

Forum on Parents and Schooling

Thursday, 31 August 2017
Ballroom 3, Level 3
Orchard Hotel Singapore

PANEL IV
The Future Education Landscape

PRESENTATION BY
Mr Khairul Rusydi
Co-Founder &
Chief Executive Officer
Reactor

Building An Entrepreneurial Classroom

By Khairul Rusydi
Co-Founder & CEO, Reactor

31st August 2017

REACTOR





HI!

My name is Rusydi

SPRING
singapore
Enabling Enterprise

thousand
network

COMMITTEE ON THE
FUTURE ECONOMY 

Σ
EMERGENCE
HR VISIONAIRES • SINGAPORE

Building An Entrepreneurial Classroom

Part I: Shifting Attitudes to Entrepreneurship

Part II: Future Entrepreneurial Knowledge, Skills & Attitudes

Part III: Contextualizing the Home & Classroom

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Cultivating
THE
GALAXY'S
BEST
YOUNG
Founders

THE WORLD'S BIGGEST PROBLEM
IS THAT THERE ARE *NOT ENOUGH*
YOUNG PEOPLE
SOLVING
THE WORLD'S BIGGEST PROBLEMS.



REACTOR
TRAINING

IMPART
KNOWLEDGE
& SKILLS





REACTOR
RESEARCH

COLLECT
LONGITUDINAL
DATA



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A Anh Vu Mai



MARKETER



DESIGNER



ENGINEER



PRODUCT



FINANCE

You are more talented
than you imagine

Starteur helps you discover, understand and
develop your hidden entrepreneurial talents.

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By registering you agree with our terms of service.

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BOTTOM ATTRIBUTES



GROWTH TIP

Based on your test results, we have
identified several areas where you could



Starteur Potential
Beginning

Your Starteur™ Profile indicates your current overall
potential as **Beginning**, in the majority range of individuals
who have completed the Starteur Profiling Tool. As your
entrepreneurial aptitude is presently in its budding stages,
now would be the best time to look into your personal
motivations for wanting to be an entrepreneur or co-
founder.

[Learn more >](#)



Primary Role
Customer Service Manager

Great customer service managers can sense the emotions
of those around them. They can feel what others are
feeling as though the emotions were their own. They



INCUBATE
YOUTH
STARTUPS



REACTOR
VENTURES



SUPPORT
NETWORKS
FOR PARENTS &
EDUCATORS



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PARENT NETWORK



REACTOR
EDUCATOR NETWORK

The Reactor Ecosystem

The whole of which is greater than the sum of its parts.



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PARENT NETWORK



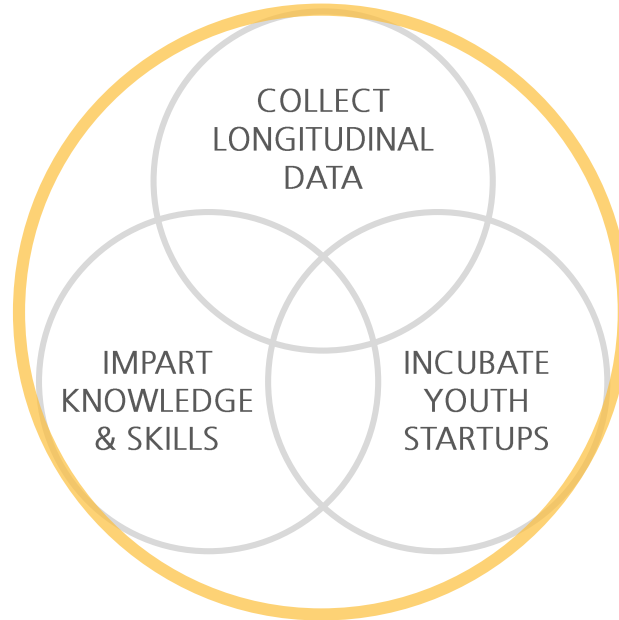
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EDUCATOR NETWORK



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RESEARCH

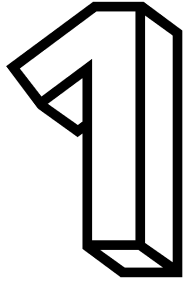


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TRAINING



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VENTURES

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shifting attitudes to
ENTREPRENEURSHIP

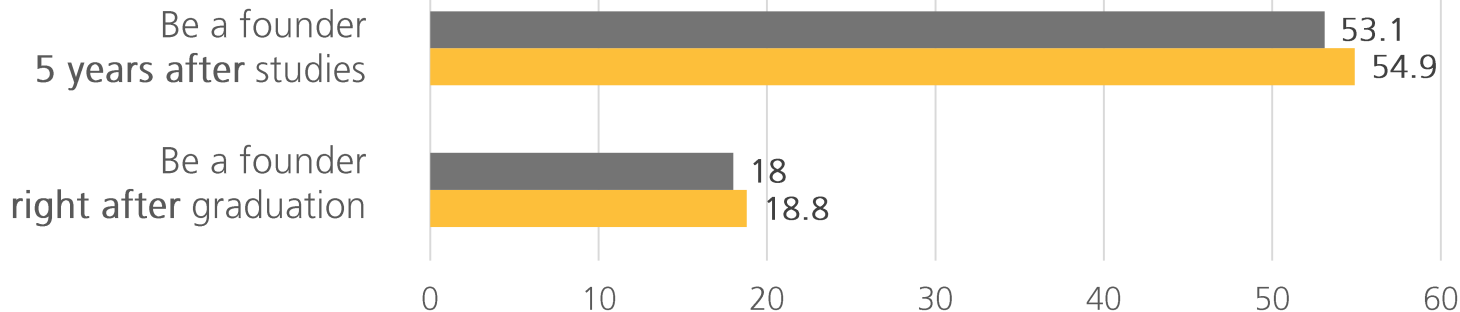
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Entrepreneurial Aspirations of Singaporean Undergraduates

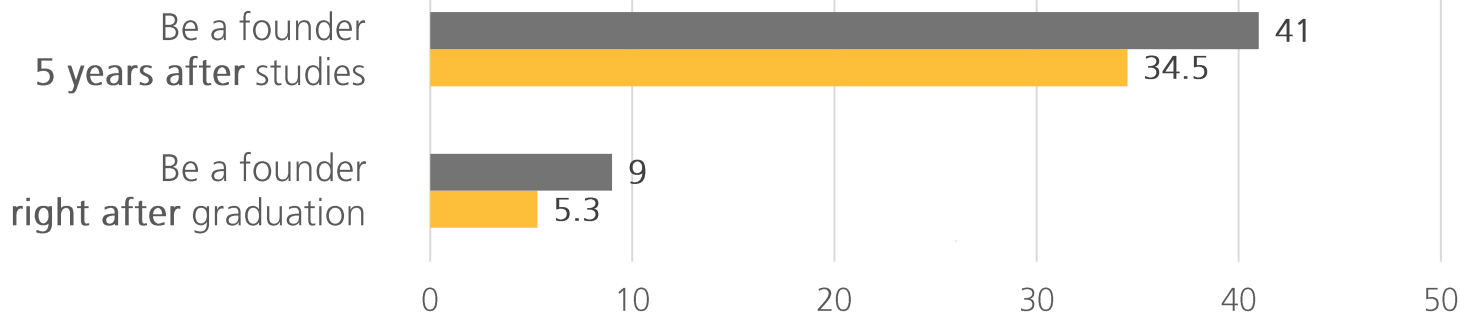
Comparing 2014 to 2011



2011



2014

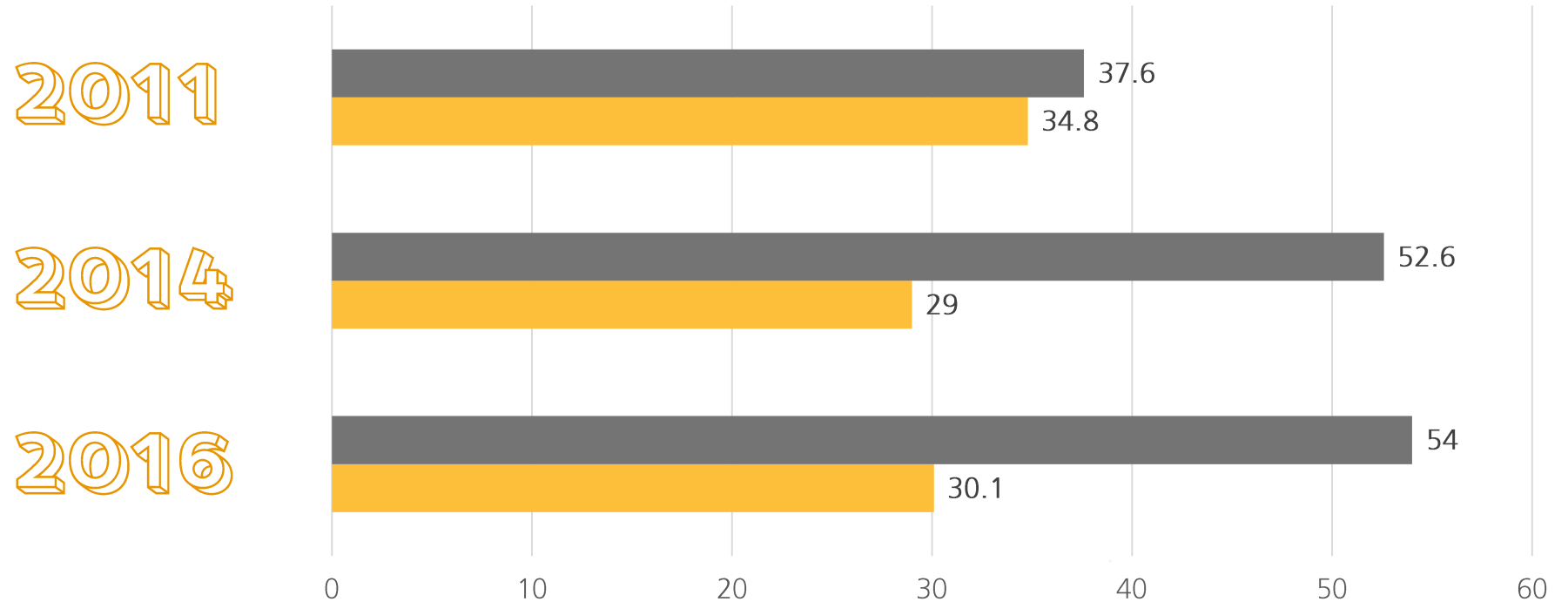


Source: Global University Entrepreneurial Spirit Students' Survey (GUESSS), 2013/14 Singapore Report

Career Choice Intentions of Global Undergraduates

Comparing 2011, 2014 and 2016

Employee
Founder



Source: Global University Entrepreneurial Spirit Students' Survey (GUESSS), 2016 International Report

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Despite Fall in Interest, Being Entrepreneurial is *Still* Important

Becoming an Entrepreneur \neq Being Entrepreneurial



Interest in Startups Decreases
When Economy Is Doing Well

Easier for students to find attractive jobs in the regular job market. Improvement in entrepreneurship education helps students make better career choices.



Entrepreneurial Aptitude is
Demanded by Employers

Future of Work requires being comfortable with uncertainty, which is the default operating environment of a start-up.



Being Entrepreneurial Imparts
A Growth-Mindset For Life

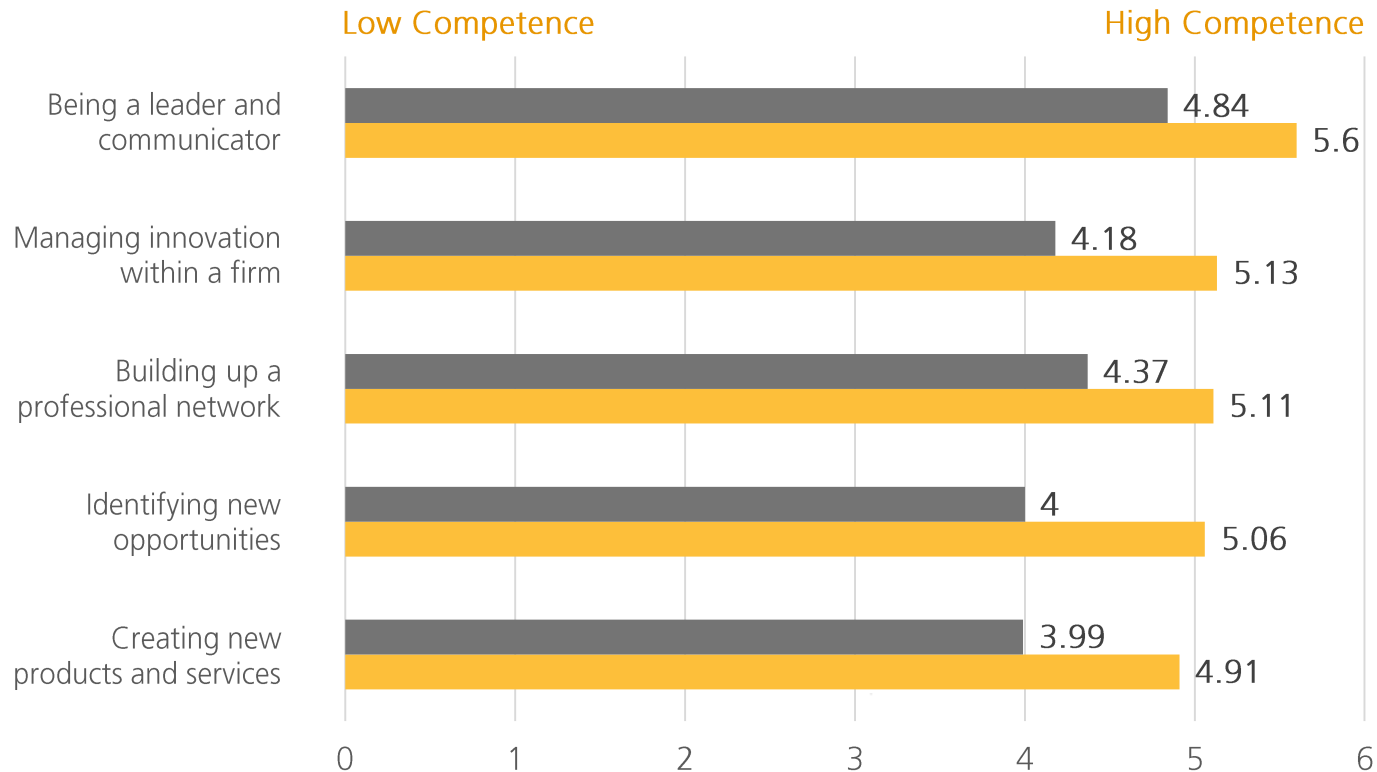
If students have learned how to value-add in a start-up, they are better positioned to create value wherever they may go in future.

Confidence in Personal Skills

Intentional Founders Are More Confident in Performing Tasks, Compared to Their Peers

Intentional Employees
Intentional Founders

2016



Source: Global University Entrepreneurial Spirit Students' Survey (GUESSS), 2016 Global Report

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Perceptions of Society, Global Vs Singapore

Society, Schools & Parents Have a Role to Play

2016

Global
Singapore

Societal requirements and instructions are spelled out in detail so citizens know what they are expected to do.

Most people lead highly structured lives with few unexpected events.

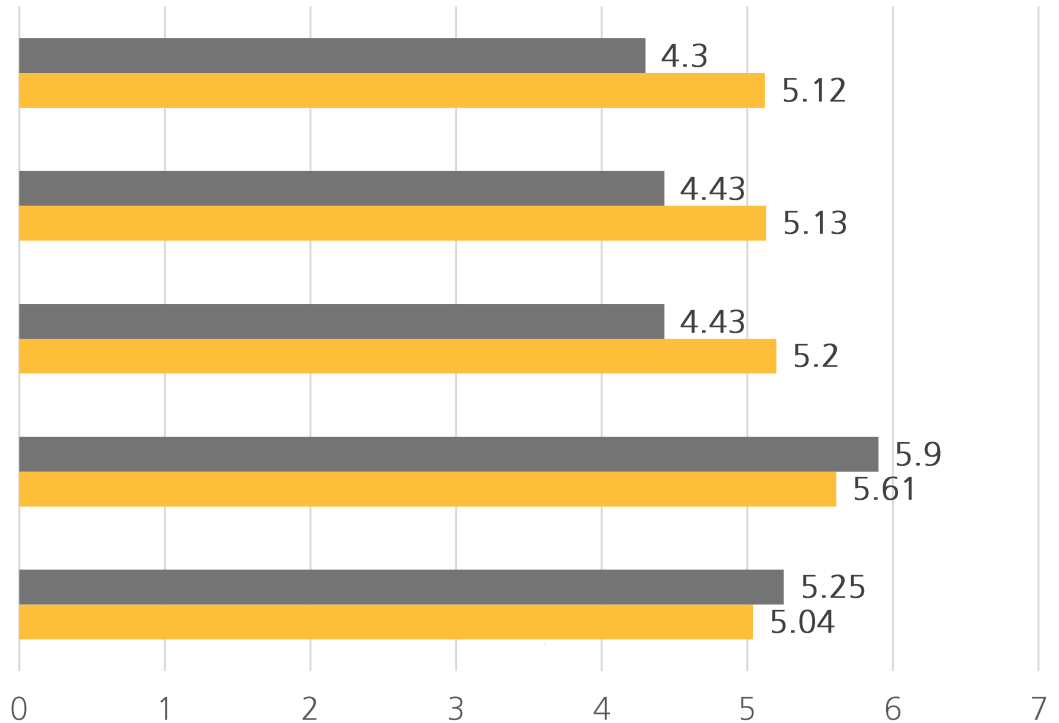
Orderliness and consistency are stressed, even at the expense of experimentation and innovation.

Parents take pride in the individual accomplishments of their children.

Children take pride in the individual accomplishment of their parents.

Strongly Disagree

Strongly Agree



Source: Global University Entrepreneurial Spirit Students' Survey (GUESSS), 2013/14 Singapore Report

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future entrepreneurial

KNOWLEDGE, SKILLS & ATTITUDES

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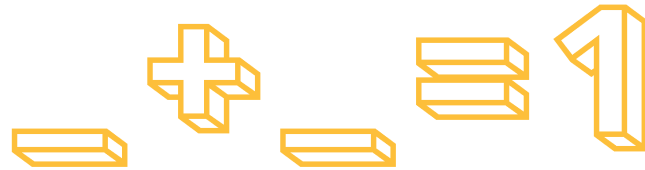
Changing Mindsets & Shifting Paradigms

Being comfortable with ambiguity & uncertainty

School
Causal Reasoning



Real Life
Affective Reasoning



Air

Water

Fire

Earth



The 5 Elements of Entrepreneurial Aptitude

What makes a someone entrepreneurial?

Air

Idealistic & Visionary
Curious

Autodidactic

Water

Adaptability
Fluid Intelligence



Grit & Resilience
Bias-to-Action

Fire

Realistic & Grounded
Disciplined

Earth

Curriculum Overview

The 5 Stages of Entrepreneurial Development

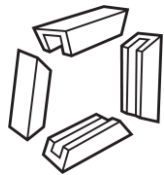
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Awareness

Starting Out



"I now know that startups & entrepreneurship exist."



Lower Sec // Ages 13-14
Gathering of Building Blocks

Exploration

Broadening Horizons



"I am interested in startups & entrepreneurship, and want to find out more about the world."



Upper Sec // Ages 15-16
Research, Planning & Insight

Discovery

Multiple Pathways



"I want to learn more about myself, my strengths, and areas for improvement."



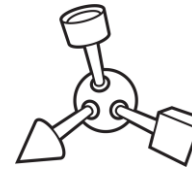
Pre-U // Ages 17-19
Validation & Deliberation

Immersion

T-Shaped Competency



"I want to develop the necessary knowledge, skills and attitudes to succeed in a start-up."



IHLs // Ages 19-22
Multiple Iterated Prototype(s)

Mastery

Pi-Shaped Competency



"I am certain of this path, and am committed to mastering the competencies in running a successful start-up."



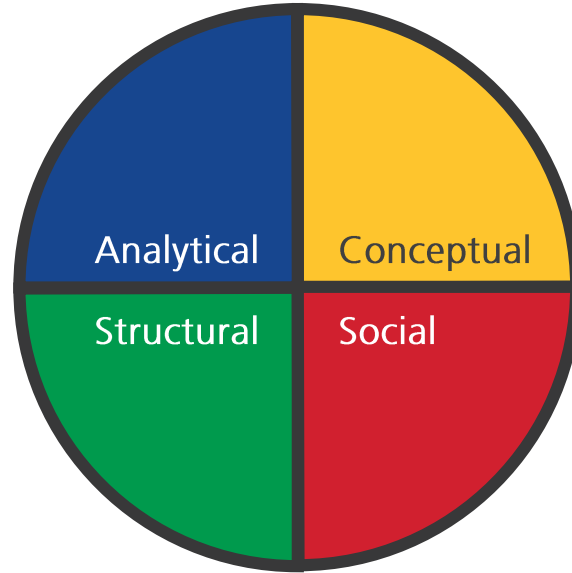
Pre-Grad // Ages 23 & Above
Launch of Projects or Companies

Desired End State

Programme Focus

Emergenetics – 4 Thinking Styles

Applying psychometrics to entrepreneurial training



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Emergenetics – 4 Thinking Styles

Applying psychometrics to entrepreneurial training



Clear thinker
Logical problem solver
Data driven
Rational
Learns by mental analysis

Analytical

Imaginative
Intuitive about ideas
Visionary
Enjoys the unusual
Learns by experimenting

Conceptual

Practical
Predictable
Enjoys directions
Makes/follows plans carefully
Likes closure

Structural

Enjoys helping others
Emotional
Relational
Intuitive about people
Likes working with others

Social

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Analytical Shopping

- list
- calculator
- check receipts
- coupons
- budget
- time management
- Examine products
- Likes superstores
- Do-it-yourself gadgets

• Mall: Saturday, September 1st, 2001 - 11:00am -
2:00 pm

- 9:00 - wake-up
- 10:30 - leave house
- 11:00 - arrive at mall
- 11:15 - Gap (jeans)
- 11:30 - Abercrombie (shirt)
- 12:00 - Food court (Chic-Fit-A)
- 12:30 - Victoria's Secret (perfume)
- 1:00 - Nine West (shoes)
- 1:30 - American Eagle (bett)
- 2:00 - leave mall
- 2:30 - arrive home

Red is going SHOPPING.



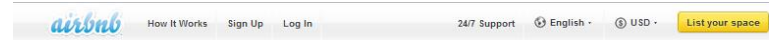
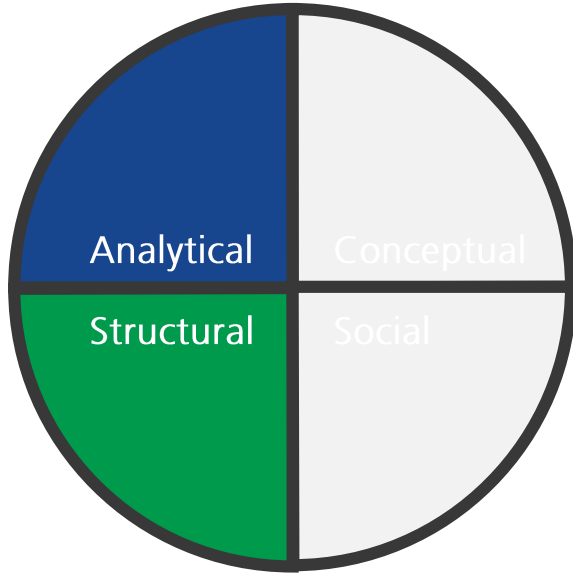
- 1) Groups with lots of friends
- 2) Always approve of friend's selections
- 3) Loan them \$
- 4) Social Gathering after (to show off clothes)
- 5) choose stylish clothing
- 6) excited about purchases & wear it first night

Applications: Slide-Deck Reverse Engineering

Knowledge: Designing an Investor Pitch Deck

Skills: Researching, Design

Attitudes: Discipline, Realistic

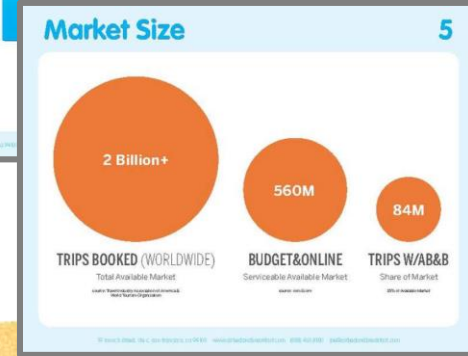


Find a place to stay.

Rent from real people in 19,732 cities in 192 countries.

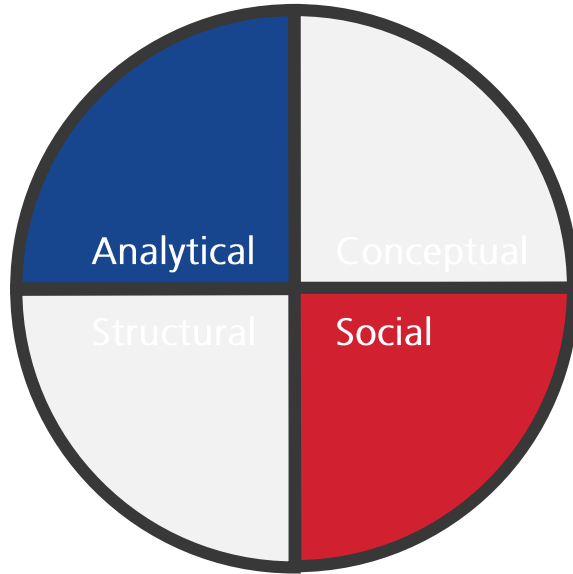
Slide 1: Welcome. The slide features the 'AirBed&Breakfast' logo and the text 'Book rooms with locals, rather than hotels.' It includes a search bar with 'Where?' and 'Going?' fields, a 'Search' button, and a 'Check out' field with a date '11/01/2011'. A 'Guests' dropdown menu is set to '1'.

Slide 3: Solution. The slide states: 'A web platform where users can rent out their space to host travelers to:'. Below this are three blue buttons: 'SAVE MONEY when traveling', 'MAKE MONEY', and 'SHARE CULTURE'.



Applications: EduScrum

Knowledge: Applying Scrum & Agile Techniques
Skills: Self-Directed Learning, Peer Teaching
Attitudes: Curiosity, Fluid Intelligence



TO DO

DOING

REVIEW

DONE



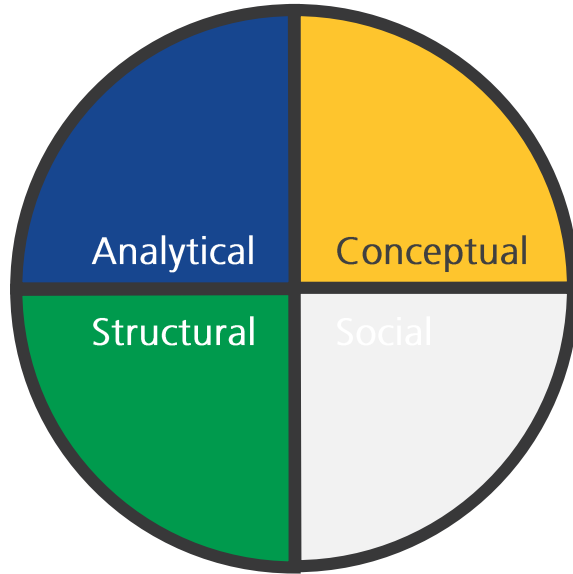
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Applications: Validation Board

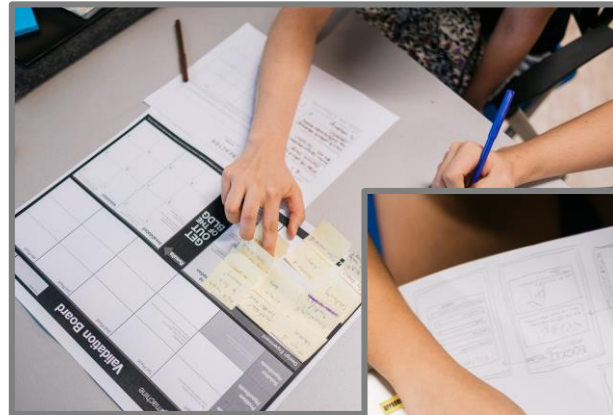
Knowledge: Validating an Idea

Skills: Prototyping, Communication

Attitudes: Empathy, Grit & Resilience



The image shows a digital template for a Validation Board from leanstartupmachine. It is a grid-based tool for tracking the validation process. The top row is labeled 'Track Pivots' and includes columns for 'Start', '1st Pivot', '2nd Pivot', '3rd Pivot', and '4th Pivot'. The left column is divided into three sections: 'Customer Hypothesis', 'Problem Hypothesis', and 'Solution Hypothesis'. Below this is a 'Design Experiment' section with a 'Core Assumptions' box. To the right of the design experiment is a 'Riskiest Assumption' box, which includes fields for 'Method', 'Minimum Success Criterion', and 'What is the lowest cost way to test the Riskiest Assumption?'. Further right is a 'Results' section with a 'GET OUT OF THE BLDG' graphic and a 'Results' table. The 'Results' table has two main columns: 'Invalidated' and 'Validated', each with a 2x3 grid of cells numbered 1 through 6. A small icon of a person running is at the bottom right of the results section.



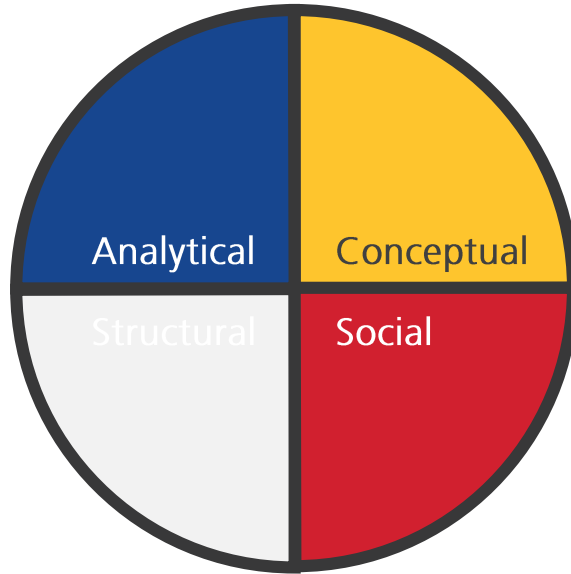
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Applications: Paper Clip Flipping

Knowledge: Understanding Value Proposition

Skills: Pitching

Attitudes: Adaptability, Bias-to-Action



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3 contextualizing the HOME & CLASSROOM

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Empowering The Galaxy's Best Entrepreneurship Educators.



REACTOR
EDUCATOR NETWORK

The Reactor Educator Network (REN) is a professional development network for educators who teach entrepreneurship, innovation, business and design.

Our members meet up once a month to share ideas and best practices in teaching entrepreneurship.

Occasionally, we also organize learning journeys, and collaborate on projects to improve the entrepreneurial development of our students.

Come join us :)

REACTOR EDUCATOR NETWORK (REN) MEETUP

Teaching Prototyping via Experiential Learning

EVENT SUMMARY

Date: Wed, 15th Feb 2017

Time: 3pm to 5pm

Venue: Nanyang Girls' High School



REACTOR
EDUCATOR NETWORK



Software Prototyping Website and Mobile Application



Hardware Prototyping



Experience Prototyping





Review of REN Lesson Plan



UNIT / LESSON PLAN

Duration	90 Minutes
Format	Hands-On Classroom Activity
Class Size	10 to 35 Students
Difficulty	Level 2: Ages 15 & Above
Version	v1.0, Updated 13 Feb 2017

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EDUCATOR NETWORK

Prototyping via Experiential Learning

Intro to Software, Hardware and Experience Prototyping

DOWNLOAD AT bit.ly/joinren2017

REACTOR EDUCATOR NETWORK (REN) MEETUP

Teaching Social Entrepreneurship

EVENT SUMMARY

Date: Thurs, 29th Sep 2016

Time: 3pm to 5pm

Venue: ACE Ideation Centre



FIRESIDE CHAT

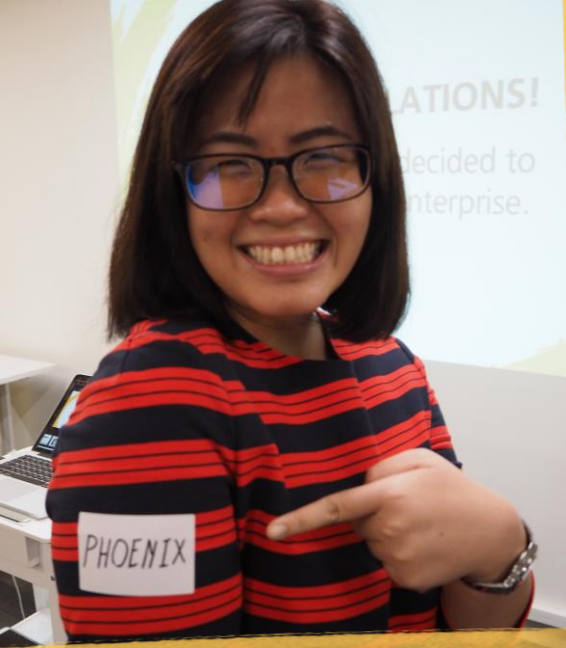
With Mr Alfie Othman
Executive Director, raiSE

- Discussion
1. What are some of the **challenges** that educators face when teaching social entrepreneurship?
 2. How can we better **promote** social entrepreneurship for youth?
 3. How can the participants here today, **collaborate together** to address these challenges?
 4. How can you or REN assist educators in their endeavours?

EUGEN

Review of REN Lesson Plan







Thoughts & Feedback

“Definitely a fruitful afternoon. Recalibrated my purpose as an educator amidst the crazy things going on in school!”

“If representatives from Reactor could come and talk to our students at our campus, it would be great!”



REACTOR
EDUCATOR NETWORK

Review of REN Lesson Plan

SE-2

UNIT / LESSON PLAN

Duration	60 Minutes
Format	Hands-On Classroom Activity
Class Size	10 to 35 Students
Difficulty	Level 2: Ages 15 & Above
Version	v1.0, Updated 7 Sep 16

REACTOR
EDUCATOR NETWORK

Blooming Business – An Origami Simulation Game

Business models of social enterprises

DOWNLOAD AT bit.ly/joinren2017

REN Monthly Meetup Schedule

Previous + Upcoming REN Topics

Date	Previous REN Topics
Sep 16	Teaching Social Entrepreneurship <i>Singapore Centre for Social Enterprise (raiSE)</i>
Nov 16	The Google Sprint Design Process <i>Workshop at Anglo-Chinese School (Independent)</i>
Feb 17	Prototyping via Experiential Learning <i>Visit to Nanyang Girls High School Makerspace</i>
Apr 17	Intro to Virtual Reality (VR) and 3D Modeling <i>Workshop by Sciosity & IMDA Pixel Labs</i>

Date	Upcoming REN Topics
15 th Sep	Teaching Data Science <i>Numsense Book Launch, Vertex Ventures</i>
Nov 17*	iPad Innovation With Apple Classroom <i>Workshop at Apple Singapore</i>
Nov 17*	Best Practices in Facilitation <i>NLP Masterclass with Via Frontiers</i>
Dec 17*	Student-Teacher Emergenetics Programme <i>Workshop at Emergenetics Asia Pacific</i>
Dec 17*	Startup Weekend (Youth Edition) <i>Hackathon + Demo Day at Google Singapore</i>
Jan 17*	Teaching Agri-Entrepreneurship <i>Learning Journey to NUS AgriFarm</i>

DOWNLOAD PAST LESSON PLANS

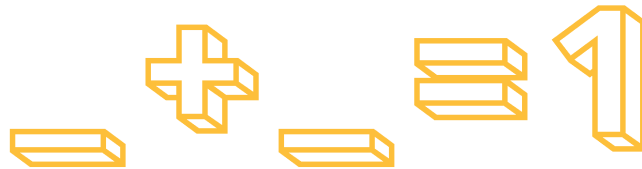
Become a REN member for free. Download all previous lesson plans and event videos via the REN OpenLearning portal. Click here for details: <http://bit.ly/joinren2017>

*All dates and topics subject to confirmation.



concluding
REMARKS

Being An Entrepreneur \neq Being Entrepreneurial
Society, Schools and Parents Have a Part to Play



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THANK YOU

rusydi@reactor.sg

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