Huthwaite is a sales performance improvement organisation, founded 35 years ago by English behavioral psychologist Neil Rackham. SPIN®

Selling is Huthwaite's renowned methodology that has defined the field of Consultative Selling.

### **Lack of competent trainers and difficulty in ensuring content quality**

Like most other training organisations that use external trainers to manage scalability, Huthwaite needed to maintain the quality of its training and loyalty of the trainers.

In addition, it faced diverse client needs, and needed to design productive knowledge management approaches for staff to customise and deliver high quality lessons to its different clients.



### **Synergising HR strategies with cutting-edge training and systems**

Huthwaite pays special attention to retaining its contract trainers and freelance writers, and offers attractive certification, compensation and sufficient work to encourage their loyalty. As such, experienced trainers have an average of 15 years to support its knowledge resources, much higher than the industry average. To ensure succession planning, their rich knowledge is effectively passed on to new trainers through dedicated training.



"To ensure consistent quality, trainers undergo experiential learning, participating in the same learning modules taught to Huthwaite clients. These modules are based on Bloom's Taxonomy of Learning that integrates knowledge from comprehension and application, to synthesis and evaluation," explains Ms. Colleen VanDyke, Vice-President of Design Services.





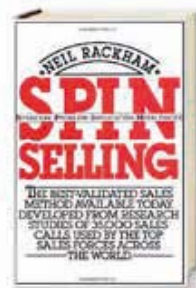
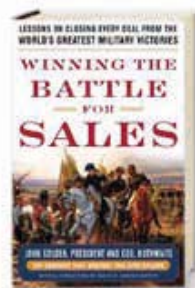
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*Its clients have been able to achieve training ROIs of up to 500 percent, according to sales variables such as customer accounts, pipeline throughput, deal size, and multi-product sales. Huthwaite itself was also able to expand rapidly, growing its revenues by 23 percent last year.*

Huthwaite conducts research, creates content and stores them in a central database repository. The system allows Huthwaite Designers to extract such content and operate a rapid eLearning content development tool that can efficiently customise content for different user interfaces. This offers high reusability and control. Content creators can instantly perform single source authoring and render this instantly on mobile, web, print, and MS Powerpoint platforms. The company also actively solicits learner data and feedback using self-report trainee surveys, so as to perform analytics, report on learning outcomes, and refine its own approaches.

### Effectively exploiting knowledge assets

Its clients have been able to achieve training ROIs of up to 500 percent, according to sales variables such as customer accounts, pipeline throughput, deal size, and multi-



product sales. Huthwaite itself was also able to expand rapidly, growing its revenues by 23 percent last year.

As a result of its accomplishments, Huthwaite received several industry accolades such as 2011 Top 20 Sales Training Companies by TrainingIndustry.com, 2011 The “Moving America Forward” Award and 2010 Best Product Award: Huthwaite Dealmaker, and the Informa Awards.



### EDUCATION INNOVATIONS

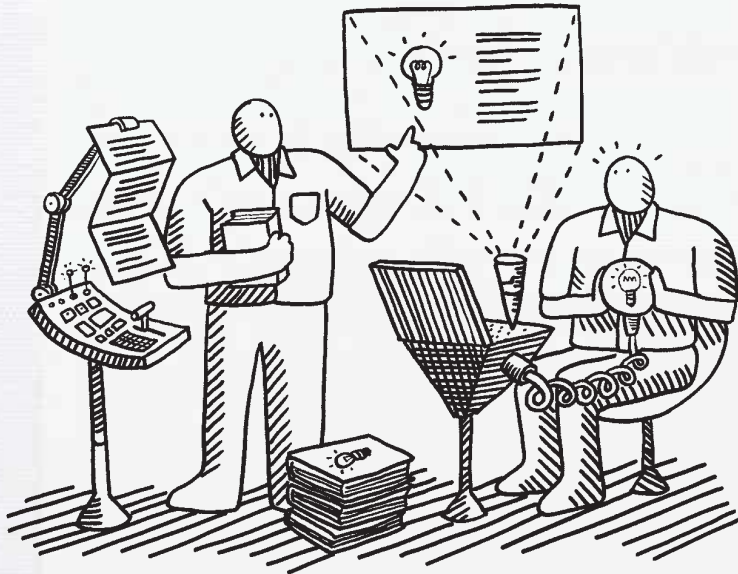
- Training-the-trainers using experiential learning and post-event follow-through
- Solution architecture for efficient and scalable content development
- eLearning modules to reinforce classroom learning



### RE-CONTEXTUALISING INNOVATIONS

- How can we make the training experience more engaging for our trainers?
- How can we configure our technological infrastructure to best support our business requirements?
- Can we design pre and post-assessments to effectively measure learning impact?





*We know where most of the creativity, the innovation, the stuff that drives productivity lies - in the minds of those closest to the work.*

**Jack Welch**

KEY INNOVATION ASPIRATIONS #3

## INNOVATIVE STAFF MANAGEMENT TECHNIQUES

JAMESTOWN ELEMENTARY SCHOOL

## CREATING PROFESSIONAL LEARNING COMMUNITIES

*Jamestown Elementary School uses Professional Learning Communities to encourage faculties and students to collaborate and create interactive, multidisciplinary learning experiences.*



Jamestown is a public school serving students from preschools, Montessori, kindergarten through Grade 5, as well as special education. Of its 630 students, 15 percent have special needs.

### **Need for a differentiated learning experience**

Jamestown was keen to offer a differentiated learning experience, customised to each student. “We wanted to provide our students with education that taps into their unique individual strengths and prepares them with 21st century interdisciplinary skills”, says the school principal Ms. Kenwyn Schaffner. At the same time, the school believed that more interesting lessons would keep students more engaged in class.

However, teachers were creating lessons in silos and could not exchange information to offer targeted teaching interventions or synergise their efforts to make lessons more effective.



### **Creating a collaborative community and supplementing with technology**

Jamestown teachers were allocated time during school hours to discuss with colleagues the needs of each student and use student learning data to plan joint projects across disciplines. Taking a holistic approach to student development, they were also given autonomy to modify lesson plans so as to maintain the flow of the class and decide on specific platforms or forums where students could apply their cross-disciplinary skills. This could be in the form of class projects such as the Bilingual Wax Museum Day where the students integrate English, Spanish, History, Speech & Drama, and Arts & Crafts to dress up and role play as figures of history in multiple languages.

These teaching approaches were enhanced with a combination of education technologies. For English and Science classes, students use tablets to collaborate and conduct their own research on topics of interest, create videos or graphics to narrate a story, write multimedia e-books, and publish and share them electronically with their families.



“With the aid of video conferencing, the learning community has been expanded internationally through the school’s global collaboration programme

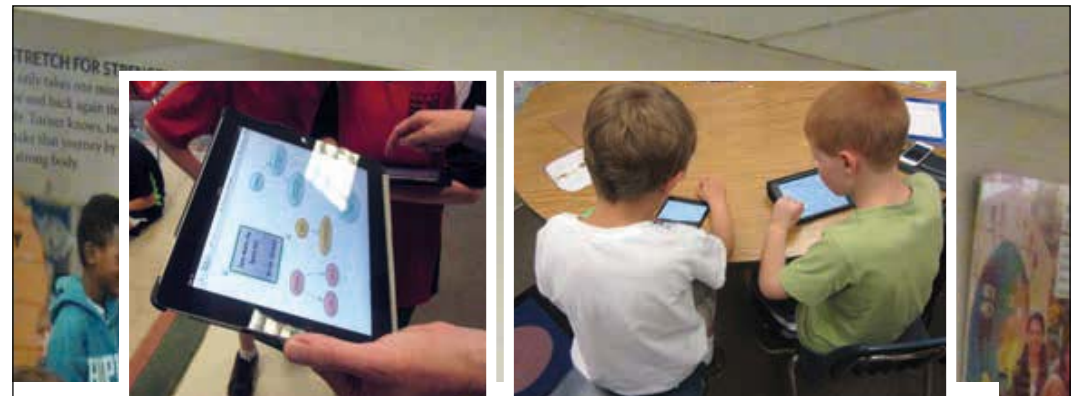
With the aid of video conferencing, the learning community has been expanded internationally through the school’s global collaboration programme, “Rock Our World”, where students create music with other students from 16 other countries on a specific topic.

### Strong academic achievements and learning technology expertise

One of the good classroom practices that Jamestown’s Professional Communities developed was in the use of technology. Students were guided to create a wide range of high quality products, through their technology-enabled projects, developing their confidence, communication and social skills, independence, and self-esteem.

Collaborative learning has also increased student engagement and helped improve reading and computational skills.

Jamestown’s efforts have been recognised with the Virginia Board of Education’s Governor’s Award for Educational Excellence in 2012. Its strength in leveraging education technology was also affirmed when it became the only school in the US recognised by UNESCO as a Mobile Learning Leader. Jamestown also received industry recognition, useful resources, and community support as an Apple Distinguished School, one of only 200 such schools in the world recognised for its thoughtful integration of iPads, iPod Touches, and MacBooks into its pedagogy.



### EDUCATION INNOVATIONS

- Responsive Classroom approach to promote social skills
- Professional learning communities to encourage teachers to collaborate
- Learning platforms and forums for individualised, cross-disciplinary learning
- Collaborative student projects with global communities



### RE-CONTEXTUALISING INNOVATIONS

- Are we taking a student-centric or curriculum-centric approach to create differentiated learning experiences?
- How can we dedicate school time for our staff to collaborate on joint projects across disciplines?
- Can we integrate various technology tools even more effectively into our pedagogy, so as to offer multiple avenues for student expression?



NEW LINE LEARNING ACADEMY

## REDESIGNING SPACES TO IMPROVE LEARNING

*New Line Learning Academy is transforming teacher behaviour and redesigning teaching spaces to improve the social norms and aspirations among its students*



Future Schools Trust is a publicly-funded body in the U.K. that provides pre-school, primary school, and secondary school education. It was formed through the consolidation of the governing body of three schools to form Future Schools Trust which currently runs Cornwallis Academy; New Line Learning (NLL) Academy; Tiger Primary School and Little Learners Nursery. NLL is a vocational school that was formed from the merger of two failing schools – Senacre Technology College and Oldborough Manor Community School.

### **Weak student aspirations and lack of socialisation**

The Executive Officer of Future Schools Trust, Gigi Luscombe, realised that the key challenge to the school's success were behavioural issues in class and a 'poverty of aspiration' among students. "We learnt that many students lacked self-confidence and the motivation to perform well in school", says Ms. Luscombe. This was largely attributed to the fact that many students came

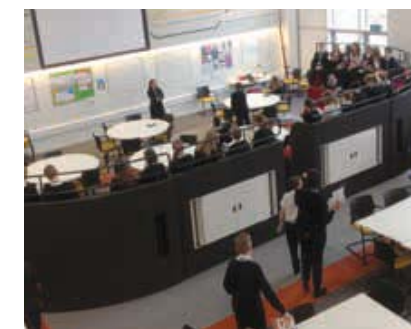


from impoverished family backgrounds and were not exposed to ethics of hard work and delayed gratification.

In addition, teachers were more likely to feel overwhelmed, depressed, or abusive when they only faced students behind closed doors and did not interact much with adults. As a result, this decreased teachers' ability to conduct classes and worsened the learning environment.

### **Humanistic approach to inculcate social norms and ignite passions**

The school was aware that changing the organisation culture and environment was at the core of normalising student behaviour to acceptable social standards. Hence, it started redesigning the spaces so that teachers and students could







learn to accommodate each other at the subliminal level. Staff rooms and corridors were replaced with shared spaces to create a sense of community and to increase the time that the teachers spend with students.

NLL designed open classrooms and introduced co-teaching classes to allow teachers to keep one another in check, learn from one another, and take turns to facilitate different tasks (e.g. plenaries, project work, and have students role-play as teachers). Classes were also structured

to organise various activities in line with the short attention spans of the students.

These changes were supplemented by other mechanisms to improve student confidence such as supporting students with mentors, inviting past students and businesses to give inspirational talks, and inviting companies to train students for professional interviews.

### **Improvement in academic outcomes and relationships**

By changing the school culture, NLL



*NLL designed open classrooms and introduced co-teaching classes to allow teachers to keep one another in check, learn from one another, and take turns to facilitate different tasks*

students started working hard towards their individual goals. Within a period of three years, the school has witnessed a rise in student attendance from 82 to 95 percent. There has also been a marked improvement in academic performance.

The overall pass rate was high at 98 percent, and distinctions took up 20 percent of the grades. Parental involvement also increased significantly from only four parents showing up on Parents' Day, to between 60 and 70 percent of all parents attending today.



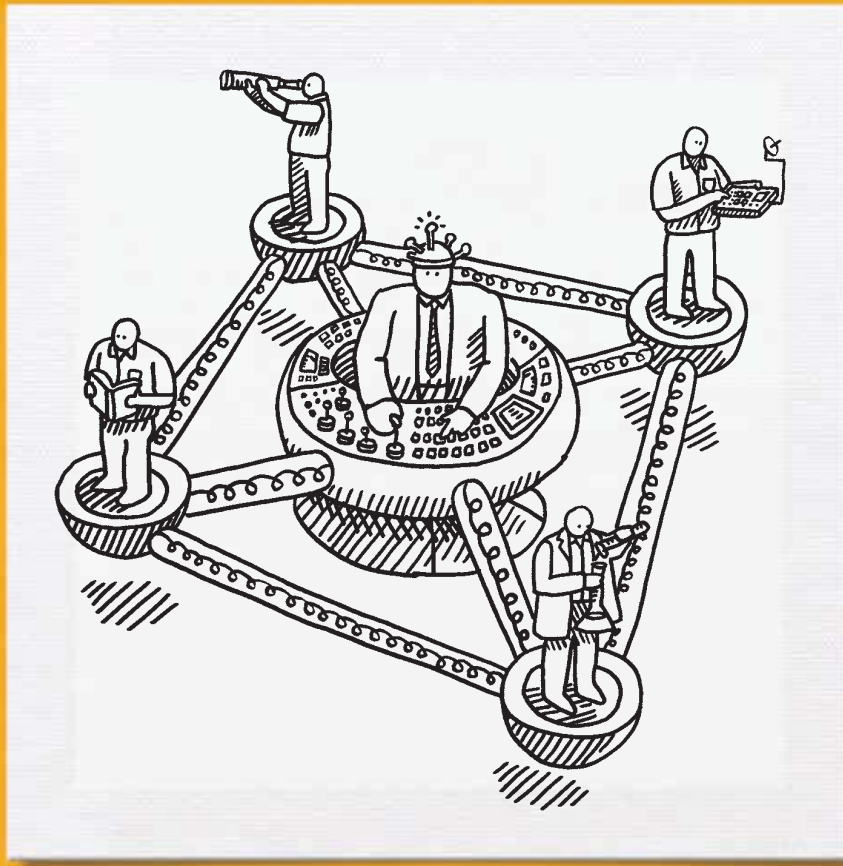
### **EDUCATION INNOVATIONS**

- Open flexible spaces to facilitate collaborative learning and interaction between students and teachers
- Co-teaching to provide support and assistance to teachers
- Providing real-life skills to students through activities such as running small businesses and training for professional interviews
- Devising change management strategy and ensuring adequate staff development and support through changes



### **RE-CONTEXTUALISING INNOVATIONS**

- What social norms in your organisation are preventing students from aspiring to their fullest potential?
- Are there physical structures in your organisation that may breed unnatural behavioral norms?
- What are the kinds of support that your staff require but are not asking for?



*Management is doing things right;  
leadership is doing the right things.*  
**Peter F Drucker**

KEY INNOVATION ASPIRATIONS #4

## DEPLOYING MANAGEMENT CONTROLS

DEFENSE ACQUISITION UNIVERSITY (DAU)

## LEVERAGING TECHNOLOGY TO MEET TRAINING REQUIREMENTS

*Defense Acquisition University (DAU) uses strategic planning, performance measurement and education technologies to maximise impact at minimum costs*



DAU was established in 1991 as the professional educational development and training arm of the US Department of Defense for its acquisition workforce.

### Difficulty in effectively meeting strategic training needs

Set up as the Pentagon's Corporate University, DAU needs to effectively train the acquisition workforce to meet the Pentagon's missions and goals. However, as an external entity, it faces the challenge of accurately identifying the training needs and developing effective programmes. Its challenge also lies in catering to the varied learning patterns and constraints of a busy defence workforce scattered across the globe. The difficulty is further exemplified when DAU is expected to deliver quality programmes despite a cut in its training budget.



### Leveraging technology to propel Corporate University strategy and meet training requirements

DAU aligns its programmes with the Pentagon's training needs. It incorporates findings from environmental scans and organisational assessments to develop a Strategic Plan and annual performance targets. DAU is able to review these performance targets on a monthly basis, by developing a versatile backend system that collects and analyses a huge amount of data to calculate performance indicators and reflect them on a dashboard.

Technology enhancements have also been introduced to address learning requirements of its immense student base within a tight budget. "When we realised that our 14 satellite campuses could not reach our students who were deployed globally, we launched our online learning initiative to overcome physical barriers to learning in a cost-effective manner", says Dr. Chris Hardy, Director of DAU's Global Learning and Technology Centre.





	2012			2013			2014		
Initiatives	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Performance Learning Infrastructure	Knowledge Repository	Knowledge Repository	Knowledge Repository	Knowledge Repository	Knowledge Repository	Knowledge Repository	Knowledge Repository	Knowledge Repository	Knowledge Repository
Mobile	Mobile PCs	Mobile PCs	Mobile PCs	Mobile PCs	Mobile PCs	Mobile PCs	Mobile PCs	Mobile PCs	Mobile PCs
Personalization	Personalized Learning	Personalized Learning	Personalized Learning	Personalized Learning	Personalized Learning	Personalized Learning	Personalized Learning	Personalized Learning	Personalized Learning
Collaboration	Collaborative Learning	Collaborative Learning	Collaborative Learning	Collaborative Learning	Collaborative Learning	Collaborative Learning	Collaborative Learning	Collaborative Learning	Collaborative Learning
Virtual Environments	Virtual Environments	Virtual Environments	Virtual Environments	Virtual Environments	Virtual Environments	Virtual Environments	Virtual Environments	Virtual Environments	Virtual Environments
Innovative Classroom & Learning Technologies	Innovative Classroom & Learning Technologies	Innovative Classroom & Learning Technologies	Innovative Classroom & Learning Technologies	Innovative Classroom & Learning Technologies	Innovative Classroom & Learning Technologies	Innovative Classroom & Learning Technologies	Innovative Classroom & Learning Technologies	Innovative Classroom & Learning Technologies	Innovative Classroom & Learning Technologies
Media	Media	Media	Media	Media	Media	Media	Media	Media	Media

However, to ensure it makes prudent investments, DAU has set up a Teaching and Learning Lab specifically to source for new technologies, create business cases to assess return on investments, as well as prototype and implement approved initiatives. This will not only maximise the impact of technology investments, but also prevent loss from ineffective deployments. "As a result of the Lab, we found that Virtual World Technologies were not suitable as they needed high bandwidth and could not be downloaded into client devices due to security concerns", recalls Mr Luis Ramirez, Director of Integrated Learning Systems.

### Cost savings and recognition as a training leader

By deploying its structured performance management process and learning technologies, DAU has been able to reduce the cost per hour of learning and development, from USD 33.01 in 2000, to USD 18.57 in 2011. This is considerably lower than the American Society for Training & Development's benchmark of USD71.71 obtained from a recent survey of corporate training organisations. The university has also scaled threefold in the past decade and now trains about 225,000 students annually. Of this, online learning was

**“** By deploying its structured performance management process and learning technologies, DAU has been able to reduce the cost per hour of learning and development



used by 34,518 students in Department of Defence organisations outside of the US.

DAU has been recognised with several awards such as Corporate University Best in Class (CUBIC) and Global Council of Corporate Universities Best Overall

Corporate University. It is accredited by the Commission of the Council on Occupational Education, and now has strategic partnerships with 92 academic institutions, 12 professional organisations, and 22 industry partners.



### EDUCATION INNOVATIONS

- Use of strategy as a way to determine relevant education innovations, from senior management alignment to tactical performance scorecards for every staff member
- Online learning to reach users who are located in inaccessible locations
- Technology lab to test emerging technologies and their suitability to user needs
- Strategic partnerships with universities, professional organisations, and government agencies to remain relevant



### RE-CONTEXTUALISING INNOVATIONS

- How aligned are your training curriculum with the strategic objectives of our client organisations?
- Are you systematically evaluating your learning technology investments to ensure they result in quantifiable ROI?
- How continuous is the student feedback you are gathering on your programmes, and are you actively acting on these to make our programmes more effective?



NOTTINGHAM BUSINESS SCHOOL (NBS)

## ATTAINING PROCESS EXCELLENCE WITH LEAN MANAGEMENT

*Nottingham Business School (NBS) was able to use Lean Management principles to increase the value of its offerings to students and faculty while reducing costs significantly*



Nottingham Business School (NBS) was founded in 1979 in the East Midlands. It is a part of Nottingham Trent University and has 30 years of experience in delivering business courses at the undergraduate, post-graduate, and professional levels.

### Inefficiencies due to process wastages

When Professor Baback Yazdani joined NBS as the dean of the school, he observed that the processes were long and wasteful. "The principles of Lean Management based on the organising principle of maximising value at minimum cost needed to be applied to the school. For NBS, the value was defined by the quality of teaching", explained Professor Yazdani.

While most companies embarked on piece-meal Lean projects, NBS took up the uphill task of using Lean principles across the system to maximise the benefits from it.



### Making Lean the operating system of the organisation

The leadership team led an organisation-wide application of Lean over a period of six months. To converge on long-term objectives for the school, the team started defining its aspirations and scope of work.

To make Lean the operating system of the organisation, it finalised metrics for 56 targets that were important for the strategy to succeed. Some of these included entry standards, percentage of graduate employability, and teaching quality scores. Subsequently, they developed improvement projects in line

with these metrics. These projects were not only governed by dedicated sub-committees, they were also tracked by every staff on a visual dashboard - which tags the person-in-charge to each project and allows viewers to access details such as faculty research projects, performance indicators, and project timelines.

### Creating more value, while eliminating waste

The application of Lean made its processes less bureaucratic and more efficient. For instance, it reduced its paper usage by 400,000 printed pages each year, by using only six printers in the entire school of 5,000 students.

Beyond cost cutting, it was also able to map out process flows and use data to create value for its stakeholders. For instance, the budget approval system did not cut travel cost, but maximised value by encouraging faculty to also meet overseas students, alumni, partner universities, and corporate contacts during their conference trips. The school was also able to use statistics on quality of teaching, assessment, and

attainment to make informed decisions on innovative programmes, such as the initiative to set up a Business Provision Unit that allows students to work in exchange for course credits.

On the whole, the school attributes £8 million as the total value generated from Lean Management within just seven years.

**“** The application of Lean made its processes less bureaucratic and more efficient...Beyond cost cutting, it was also able to map out process flows and use data to create value for its stakeholders.



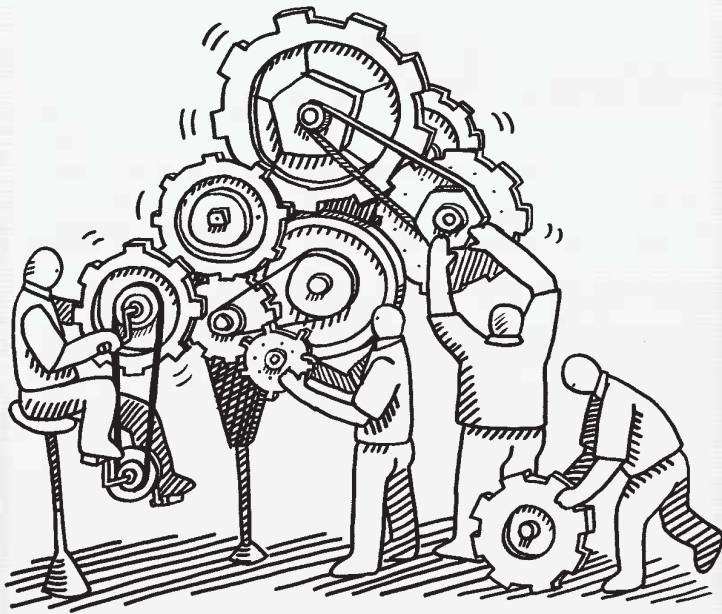
### EDUCATION INNOVATIONS

- Lean principles as the operating system of the school
- Data-driven approaches to determine faculty projects
- Tracking metrics to identify innovative programmes for the students and improve the quality of teaching
- Reducing costs such as printing and travel trips for faculty



### RE-CONTEXTUALISING INNOVATIONS

- Can you identify the sources of waste in your organisation's key business processes?
- What data can you collect to drive factual decisions for your organisation?
- How can your organisation embrace value creation principles, rather than a cost-reduction mindset?



*Your success in life isn't based on your ability to simply change. It is based on your ability to change faster than your competition, customers and business.*

**Mark Sanborn**

KEY INNOVATION ASPIRATIONS #5

## ACCELERATING EDUCATION INNOVATION ADOPTION



KNEWTON

## LEVERAGING PARTNERSHIPS TO INCREASE ADOPTION

*Knewton is an education technology company achieving rapid adoption of its adaptive learning technology with a flexible business model that includes a compelling value proposition and a neutral platform to support strategic partnerships.*



Knewton is a US-based education technology company founded in 2008 by Jose Ferreira, a former Kaplan executive, where he led a company-wide re-engineering effort to redesign the company's courses. The company has successfully raised USD 54 million in four rounds of funding since its inception.

### Challenge to compel the adoption of new innovations

Knewton initially started in the tertiary test preparation market, providing technology for GMAT, LSAT, and SAT. It subsequently leveraged its experience in Adaptive Testing to create an Adaptive Learning engine that recommends questions of varying difficulty based on student proficiency in a topic area. It deconstructs each learning point, identifies linkages among concepts across disciplines, and serves learning content based on each student's individual

learning pathway. The student data further serves as a feedback mechanism for teachers to assess their students' understanding of a particular topic taught in class.

The company has a vision to personalise learning for the world and 'to have Knewton embedded in every education product on the planet', and hence positioned it as a scalable neutral platform. However, without any proven track record, it was challenging to identify and establish initial partnerships to accelerate adoption.

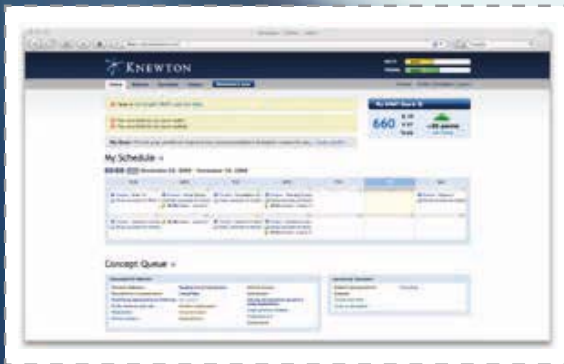
### Reaching out to showcase partners and multipliers

The company's big break came when it secured a partnership with Arizona State University (ASU) to digitise the university's Math Readiness course as an eLearning unit. It dedicated its Adaptive instructional

staff to work with ASU professors to create an end-to-end standalone Adaptive Learning application, including even the user experience. After being able to showcase its technology, ASU asked Knewton to power its entire first-year math course.

To maximise its product outreach, Knewton expanded its distribution model to include business partners. Pearson was among the first publishers to take note of Knewton's work, and approached Knewton to power its largest digital products, MyLabs and Mastering.

In this partnership, Knewton decentralised the content integration by training publishers to deconstruct and add metatags to their own content. This gained the buy-in of its partners and translated into larger-scale partnerships for the company.



### Proven learning outcomes and rapid adoption

Knewton's clarity of vision, proven product track record, willingness to expand its customer base from institutional customers to publishers, and successful collaborative model has been instrumental in its growth story. Its initial implementation at ASU showed positive learning outcomes: After two semesters of use with over 4,000 developmental math students at Arizona State University, withdrawal rates dropped by 56% and pass rates went from 64% to 75%. In addition, almost half of its students finished their classes four weeks early.

Knewton is the adaptive learning technology provider for the world's largest learning companies across a variety of subjects in K-12, higher education, corporate training, and adult learning. Its strong partnerships with global learning companies, including Pearson, Houghton Mifflin Harcourt, Macmillan Education, and more have helped Knewton reach a base of one million users in 120 countries, and it expects to have two million users by end-2013.

Knewton has been recognised with several accolades, named a "Technology Pioneer" by the World Economic Forum in Davos and a ranking on Fast Company's World's 50 Most Innovative Companies in 2012.



**“** Strong partnerships with global learning companies have helped Knewton reach a base of one million users in 120 countries, and it expects to have two million users by end-2013.



### EDUCATION INNOVATIONS

- Breaking down and linking different concepts of varying difficulty levels
- Predictive algorithms to serve up content based on individual learning pathways
- Partnerships with publishers and universities to maximise outreach
- Platform-neutral software that can power any educational content platform



### RE-CONTEXTUALISING INNOVATIONS

- Can your curriculum be deconstructed to link different concepts and support individualised learning pathways?
- What other markets can your proprietary technologies be applied to?
- How are you adapting your collaboration models to encourage the right partners to work with you?

BARNSLEY COLLEGE

## LEVERAGING IT ASSETS WITH A DEDICATED TEAM

*Barnsley College has successfully leveraged online resources to make learning engaging*



Barnsley College is a publicly-funded college with about 9,000 students comprising young adults mostly aged 16 to 19 years old. It is located in Barnsley, a former coal mining town in England with a population of over 200,000.

### **Lessons not engaging due to traditional in-class teaching approaches**

The school recognised that traditional classroom teaching approaches could not highly engage students. However, teachers were not able to incorporate interesting activities, such as educational games, due to limited class time. While the school determined that online resources, for out-of-classroom learning could address the issue, it was hard to get teachers and students to adopt them.

### **Introducing engaging multimedia content through dedicated support team**

Barnsley first prioritised subjects such as Mathematics and Science, which would most benefit from concept visualisation.



The school adopted an open-source content management platform Moodle, to host a centralised knowledge repository and empowered teachers to offer interesting learning resources: videos recordings, question banks and fun quizzes. These content are pushed to learning portals which allows students to customise the user interface and learn at their own pace. Thus, the system capitalised on learning resources that save on teachers' time and maximised student engagement.

track student performance and manage the students with diverse skill levels.

In order to enable the ubiquitous use of online content, Barnsley invested in buying 7,000 fixed laptops for its 9,000 students, and an additional of 200 to 300 laptops for long-term loan. These are sold back to students at a nominal fee at the end of their studies.

Barnsley also incorporated a student performance management system for teachers to view student particulars, set targets for individual students, and analyse grouped performance data. Hence, it enables the teachers to more effectively







**“** The successful adoption of the online learning platform is encouraging Barnsley to introduce more learning technologies such as Self-Organised Learning Platforms, to further encourage outside-classroom learning.

To facilitate the adoption of the new technology, Barnsley also gathered a dedicated team to provide individual presentations and training to teachers in each department. Teachers also provided input on whether certain content was good or fit for purpose. The team went an extra mile to provide good customer service. “We visited the classrooms, performed demonstrations, and offered assistance to make it easy and pleasant for the staff to adopt new approaches”, says Rob Hutton, Information Learning Technologies Department Manager. The school has also appointed a Quality Control team that observed all the lessons twice a year, and analysed all the improvement areas.

#### **Improved learning outcomes and enabled to further adopt education technologies**

The successful adoption of the online learning platform is encouraging Barnsley to introduce more learning technologies such as Self-Organised Learning Platforms, to further encourage outside-classroom learning. These efforts have helped Barnsley become one of the few colleges that have been graded ‘outstanding’ by OFSTED – the official body for inspecting all schools in the UK – in the areas of leadership and management, quality of provision, and learning outcomes.



#### **EDUCATION INNOVATIONS**

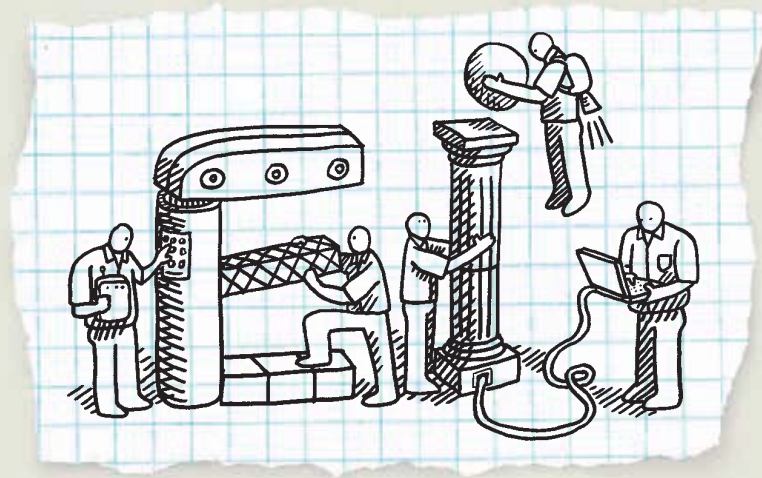
- Moodle online content management platform
- Additional plug-ins to allow teachers to share content
- ePLP – Student performance management platform
- Interactive content manager to support virtual learning environment
- Microsoft sky-drive for efficiently managing email and calendar



#### **RE-CONTEXTUALISING INNOVATIONS**

- Which independent learning modules can be designed to reinforce classroom learning?
- What types of interactive content can help make learning technology more engaging to students?
- What support and benefits can we put in place to help increase the rate of adoption of technology among teachers?

# FROM IDEAS TO IMPLEMENTATION



We trust that these examples have provided a useful introduction to the variety of different EIs that have helped leading education organisations improve the learning experiences, overcome organisational challenges, and grow their operations successfully.

So how should we proceed?

No particular innovation is right for every organisation, and many organisations need to apply a unique assortment of EIs in line with their unique contexts. Each EI challenge requires a different solution, and every innovation involves varying levels of management support, manpower commitment, and technological capabilities. They also involve a spectrum of investment amounts, and offer a range of returns over different time horizons.

## SECOND STEP MODIFY AND CUSTOMISE

You will then need to deconstruct the nature of the EI solutions captured here to the heart of each innovation, in order to match it to your specific problems. For instance, a profiled healthcare organisation may use a high-tech simulator to make learning more realistic. Rather than invest immediately in a simulator, you might find that the best way for your own students to realistically perfect their culinary skills might be to orchestrate a training environment that has the same limited ingredients and distractions as real-life. Similarly, an art school in Singapore applying emergent learning might find it more useful to for its students to create design artifacts perhaps using video or animation, rather than multimedia ebooks.

## FIRST STEP ARTICULATE YOUR CHALLENGES

Similarly, you will need to select the most suitable innovation or mix of innovations to customise to your own situation, rather than import a solution wholesale. A first step could be to articulate the precise nature of the EI challenges that your organisation may face, including possible linkages across the challenges and underlying root causes. What does your particular environment and context look like? Have you articulated your vision and strategy? Do the issues that affect your competitiveness and growth relate more to your students' learning experiences, or to how effectively you're running your operations, or to what might be some ways you can scale your assets for expansion? How ready are you to commit to actually investing in a suitable EI, and is it clear what the nature of impact you're expecting from it is?

The full set of proven EIs that have been analysed in the course of this study has been detailed in a 200-page EI Playbook, which acts as a single resource of EIs to inspire and guide private education companies on their innovation journeys. It details many more Case Studies with useful statistics and metrics, Takeaway Boxes containing short descriptions and tips for smaller good practices, and Practice Notes compiled at the end of each case study that summarise the key EI practices.

### ADDITIONAL RESOURCES

Kindly contact your SPRING officer for a complimentary copy of the EI Playbook.