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# Measuring Lifelong Learning in Singapore

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# Why are we talking about lifelong learning?

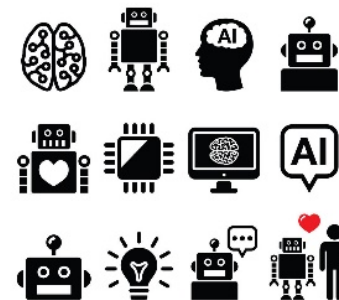


## Demographic shifts

- Ageing population due to low fertility rates and increased longevity  
*In 2030, **1 in 4** Singaporeans are expected to be age 65 and above*
- Live longer, work longer

## Technological disruptions

- Technology improves our productivity, but we also face the risk of being displaced in our jobs
- Learn and adapt to new technologies and new ways of working





Jacques Delors

“Learning is no longer limited to specific life periods and age groups, but needs to be seen as a *continuum*”

“Learning throughout life encompasses the necessity to adapt to learning requirements as a *response to an economic demand*”

“The ability of human beings *to retain mastery of their own destinies*”

- Delors, J., et al. (1996). *Learning: The Treasure Within*.



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# Measuring lifelong learning in Singapore

## Objectives

- To assess the current state and future progress of lifelong learning in Singapore
- To compare Singapore's progress with that of other countries
- To identify barriers to lifelong learning
- To identify groups who may need further support in pursuing learning

## Methodology

- Large-scale national survey
- The Skills and Learning Study (SLS) 2017

## What to measure?

- Developing our lifelong learning framework



# The Skills and Learning Study (SLS) 2017

- ✓ The second iteration of a skills study covering a range of skills topics, including: skills utilisation, job quality, qualification and skills mismatch, and the gig economy
- ✓ This iteration also includes the lifelong learning component



Large scale national survey

Based on a random sample of

- Singapore residents
- Age 20 to 70 years old



Data collection from  
July 2017 to March 2018

- 66% response rate
- 6298 completes





# Lifelong learning

- Lifelong learning as the central vehicle to reframe all pre-employment and continuing education and training activities
- Crucial to a country's continued competitiveness and prosperity; however, more than just an economic focus, it is also about societal progress and enhanced community well-being
- 'Wider benefits to learning' approach involving more than just workforce development; it is also about skills mastery, personal development, and social cohesion
- The learning that occurs throughout different stages of life 'lifelong', and in a wide range of settings 'life-wide'

**No formal measure to assess current state of learning and track progress**





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# The original Delors' lifelong learning framework



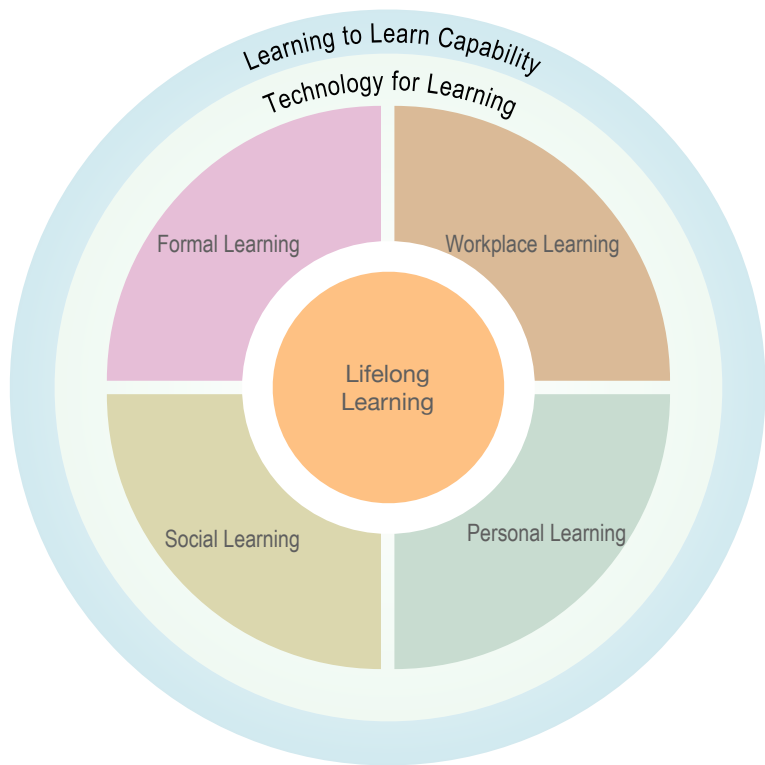
Delors, J., *et al.* (1996).  
*Learning: The Treasure Within.*

## Four pillars of lifelong learning

- To know
- To do
- To be
- To live together



# Our lifelong learning framework



## Four pillars of lifelong learning

- Formal learning
- Workplace learning
- Personal learning
- Social Learning

+

## Two 'enabling' pillars

- Technologies for learning
- Learning to learn



# Our lifelong learning framework

|   | Pillar                           | What it relates to   |
|---|----------------------------------|--|
| 1 | <b>Formal Learning</b>           | Typically relates to the initial cycle of education, formal qualifications |
| 2 | <b>Workplace Learning</b>        | Vocational and professional training                                       |
| 3 | <b>Social Learning</b>           | Social inclusion, equity, and cohesion                                     |
| 4 | <b>Personal Learning</b>         | Personal development and fulfilment  |
| 5 | <b>Technologies for Learning</b> | Ability to use, adapt and benefit from new technologies and learning media |
| 6 | <b>Learning to Learn</b>         | Ability and motivation to successfully pursue learning                     |



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# Formal learning

| Indicator                                     | Measure   | Singapore | Ave of all countries |
|---|---|-----------|----------------------|
| <b>Adult Participation in Formal Learning</b> | Participated in formal education in past 12 months                              | 10.1%     | 11.0%                |
| <b>Educational Attainment</b>                 | Completed tertiary education  | 51.8%     | 32.9%                |
| <b>Drop-out rate</b>                          | Tertiary enrolees who did not complete qualification                            | 16.4%     | 23.3%                |
| <b>Gauge of paper-chase</b>                   | Agree that learning new things is more important than qualifications            | 91.9%     | -                    |
| <b>Quality of formal education</b>            | Agree that their formal education has prepared them adequately for their future | 63.4%     | -                    |



# Workplace learning

| Indicator                                | Measure  | Singapore | Ave of all countries |
|--|--|-----------|----------------------|
| <b>Learning by doing</b>                 | Learning-by-doing from the tasks you perform at least once a month (in past 12 months)         | 71.2%     | 74.4%                |
| <b>Learning new things at work</b>       | Learning work-related things from colleagues at least once a month (in past 12 months)         | 48.1%     | 64.4%                |
| <b>Work related non-formal education</b> | Attendance at structured training for work-related purposes                                    | 63.0%     | 44.4%                |
| <b>Employer support</b>                  | Employer have provided adequate opportunities to pursue work-related training (employees only) | 67.2%     | -                    |
| <b>Skills mastery</b>                    | Have often displayed an inclination towards being good at what they do <sup>#</sup>            | 29.2%     | -                    |

- # Questions:**
1. I aspire to be so good at what I do that my expert advice will be sought continually
  2. I am most fulfilled in my work when I have been able to use my special skills and talents



# Social learning

| Indicator                                  | Measure   | Singapore | Ave of all countries |
|--|---|-----------|----------------------|
| Learning languages                         | Willing to learn a new language (or improve command of another)   | 79.8%     | 63.6%                |
| Volunteering                               | Participation in voluntary work at least once a month in the past 12 months   | 11.9%     | 16.2%                |
| Looking after family members               | Hours spent a week looking after the family (mean)  | 19.7 hr   | 11.8 hr              |
| Gender, racial or religious discrimination | Have <u>not</u> personally felt discriminated against or harassed on grounds of race, religion and gender in the past 12 months | 93.2%     | 85.0%                |
| Community-mindedness                       | Have taken part in activities organised by the community in the past 12 months  | 36.8%     | -                    |
| Learning from other cultures               | Willing to spend time to learn about other cultures   | 72.0%     | -                    |





# Personal learning

| Indicator                   | Measure   | Singapore | Ave of all countries |
|-----------------------------|---|-----------|----------------------|
| Learning through culture    | Visited museums in the past 12 months   | 32.9%     | 42.6%                |
|                             | Attended sports events in the past 12 months  | 25.7%     | 38.5%                |
|                             | Visited the theatres in the past 12 months  | 23.5%     | 33.9%                |
|                             | Visited public libraries in the past 12 months                                      | 32.9%     | 41.6%                |
| Non-work related learning   | Attendance at structured training for non-work related purposes                     | 25.8%     | 10.3%                |
|                             | Read the newspapers, magazines or newsletters outside of work at least once a month | 85.7%     | 87.8%                |
|                             | Read books, fiction or non-fiction outside of work at least once a month            | 41.7%     | 51.5%                |
| Learning through recreation | Have engaged in recreational activities in the past 12 months                       | 33.4%     | -                    |
| Health orientation          | Have engaged in some exercise or sports activities in the past one week             | 60.3%     | -                    |



# Technologies for learning

| Indicator                                       | Measure   | Singapore | Ave of all countries |
|---|---|-----------|----------------------|
| <b>Use of internet for learning</b>             | Carried out learning activities over the internet <sup>^</sup> in the past 3 months   | 24.4%     | 12.0%                |
| <b>Use of ICT for communications</b>            | Used technology for communications purposes <sup>^^</sup> in the past 12 months, whether at work or in everyday life            | 83.5%     | 80.3%                |
| <b>ICT skills use in work and everyday life</b> | Used technology for productivity purposes <sup>^#</sup> in the past 12 months, whether at work or in everyday life              | 75.0%     | 76.6%                |
| <b>Use of internet to access information</b>    | Used technology for accessing and consuming information <sup>#</sup> in the past 12 months, whether at work or in everyday life | 84.5%     | 60.2%                |

<sup>^</sup> Learning activities includes: Doing an online course, using online learning materials, communicating with instructors/ students using educational website/ portals

<sup>^^</sup> Tech for communications includes: Using email, participating in real time discussions over the internet

<sup>^#</sup> Tech for productivity includes: Conducting transactions over the internet, using spreadsheet software, word processor, programming

<sup>#</sup> Tech for accessing and consuming information includes: Using the internet to better understand issues at work or issues related to everyday life, reading news online, or looking for information about education, training or course.



# Learning to learn

| Indicator                     | Measure  | Singapore | Ave of all countries |
|-------------------------------|--|-----------|----------------------|
| <b>Learning strategy</b>      | Have displayed personal qualities required for deep learning quite a lot ^ | 41.8%     | 38.3%                |
| <b>Self-directed learning</b> | Have often displayed a 'love' for learning*                                | 65.6%     | -                    |
|                               | Have often displayed self-confidence towards learning**                    | 35.5%     | -                    |

# "Learning strategy" is made up of a set of 6 questions from PIAAC:

1. When I hear or read about new ideas, I try to relate them to real life situations to which they might apply
2. I like learning new things
3. When I come across something new, I try to relate it to what I already know
4. I like to get to the bottom of difficult things
5. I like to figure out how different ideas fit together
6. If I don't understand something, I look for additional information to make it clearer

\*Questions:

1. "Learning is fun"
2. "Learning how to learn is important to me"
3. "I have a strong desire to learn new things"
4. "Learning is a tool for life"

\*\*Questions:

1. "I am good at thinking of unusual ways to do things"
2. "I am better than most people at trying to find out things I need to know"
3. "I can think of many different ways to learn about a new topic"



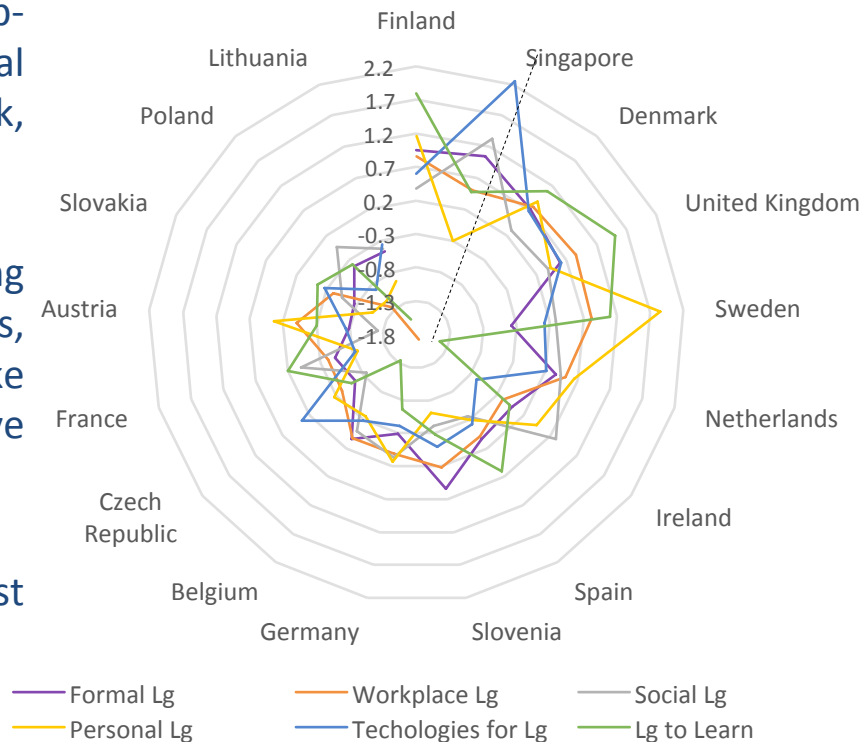
# How does Singapore fare vis-à-vis other countries?

**Workplace learning:** While Singapore has high job-related training participation rate, the extent of informal learning at work is relatively low compared to Denmark, Sweden, Finland and United Kingdom.

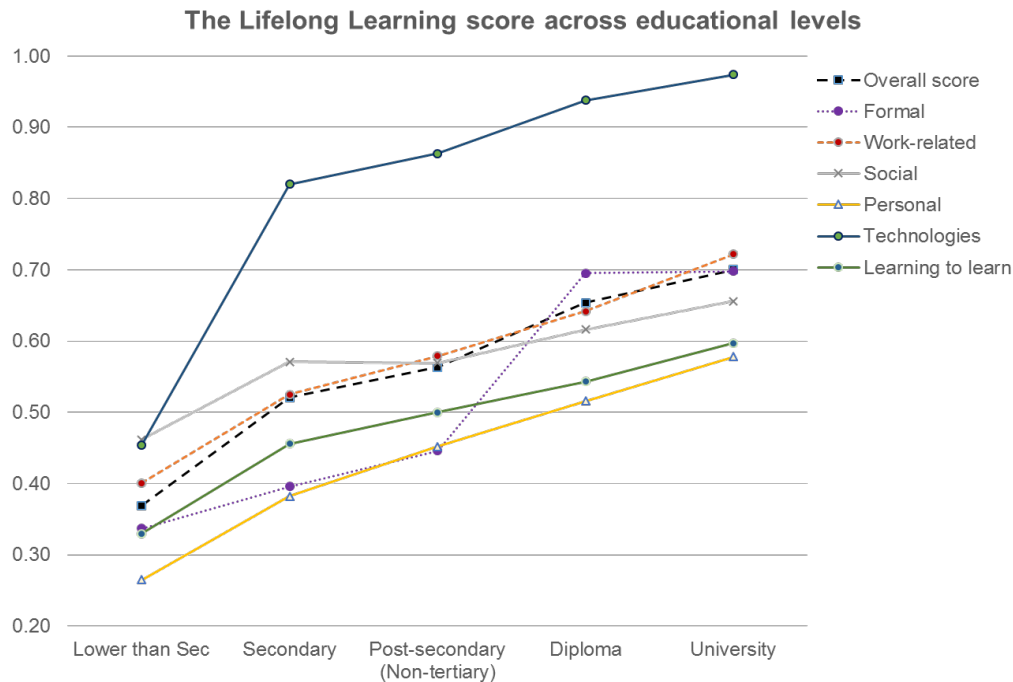
**Personal Learning:** Singapore falls behind in reading books outside work and in attendance at museums, galleries, theatres and libraries. Nordic countries like Finland, Sweden score well in these areas and have higher participation rate in non work-related training.

Ranked 6th in **Learning to Learn:** Finland has the highest score.

Standardised score for each learning indicator



# Lifelong learning is **positively associated** with educational attainment



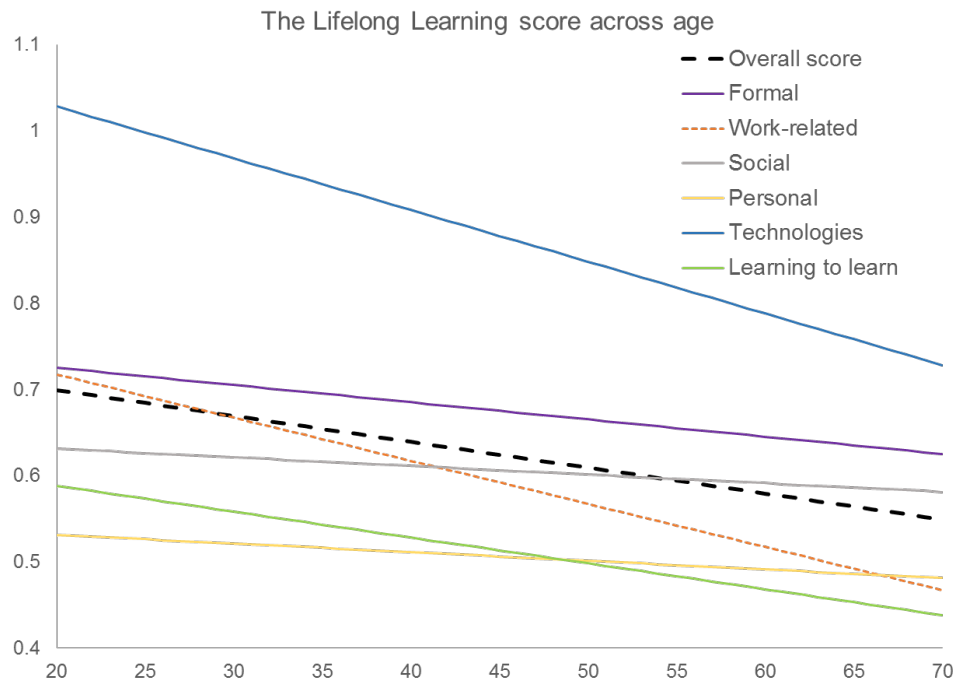
## Education effect

- Most evident on *technologies for learning*
- Less evident on *social learning and learning to learn*

Results have taken age, parents' education and, employment status into account



## Lifelong learning is **negatively** associated with age



### Age effect

- Most evident on *technologies for learning*
- Less evident on *social learning* and *personal learning*

Results have taken education, parents' education and employment status into account



# Determinants of lifelong learning

- **Education**

Lifelong learning is still largely influenced by previous education and learning experience. We have to be conscious to each out to everyone from all walks of life so that all can benefit from lifelong learning.

- **Age**

As we age, our physiological and cognitive functions deteriorate, making learning something new difficult. However, at the same time, seniors are at greatest risk of being displaced by changes in their jobs and by society.



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## Modest to strong correlation between the enablers and the four learning pillars

*Figure. Correlation between the four learning pillars and the enablers*

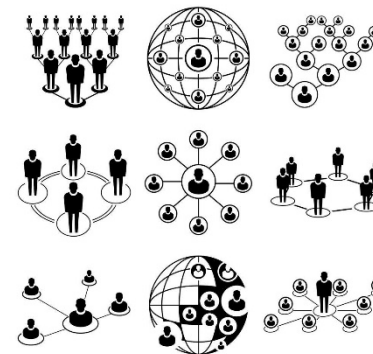
|                    | Technologies for learning |          | Learning to learn |          |
|--------------------|---------------------------|----------|-------------------|----------|
| Age                | 20 to 49                  | 50 to 70 | 20 to 49          | 50 to 70 |
| Formal learning    | 0.39                      | 0.51     | 0.19              | 0.39     |
| Workplace learning | 0.36                      | 0.50     | 0.28              | 0.40     |
| Social learning    | 0.21                      | 0.38     | 0.23              | 0.38     |
| Personal learning  | 0.40                      | 0.51     | 0.24              | 0.36     |

**Note:** The correlation may range from -1 to +1, where -1 will suggest a perfect negative linear relationship, 0 will suggest no linear relationship and +1 will suggest a perfect positive linear relationship. Here, we also represent the strength of relationship by the 'depth' of the colour – darker is stronger.



# Harnessing the **technologies** for learning

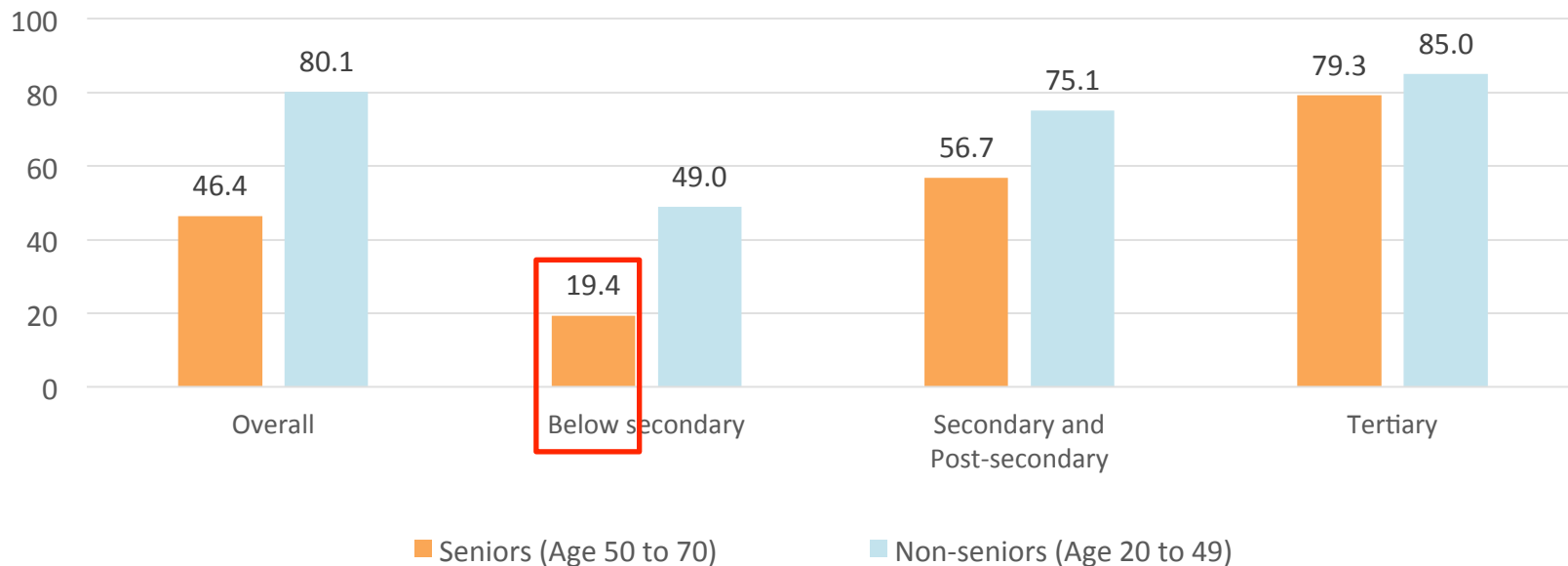
- ICT hold an important role in our daily lives, and also in enabling our learning
- Large amount of resources easily available through technologies
- Make use of ICT to perform many of our routine functions  
(*e.g. Communicate with others on social media, perform internet banking transactions, look up information online, consume our daily news, ...*)
- Make use of new learning technologies  
(*e.g. Massive open online courses (MOOCs), YouTube videos, ...*)





## Seniors with low education attainment have **low technologies for learning score**

*Technologies for learning score, by age and education*

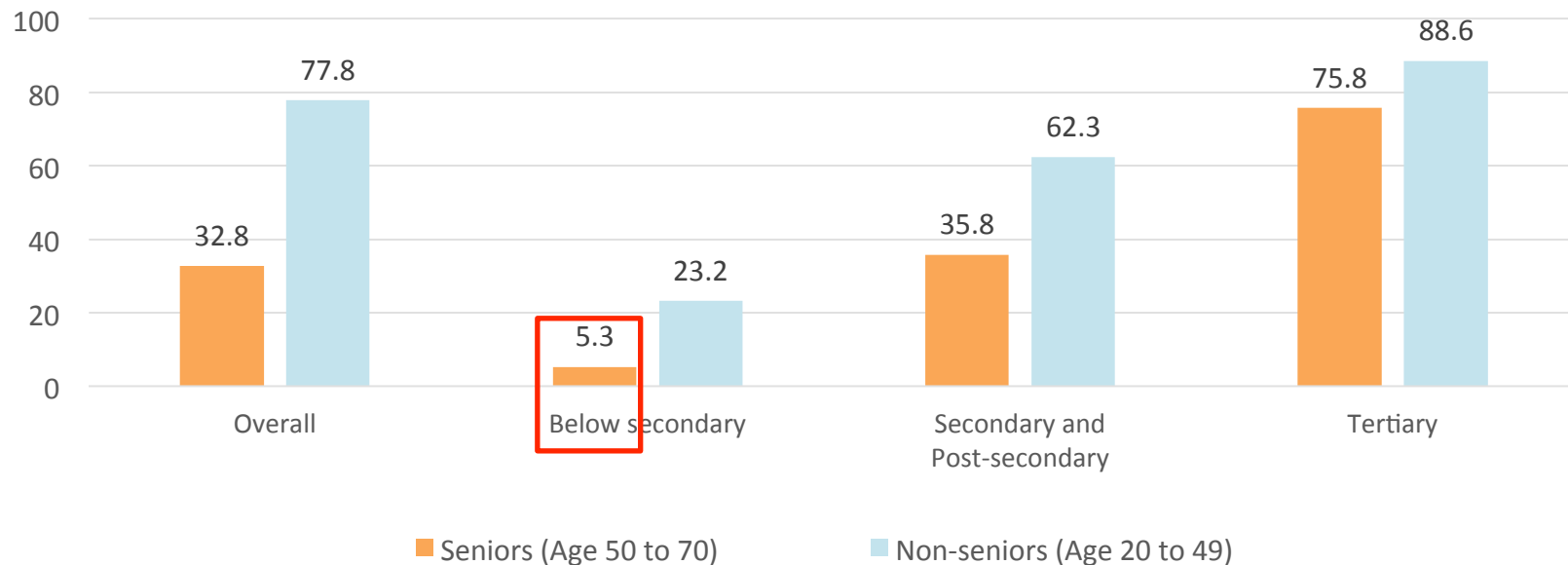




## Seniors with low education attainment report **low confidence in own ICT skills**

Only **1 in 20** seniors with below secondary education are confident in their general computer skills

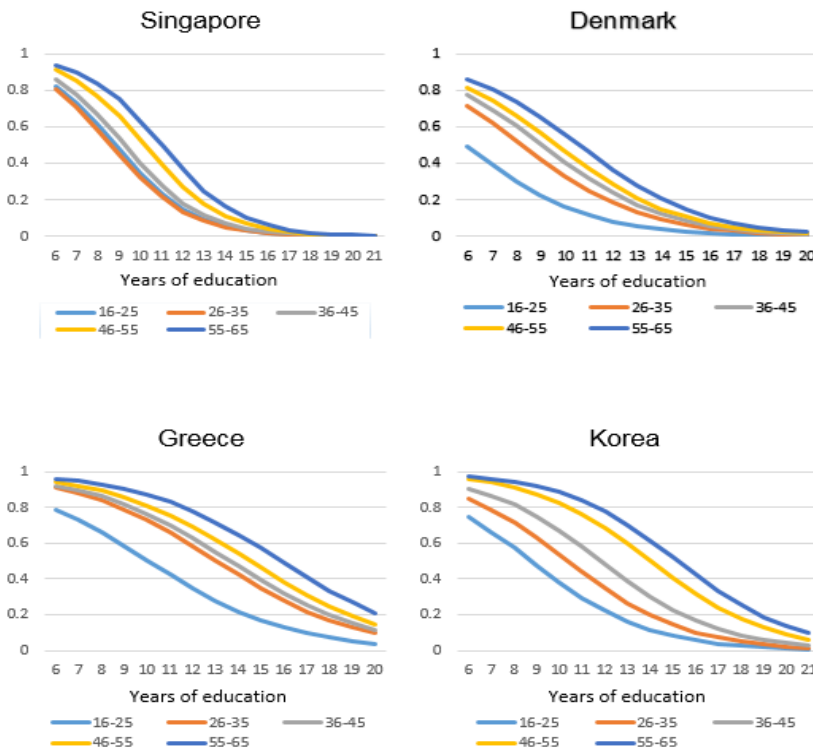
*% Confident in own general computer skills, by age and education*





# Association between years of education, age and digital literacy: Evidence from the Adult Skills Survey (PIAAC)

Probability of  
low digital literacy



## Comparison with other countries

Overall, lower 'risk' of low digital literacy amongst those who received more years of education, and amongst those who are younger.

However, the age effect appears rather uneven amongst countries.

**Greece and Korea:** Relatively higher 'risk' of low digital literacy for those who are older even amongst those who received more than years of education.

**Denmark:** Younger age group (16-25 y/o) have relatively lower 'risk' of low digital literacy.

**Singapore:** Education effect on 'risk' of low digital literacy is strong. Less evident age effect observed.



# Bridging the digital divide

Government agencies and many VWOs provide digital courses for seniors:

- Silver Infocomm Initiative (IMDA)
  - Basic infocomm courses and digital lifestyle skills
  - Provide one-on-one assistance from volunteers with their smartphones
  - Bootcamp with grandchildren and students
  - Appoints seniors who had embraced ICT in their daily life as Silver Infocomm Wellness Ambassador to inspire their peers
- RSVP Singapore
  - IT courses specially designed to cater to the learning needs of seniors
  - Conducted by volunteer trainers who are also seniors



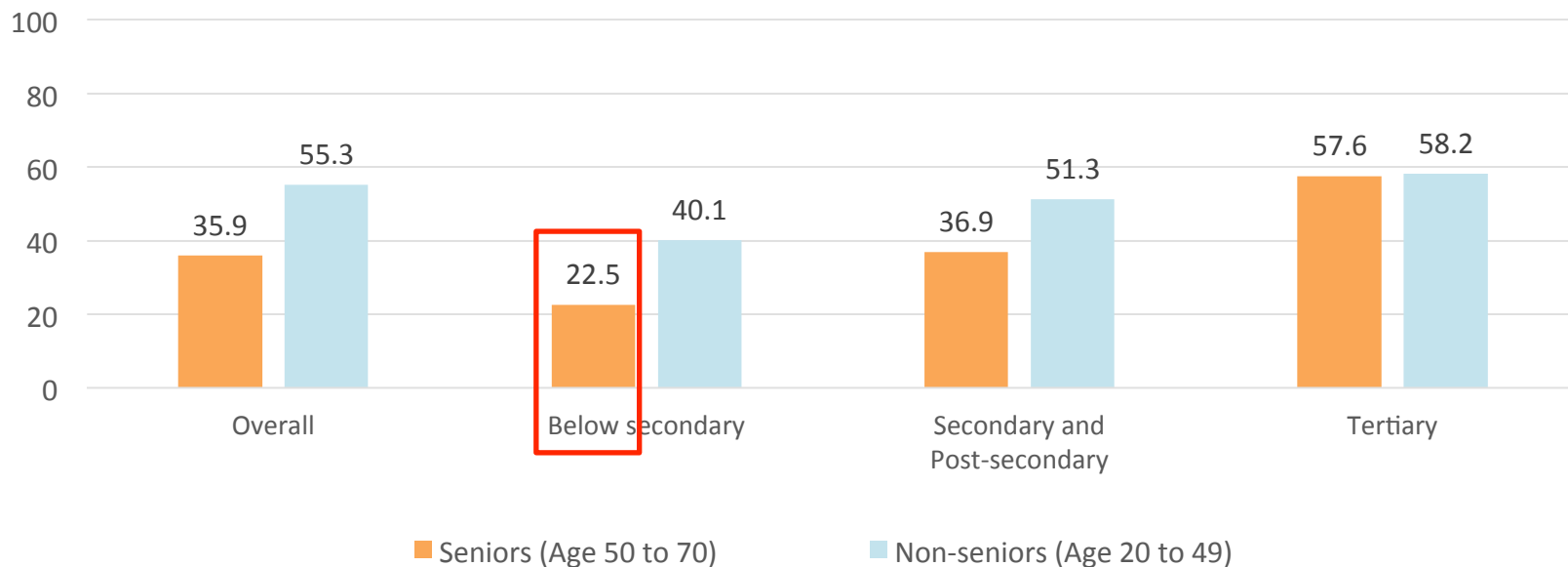
# Enhancing **learning to learn** capabilities

- Develop a 'love' for learning
- Develop self-confidence in learning
- Build capabilities on self-directed learning



## Seniors with low education attainment have **low learning to learn score**

*Learning to learn score, by age and education*



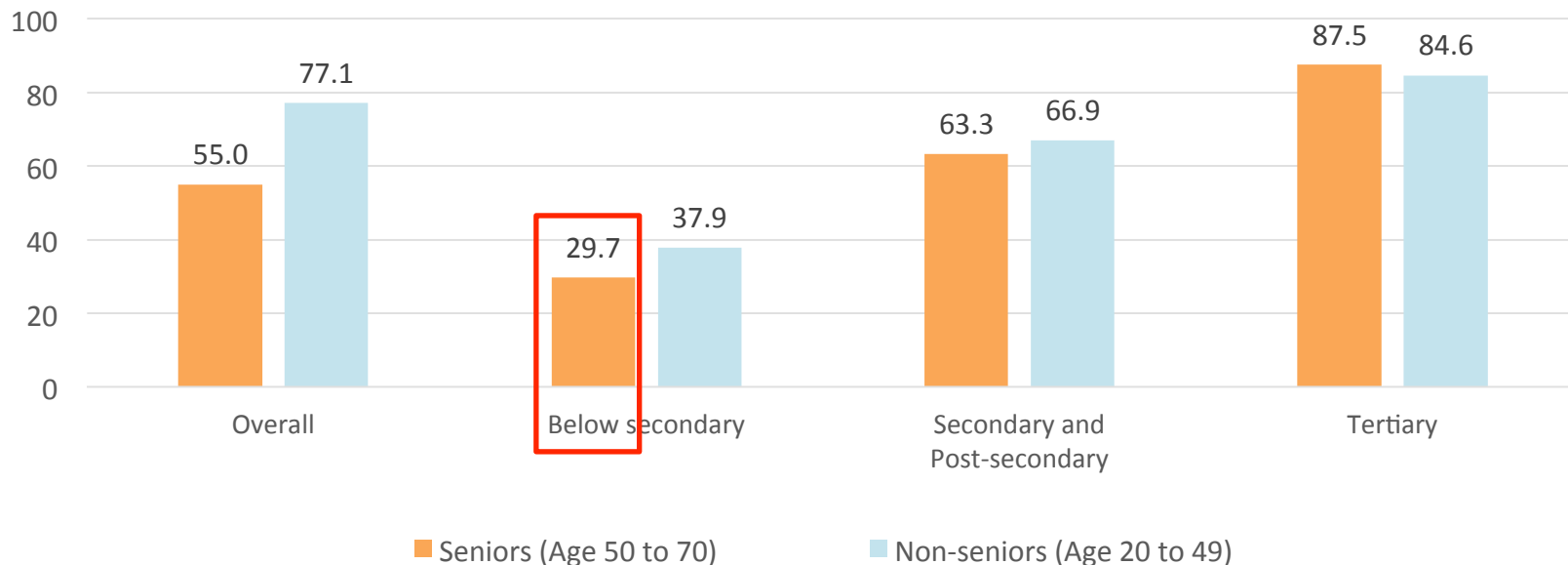




## Seniors with low education attainment report **low confidence in own literacy skills**

**3 in 10** seniors with below secondary education are confident in their literacy skills

*% Confident in own literacy skills, by age and education*





# Conclusion

- Developed a framework to measure lifelong learning, to provide a way to assess the current state and future progress of lifelong learning in Singapore
- Identified patterns related to lifelong learning in Singapore
  - Education attainment and age are the two key factors in explaining participation and perceptions in lifelong learning
  - At the same time, having confidence in own skills matter
- *Technologies for learning* and *learning to learn* are important elements to enable lifelong learning, especially amongst seniors



## What else can we do?

- Using our framework, examine how participation in and perceptions on lifelong learning in Singapore may impact individual life-wide outcomes
- With future iterations, track trends in lifelong learning over the years



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**Thank you**

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