

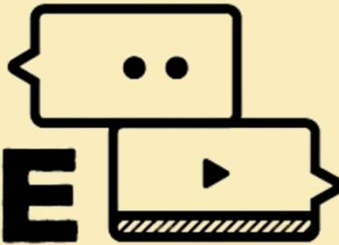


28TH MAY 2020

EDUCATION CRASH COURSE

Brought to you by First Class GP

**ASK ME
ANYTHING**



Q&A

Scan the QR Code

You can ask questions there later.





WEBINAR FLOW

What will be happening

Introduction

Three essay questions:

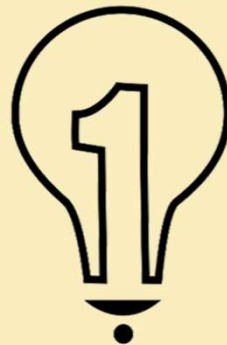
- Are schools still relevant today?
- Can education solve poverty?
- Should education focus only on what is important?

Case Study

Short Quiz

Q&A

KP Chuah



FIRST CLASS



HOW TO PARTICIPATE

Do participate in the chat, Q&A

Moderator

Students/tutors

Bring your paper/pen, content booklet at the end

Recording will be available on our youtube

technical issue? Be patient.

**What kind of
Education questions
can you expect?**

Efforts in Education

Millenium Development

Goals (MDG)

Ran from 2000-2015, which encompassed 8 goals, goal #2 was to achieve universal primary education.

Enrolment in primary education in developing regions reached 91 per cent in 2015, up



Sustainable Development Goals

(SDG) aka Global Goals

To expand and continue the legacy of MDG from 2015-2030, it seeks inclusive and equitable quality education and hopes to promote lifelong learning opportunities for all.

SDG has 17 goals and goal number 4 (SDG #4) focuses on education.



SDG #4 Aims

To ensure by 2030, that all girls and boys complete free, equitable and quality primary and secondary education.

To ensure equal access for all women and men to affordable and quality technical, vocational and tertiary education, including university.

To substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship.

Eliminate gender disparities in education.

Ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous people and children in vulnerable situations.

Educating Girls

A UNESCO study of 100 countries in 2006 revealed that educating girls and reducing the gender gap can promote democracy.

Malala Yusofzai, a Pakistani schoolgirl, stood up against the Talibans to defend education for girls. In 2012, she was shot by a Taliban gunman in the head.



Educating Girls

Michelle Obama led the Let Girls Learn programme to lift people out of poverty by educating girls all over the world.

USAID has invested over \$600 million dollars on Let Girls Learn programs in 13 countries across Africa, the Middle East, Asia and Latin America



A black and white photograph of a large crowd of graduates in caps and gowns, seated in rows, viewed from behind. The graduates are wearing black caps and gowns. Some caps have white tassels. The crowd is dense, filling the frame. A yellow rectangular box is overlaid on the center of the image, containing the text "Are schools still relevant today?".

Are schools still relevant today?

QUESTION 1

Modern Education

Are schools
still relevant
today?

- Too expensive
- Induces too much stress
- Some areas of study are economically irrelevant
- Online learning platforms exist
- Unnecessary
- Economic Usefulness
- Social Mobility
- Motivation
- Further one's passion and aptitude
- Furthers one's curiosity

A close-up photograph of a person's hands holding an open, empty black wallet. The wallet is held horizontally, with the left hand supporting the bottom and the right hand holding the top. The interior of the wallet is visible, showing several empty compartments and a zipper. A yellow rectangular box is overlaid on the center of the wallet, containing the text "Too expensive" in black. The background is a plain, light-colored wall.

Too expensive

Too expensive

In America especially, college and university education is expensive. Many students take out a bank loan to finance their studies.

Former President Barack Obama only **finished paying his tuition loan at the age of 40.**

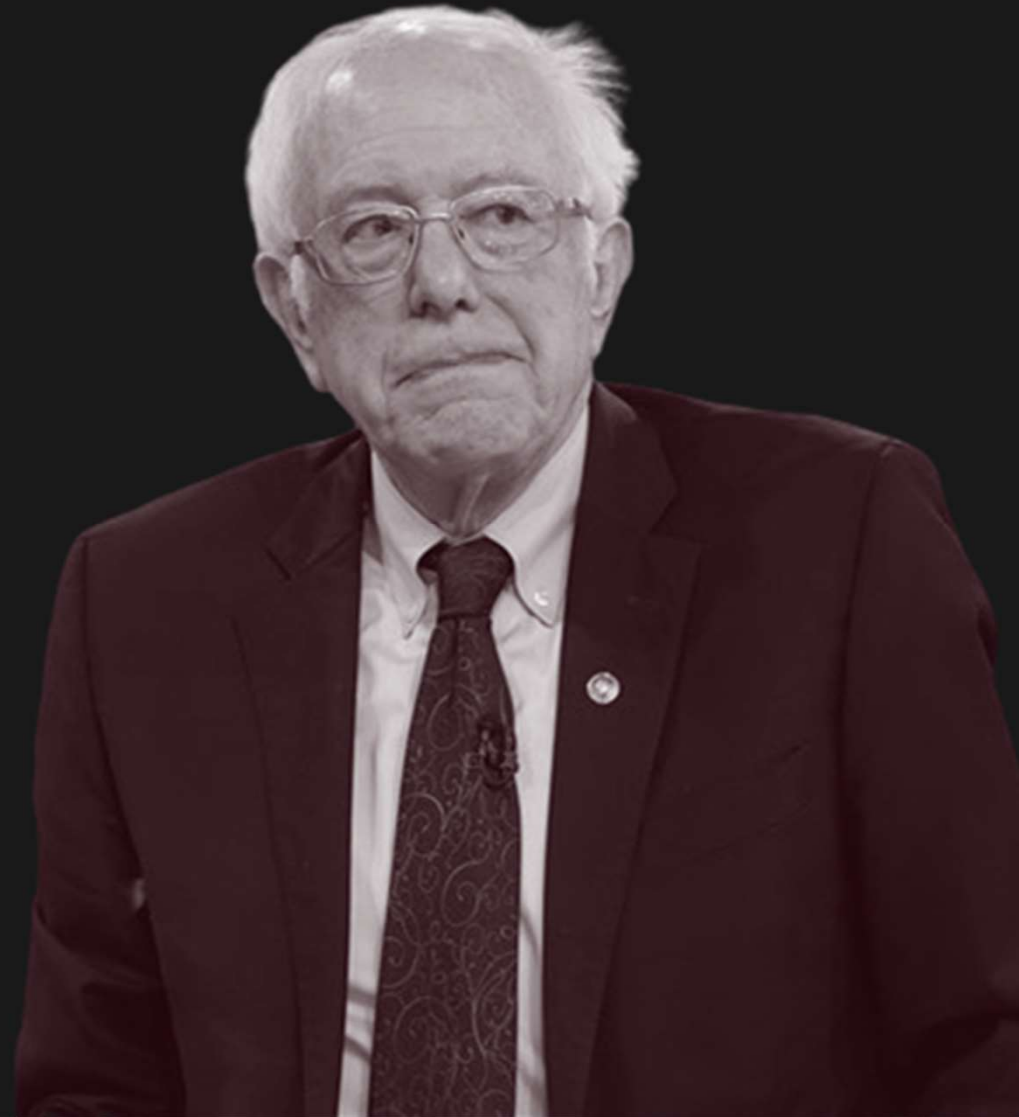
Student loan debt in the United States was **~\$1.6 trillion in 2019** which was ~7.5% of 2019 GDP.

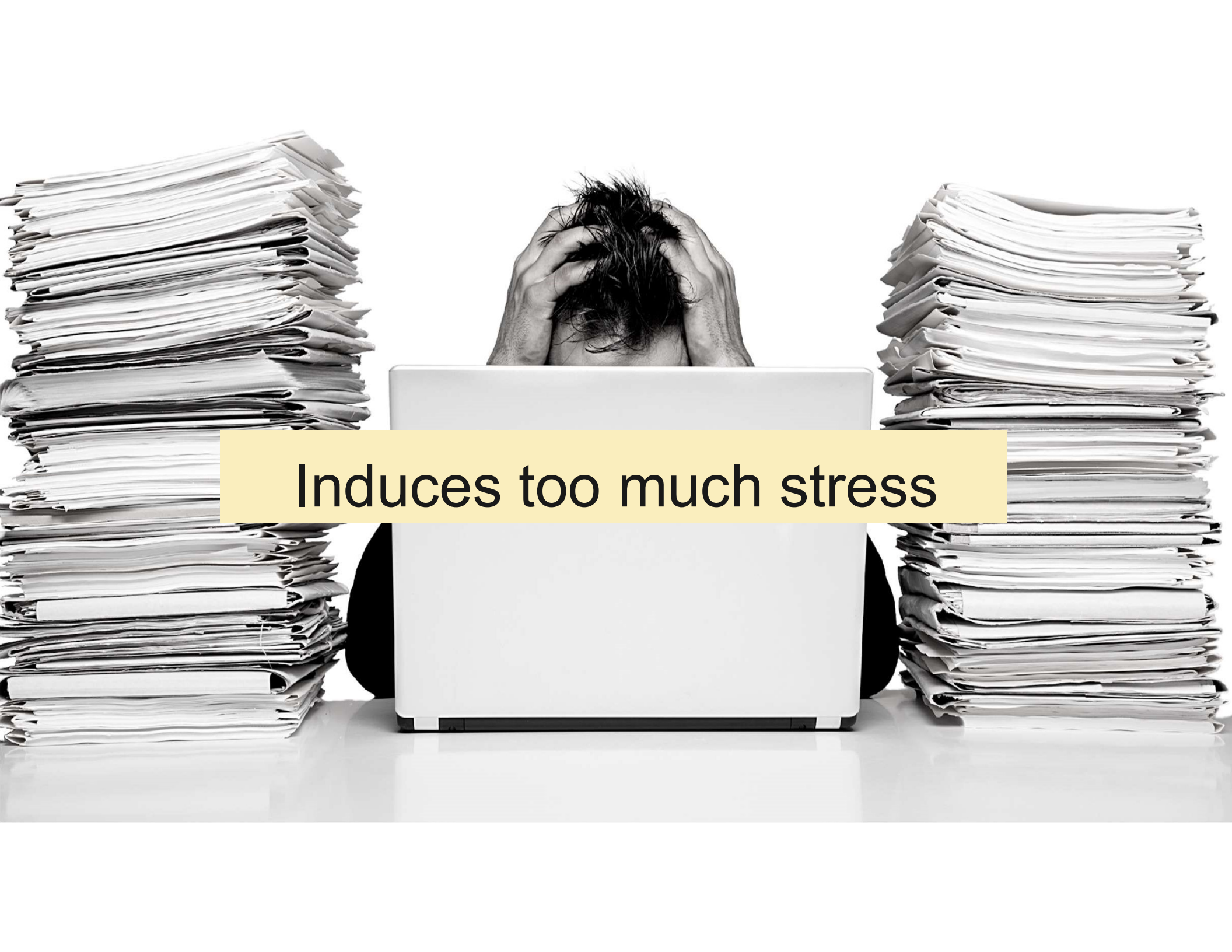


Too expensive

In June 2019, Bernie Sanders offered a new proposal that would cancel \$1.6 trillion of student loan and debt for 45 million Americans.

“This proposal completely eliminates student debt in this country and **ends the absurdity of sentencing an entire generation** ... to a lifetime of debt for **the crime of doing the right thing** - and that is going out and getting a higher education.”



A black and white photograph depicting a person sitting at a desk with a laptop. The person's head is buried in their hands, suggesting stress or frustration. They are surrounded by two massive, towering stacks of papers on either side of the laptop. A yellow rectangular box is superimposed over the center of the image, containing the text "Induces too much stress".

Induces too much stress

Stress

In China, the "**Gaokao**" is an **extremely high-stakes university entrance examination**. In 2019, 10 million students took the Gaokao.

It is a **make-or-break examination** especially for students from impoverished backgrounds as they see this as the only opportunity to escape the poverty cycle.

In 2015, a secondary school in Hebei province has installed cage-like "anti-suicide" barriers to **prevent stressed students jumping to their deaths**.

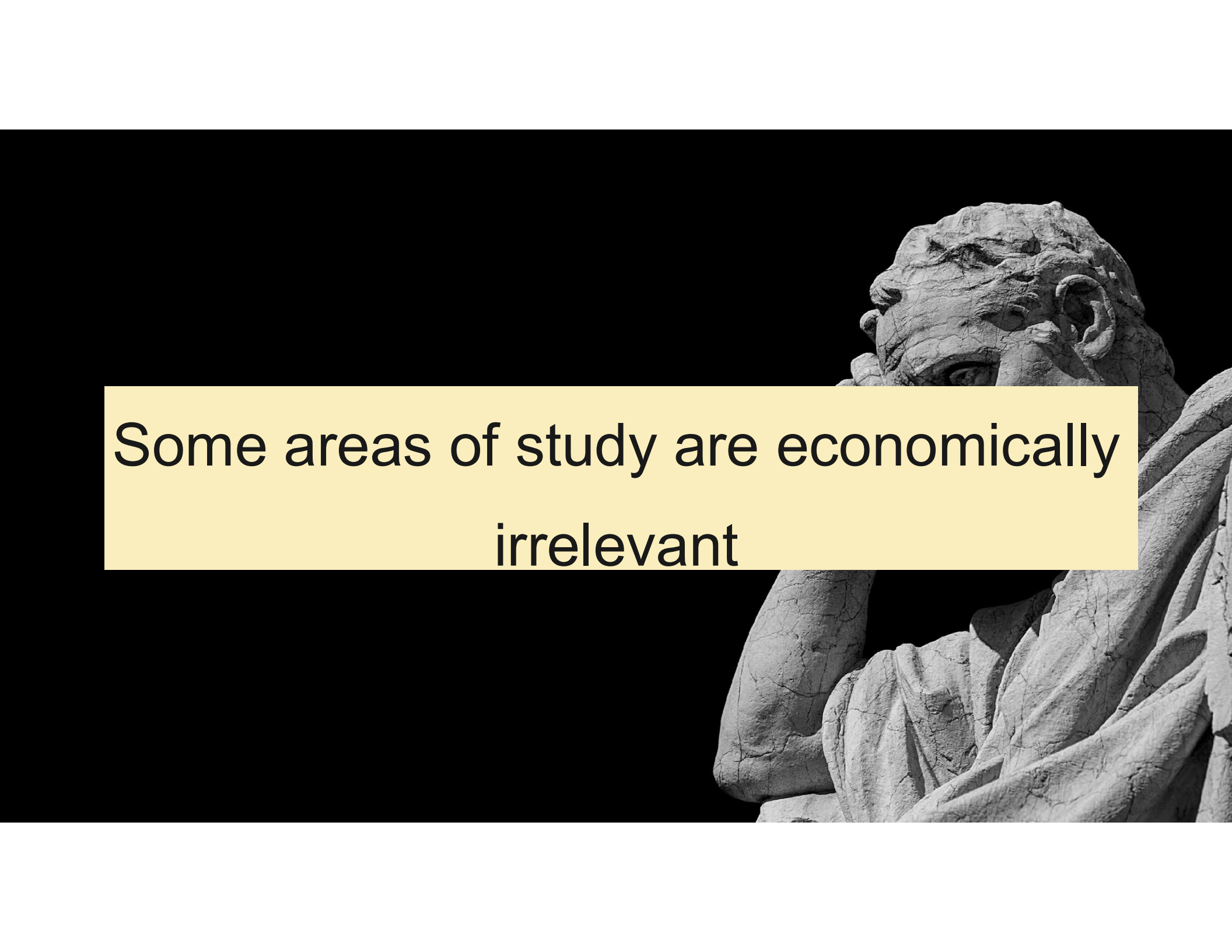


Stress

In a 2019 survey of 43,000 US students from high-performing schools by Challenge Success, 3/4 of high school students reported **“often or always feeling stressed” by their schoolwork.**

More than **two-thirds of high-schoolers** reported being “often or always worried” about **getting into the college of their choice.**





Some areas of study are economically
irrelevant

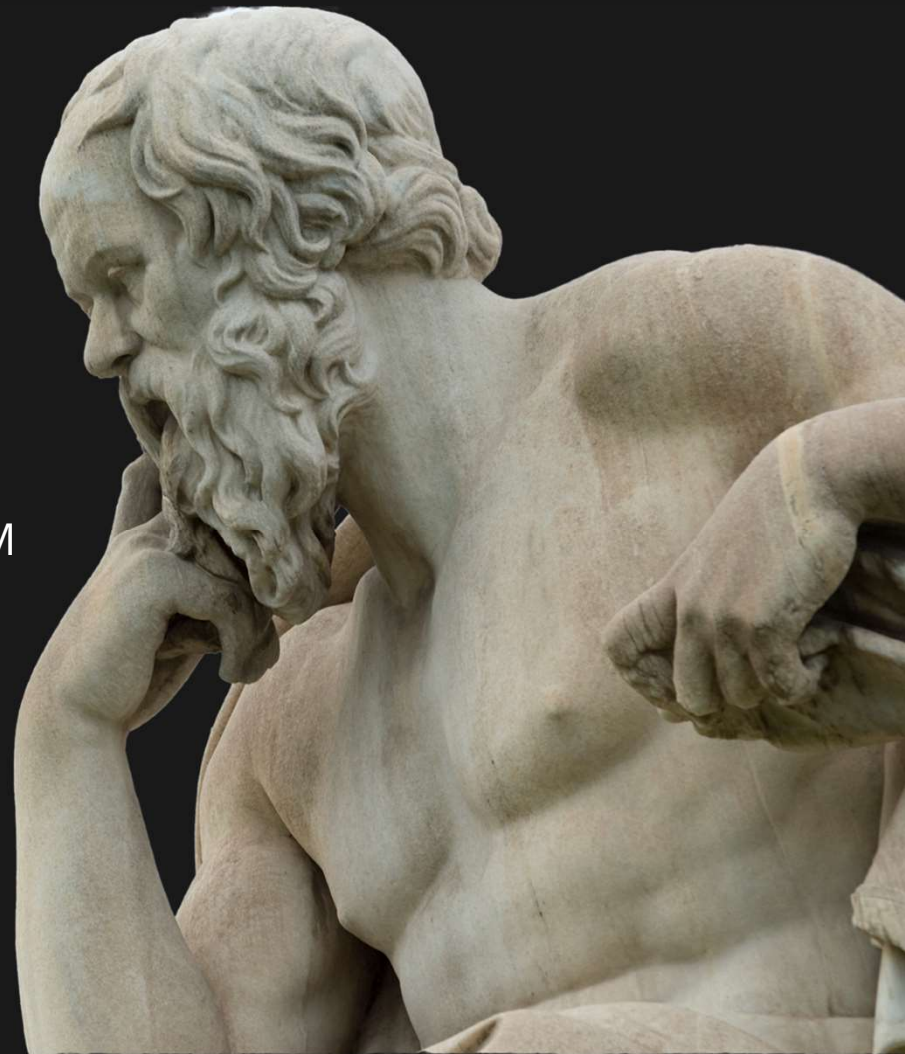
Economically Irrelevant

Liberal Arts equip students with no specific skillsets.

Students learn about Laws, History, Philosophy, Literature and a mixture of electives from other faculties.

A Liberal Arts degree costs just as much as most STEM degrees. In 2019, a study found that **Liberal Arts graduates earn significantly lower compared to STEM graduates.**

BUT, Liberal Arts graduates **caught up** with STEM graduates later.



Economically Irrelevant

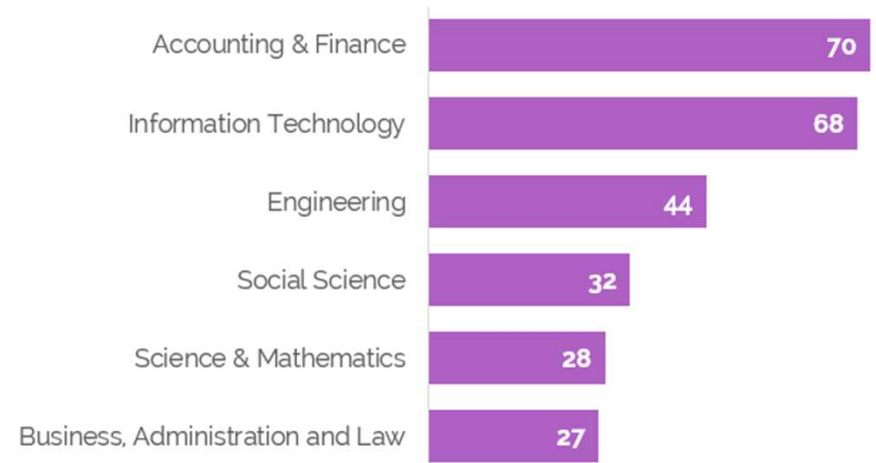
A 2019 survey by **YouGov** found that **over half** (53%) of Singaporean graduates **work in fields unrelated to what they studied**.


Most (57%) respondents said their degrees were still “very useful”. **Around four in 10** said their degrees were **only “somewhat useful”**.

Nonetheless, almost all (99 per cent) of all graduates surveyed said that having a university degree was important.

Accounting & Finance students most likely to end up with related job

Which of the following best describes the field of the university degree you studied? How related, if at all, is your current job to your university degree?
% who answered 'highly related'



A black and white photograph of a man with short dark hair, wearing large over-ear headphones and a light-colored shirt with a small dot pattern. He is sitting at a desk, looking down at a laptop. His hands are on the keyboard. The laptop screen displays the words 'ONLINE STUDY' at the top, followed by a small image of a person and some text. The background is bright and out of focus, suggesting a window or a bright room. A yellow rectangular banner is superimposed over the middle of the image, containing the text 'Online learning platforms exist' in a black, sans-serif font.

Online learning platforms exist

Online Learning

Massive Open Online Courses (MOOCs) are aimed at unlimited participation and open access via the web.

You can learn anything at no cost or upgrade to receive certification. The courses are offered by **prestigious universities** such as Harvard, MIT and Stanford.

Machine Learning: Master the Fundamentals/ Stanford University **had over 1,122,031 enrolments since October 2011.**

The Coursera logo, featuring the word "coursera" in a blue, sans-serif font.The Udemy logo, featuring the word "udemy" in a green, sans-serif font.The edX logo, featuring the letters "ed" in pink and "X" in blue, with a grey "d" in the middle.The Udacity logo, featuring a large orange "U" followed by the word "UDACITY" in a grey, sans-serif font.

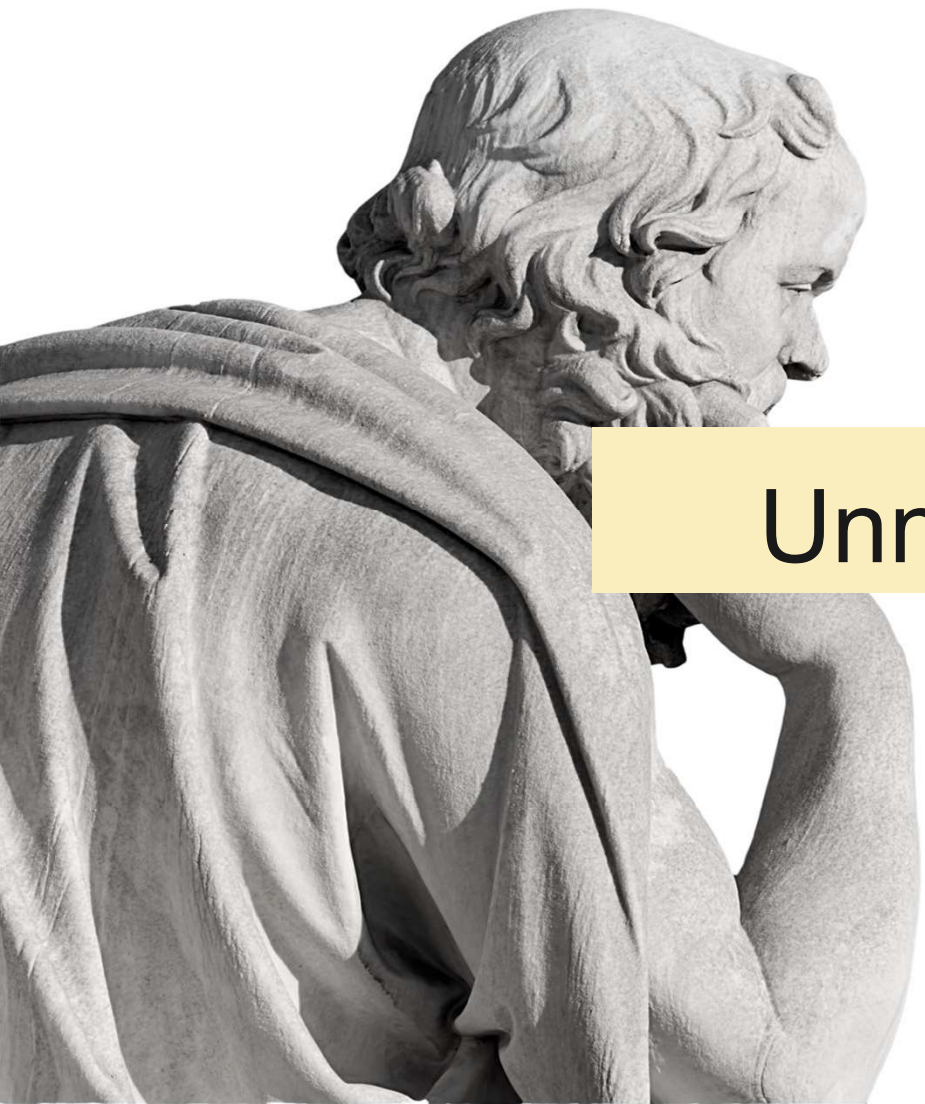
Online Learning

TIME Magazine named **Salman Khan** one of its “100 Most Influential People in the World” in 2012.

He founded **Khan Academy**, the free online learning tool that is showing up in classrooms and in homes all around the world

Today, Khan Academy is home to more than **3,000 lessons that allow students to learn, practice, and get help at their own pace.**



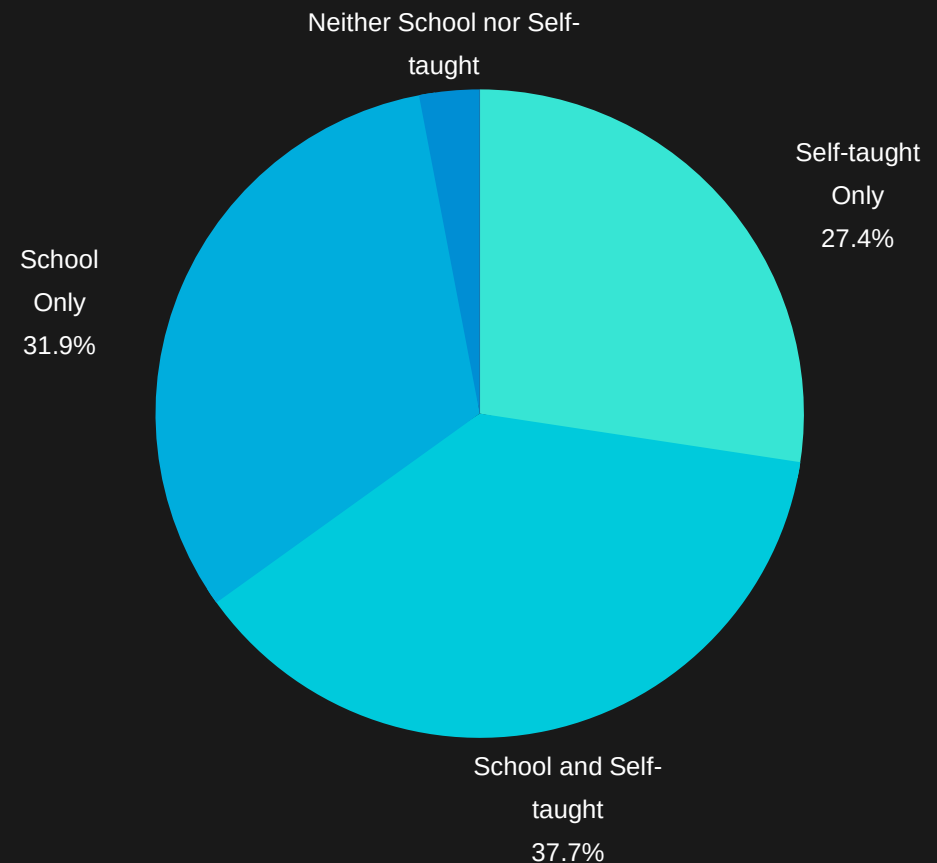


Unnecessary

Unnecessary

One survey of around 10,000 developers by HackerRank found that even though 76% of tech students are pursuing a degree in computer science, **65% of all student developers say they are at least partially self-taught.**

And nearly **one third of all developers said they're completely self-taught.**



東証一部 1st Section	944.66	百万株 mil shares	11.00
東証二部 2nd Section	93.88	百万株 mil shares	11.00
マザーズ Mothars	34.80	百万株 mil shares	11.00
JASDAQスタンダード Standard	81.55	百万株 mil shares	11.00
ETF		百万口 mil units	
J-REIT	81955	口 units	11.00

現在值	Current	1716.26
前日比	Change	-49.43
始值	Open	1733.02
高值	High	1733.53
安値	Low	1708.10

現在値	Current	21221.28
前日比	Change	-669.58
始値	Open	21507.74
高値	High	21510.30
安値	Low	21128.52

東証一部 1st Section	1717763	百万円 Million Yen	11.00
東証二部 2nd Section	29680		
マザーズ MOTHERS	51668		
JASDAQスタンダード Standard	58790		
ETF		百万円 Million Yen	
J-REIT	13579	百万円 Million Yen	11.00

現在値	15202.40
Economic Useful	
高値	High 15352.04
安値	Low 15129.72

	現在値 Current	前日比 Change
ドル	108.89 円	-0.64
ドル	108.80-81 円	+0.08
ワールド円レート対ユーロ (100/JPY World)	133.32-37 円	+0.16
ドル円レート対ポンド (100/GBP)	151.60-64 円	+0.36

Economic Usefulness

[illegible]

Economic Usefulness

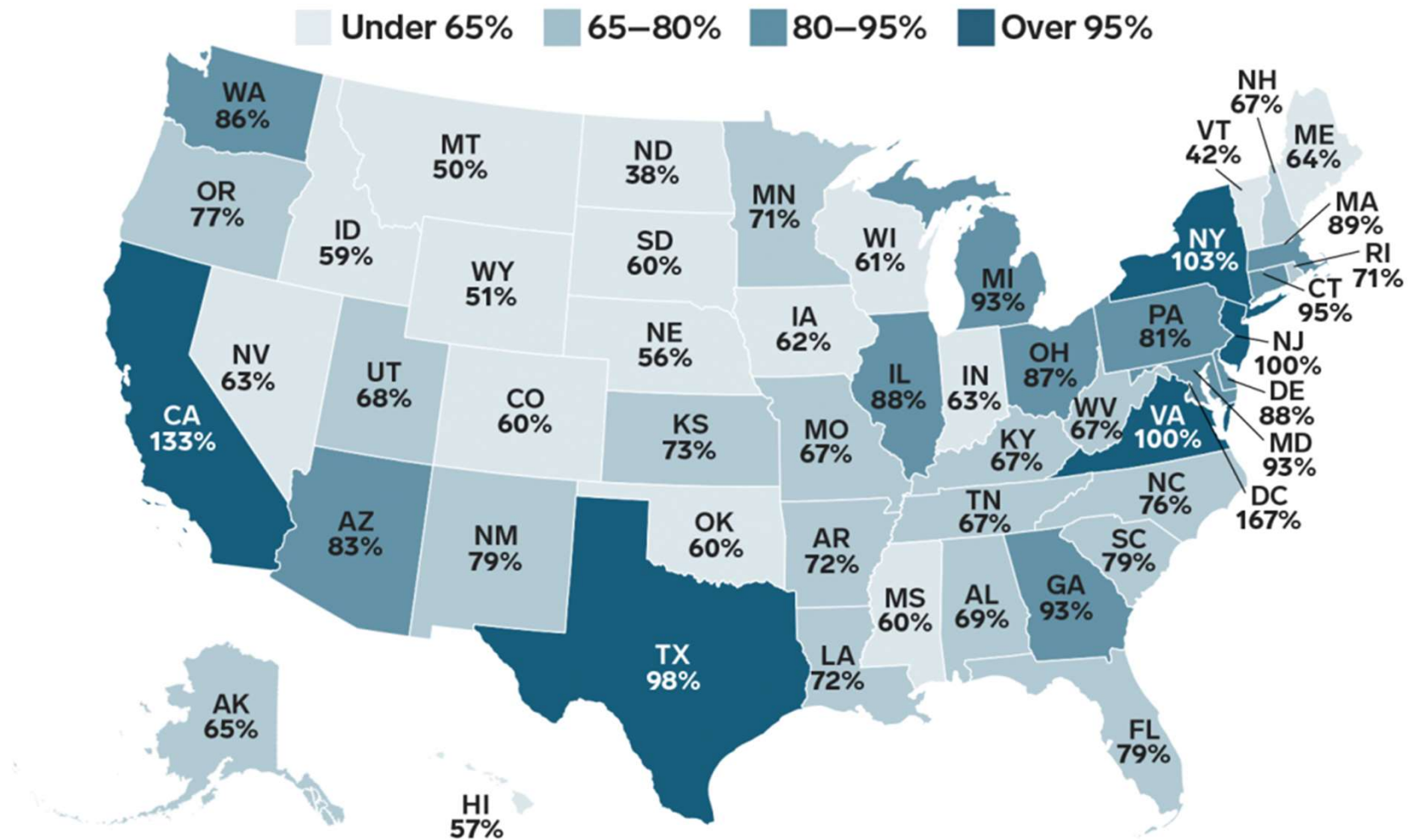
A Business Insider analysis in 2019 found that **in every US state, earnings for college graduates exceed the earnings for those with less than a bachelor's degree.**

Washington, DC, has the highest pay disparity, with a **167% difference** in earnings. The lowest is in **Dakota**, with a **38% difference**.

That can amount up to an extra \$700,000 over the course of a lifetime.



Percent difference in median earnings between college grads and non-grads





Social Mobility

Social Mobility

The two best specialised high schools in New York City, Stuyvesant High School and the Bronx High School of Science, are known for their **disproportionately large intake of meritorious Asian students of humble origins** (who form over 60% of the cohort in both schools).

These students are often first- or second- generations immigrants for whom **education** **the only way to enter the professional class**



Social Mobility

60% of students holding the **highly prestigious PSC Scholarship** in the past five years have come from RI and HCI.

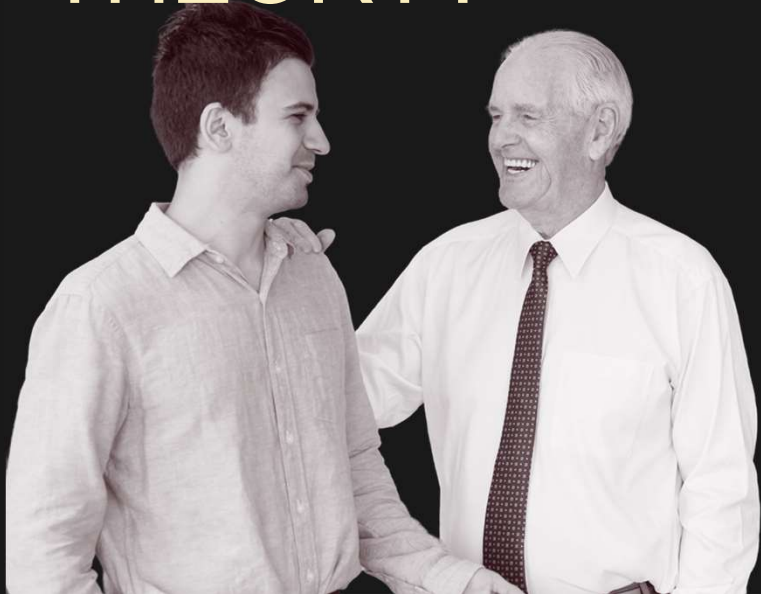
About half of the recipients come from households that live in HDB public housing, while 80% of the Singaporean population live in HDB public housing.





Motivation

EXPLAIN LIKE I'M 5: WHAT IS SIGNALLING THEORY?



IT WON THE NOBEL PRIZE

In 2001 for Economics.

WHILE A DEGREE ITSELF ISN'T WORTH A LOT

Especially if there is a mismatch.

IT ACTS AS A SIGNAL FOR EMPLOYERS

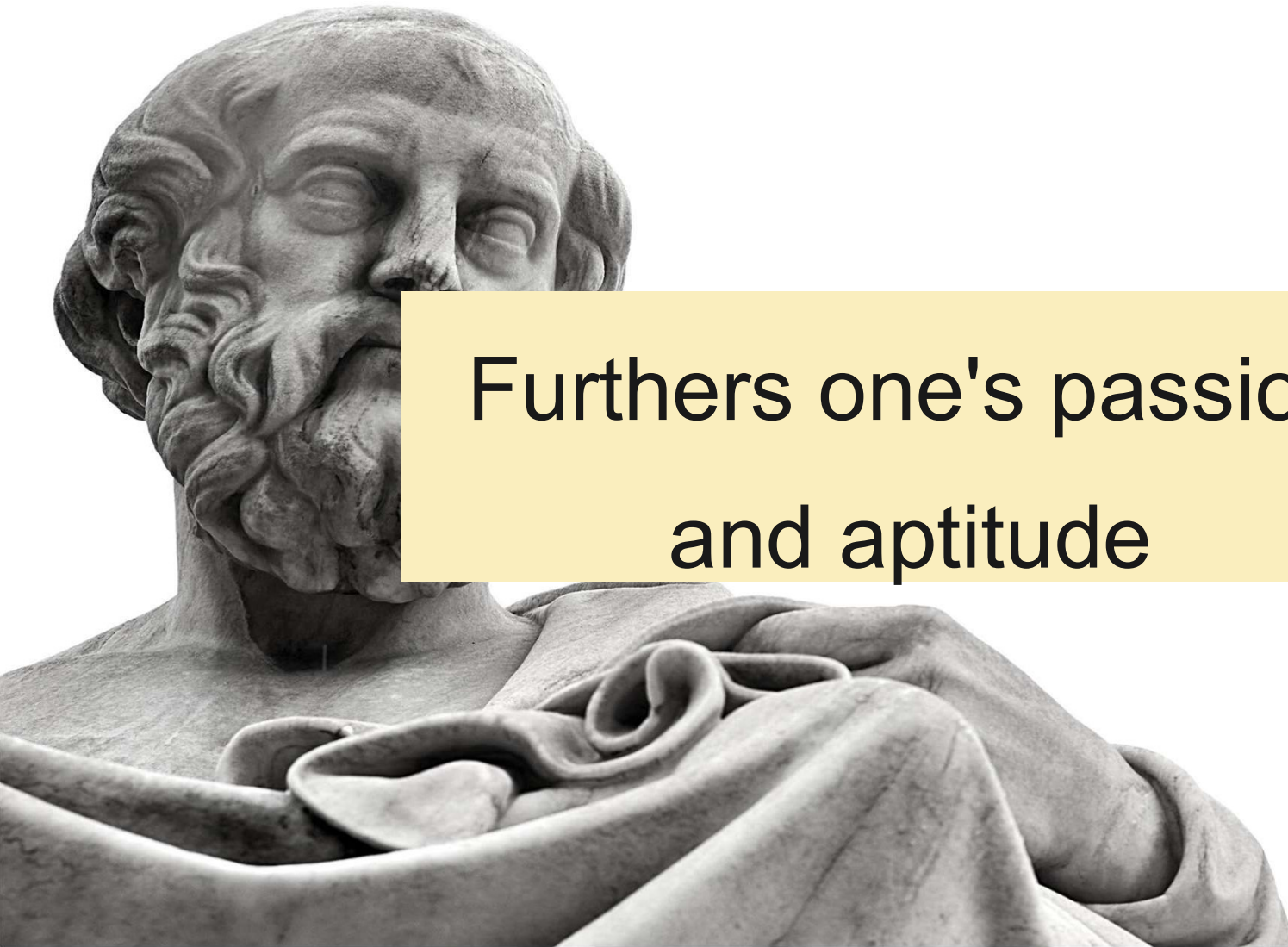
Letting them differentiate between a good employee and a bad employee.

SINCE THEY ASSUME/KNOW

A university graduate tends to be smarter in the first place.

GRADUATE = GOOD

They associate degree holders with positive traits like greater motivation, lower risk of drug abuse and being hardworking.

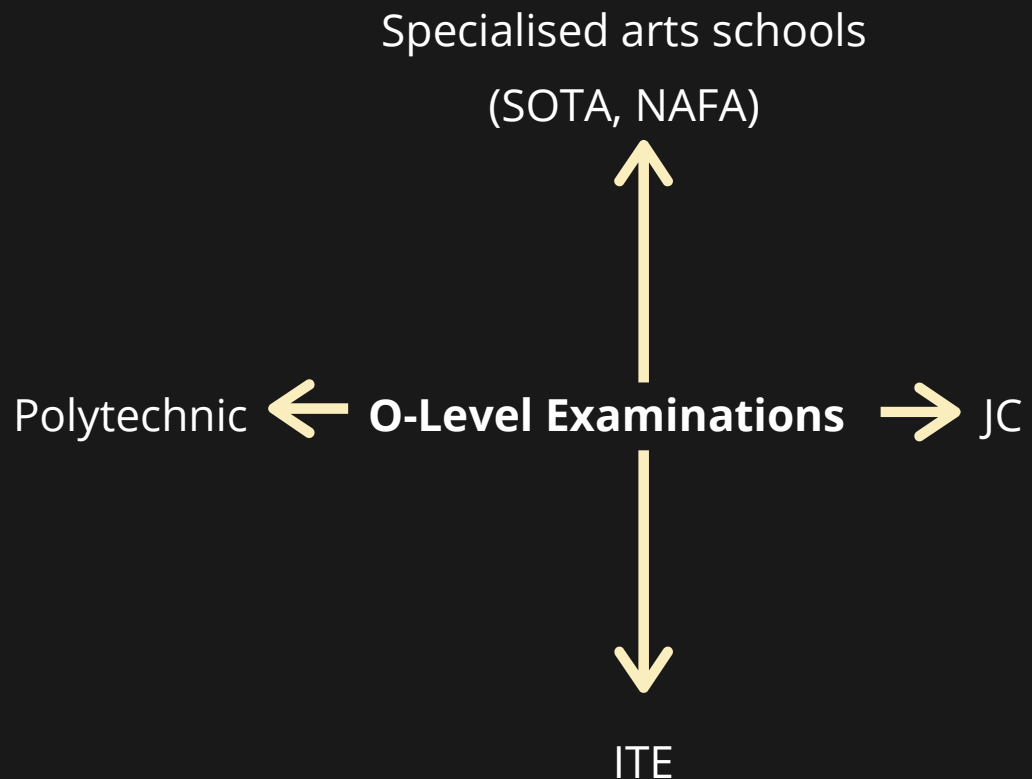


Furtherers one's passion
and aptitude

Further one's passion and aptitude

After the O-Level Examinations, students would receive booklets that include roadmaps illustrating the different paths that they can take.

Students can pick up the necessary skills to gain employment depending on the field **they intend to pursue in the future and their unique aptitudes.**






Furtherers one's curiosity

Further one's curiosity

Lee Kuan Yew famously said, “my definition of an **educated man** is a man who **never stops learning and wants to learn.**”



QUIZ




Can education solve poverty?

QUESTION 2

Purpose of Education

Can education
solve poverty?

- Empowers the poor and marginalised with knowledge
- Functional illiteracy
- Economic returns of education are very high
- Education helps to improve general livelihood
- Educational quality may be poor
- Inequality is perpetuated in educational systems
- Unemployment is getting more problematic



Empowers the poor and
marginalised with knowledge


Empowers the poor and marginalised with knowledge

Barefoot College engages in **knowledge-sharing** between **skilled professionals** and the **poorest of the poor in rural India**.

Students are taught **solar power, water, education, healthcare, crafts and communication**. Each programme eventually becomes a source of employment.

Single mothers, divorced women, differently-abled and illiterate people are prioritised for training as they are most in need of support and employment opportunities.



A background image of a financial candlestick chart on a black grid. The chart features numerous white and grey candlesticks of varying sizes, some with long wicks, indicating price fluctuations. Two thin, light-colored lines trend upwards from left to right across the chart. A semi-transparent yellow rectangular box is centered over the chart, containing the text.


Economic returns of education are
very high

Economic returns of education are very high

Social scientists posit that for **every US\$1 spent** on education, between **US\$10 to US\$15 could be generated in economic growth.**

The growth includes benefits such as lower crime rates, better physiological and psychological health, as well as nutrition.



A black and white photograph of a rural setting. In the foreground, a large, dark, rounded cooking pot sits on a small fire. To the right, a person is partially visible, wearing a patterned garment. In the background, several people are standing near a structure with a corrugated metal roof. The scene is set in a dusty, open area with some debris on the ground.

Education helps to improve general
livelihood

Education helps to improve general livelihood

Education can go beyond knowledge, theories and literacy. Sometimes, simple but life-changing skills can be imparted to improve one's livelihood.

In war-torn regions like Sudan, NGOs have **prioritised health education over lessons in literacy** and are educating young children and families in areas of basic hygiene to **lower their infant mortality rate as well as reduce the spread of disease.**



A black and white photograph of a young child sitting on the ground, writing in a notebook. The child is seen from the back, with their head bowed. They are holding a pen in their right hand and writing on a piece of lined paper. The ground is dirt and covered with dry leaves and twigs. A yellow rectangular box is superimposed over the middle of the image, containing the text "Educational quality may be poor".

Educational quality may be poor

Educational quality may be poor

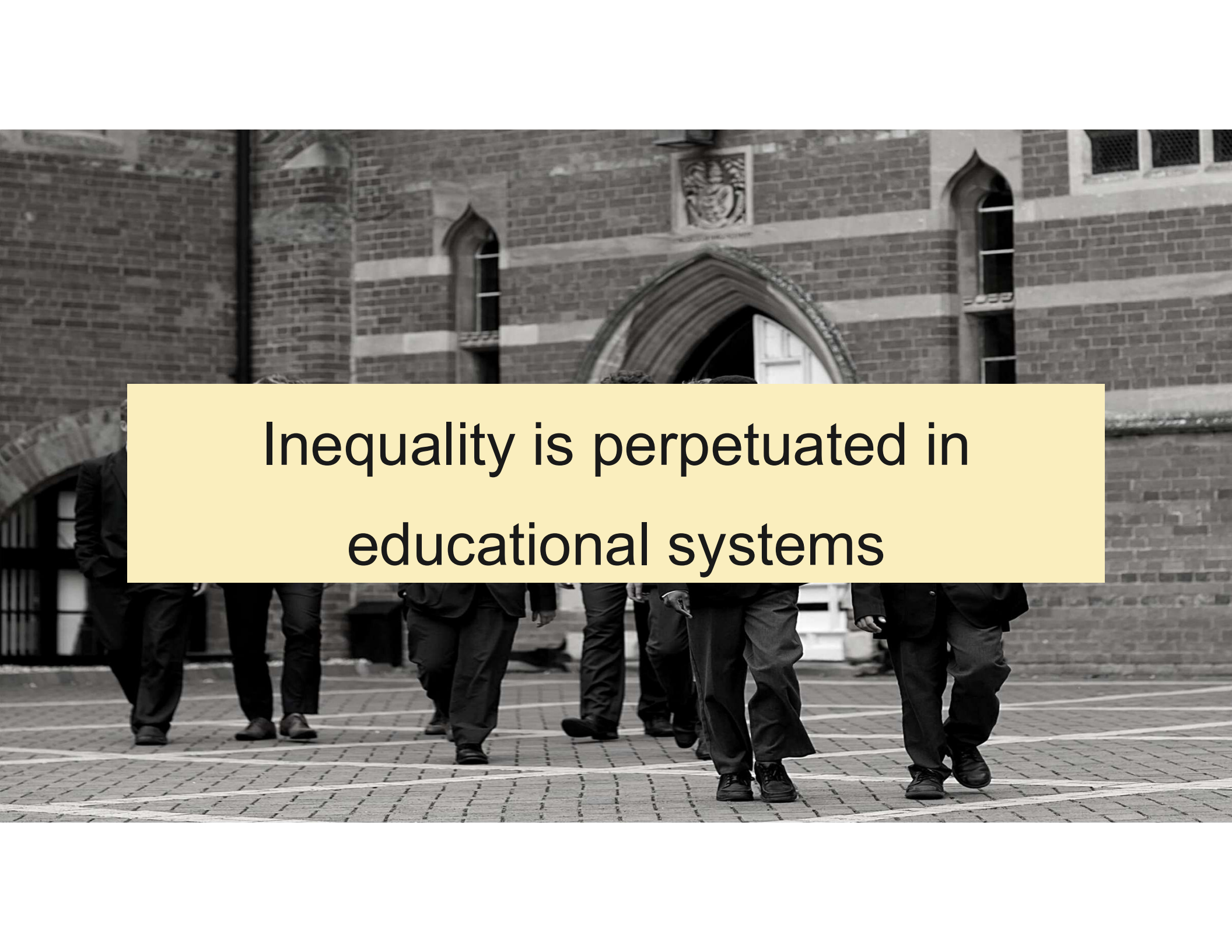
There is an **ongoing education crisis in Pakistan.**

Despite pay raises and improved access to education,
many Pakistani teachers do not show up for work.

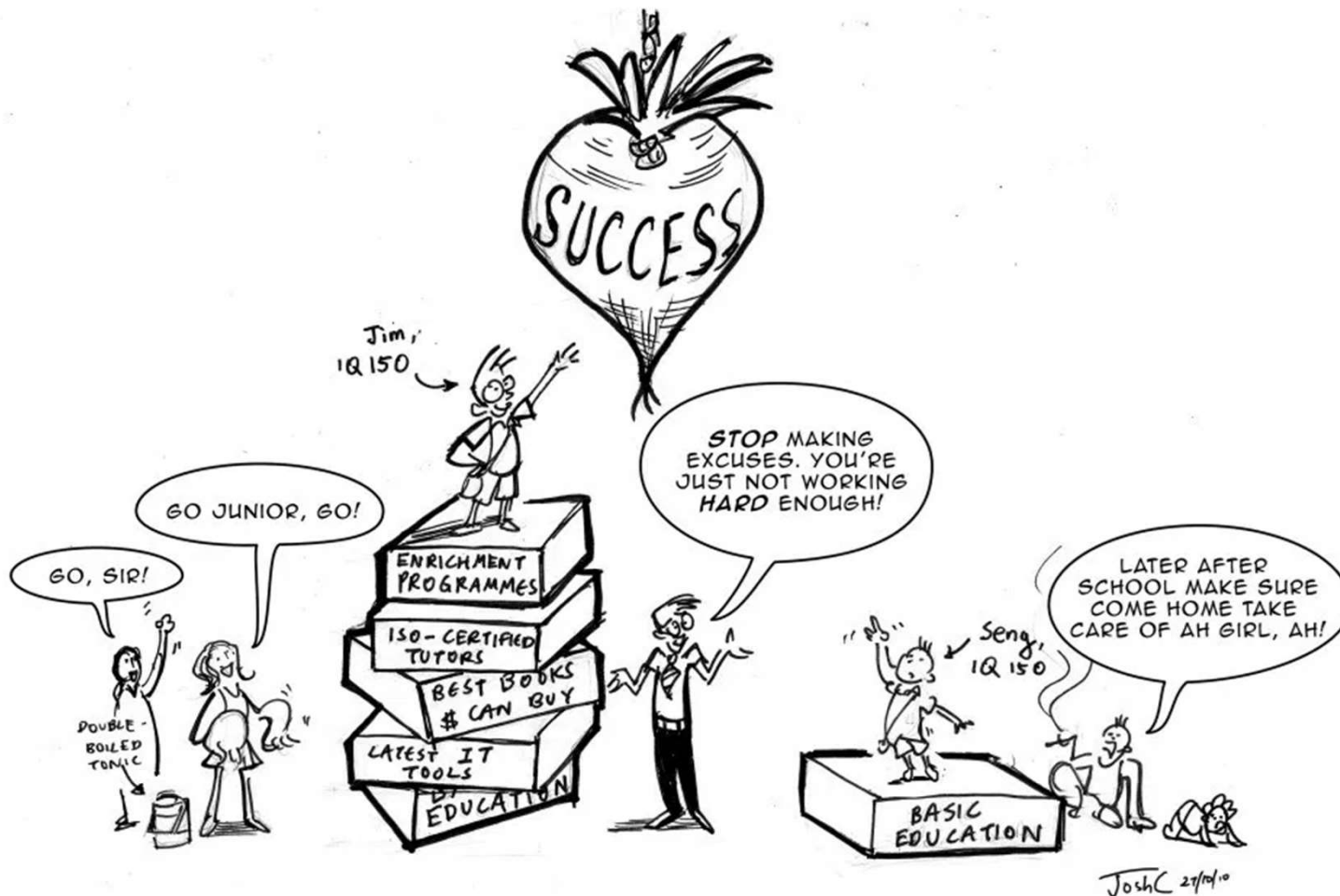
50% drop out of school within the first five years.

Pakistan also has “a deeply-flawed national curriculum that **promotes xenophobia and religious intolerance**”. Thus, few children from minority communities attempt to enrol in government schools.





Inequality is perpetuated in
educational systems



MERITOCRACY

Inequality is perpetuated in educational systems

The **Grammar School** was introduced to improve social mobility for **bright kids with poor backgrounds** who couldn't afford private schools.

However, very few disadvantaged kids get into grammar schools as parents who can afford private tutoring can help their kids pass their exams, do so. **70% of grammar school entrants had some form of private tutoring.**

In fact, **only 3% of grammar school pupils are entitled to free school meals**, which is an indication of deprivation.



Inequality is perpetuated in educational systems

According to a study **Elitist Britain 2019**, while **only 7% of British students went to private school**, these people make up:

- **39% of the Cabinet**
- **65% of senior judges**
- 52% of Foreign Office diplomats

Students



■ pvt ■ public

Judges



■ pvt ■ public

Private school attendance by sector

General Population | 7%



Public Servants | 45%



Whitehall and Public Bodies | 44%



Politics | 44%



Influential Women | 43%



Media | 40%



Business | 31%



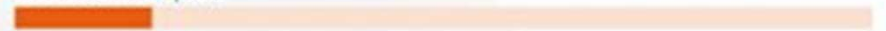
Creative Industries | 29%




Sport | 24%



Local Government | 16%





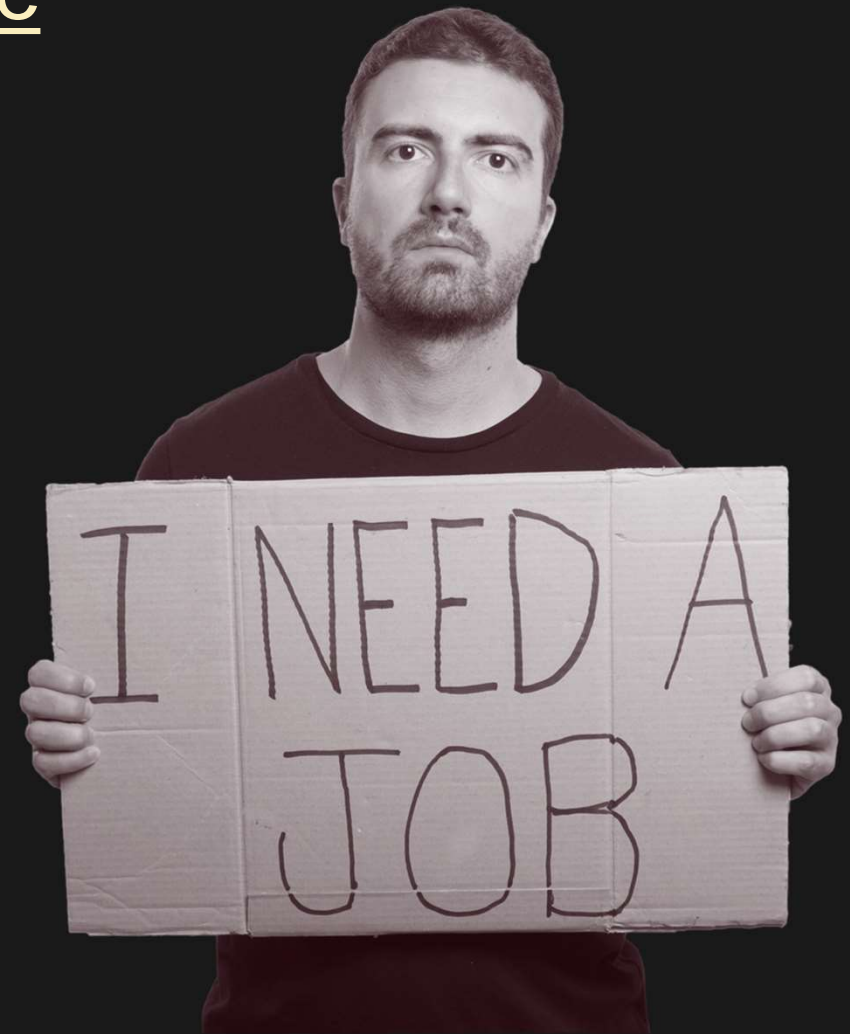
Unemployment is getting
more problematic

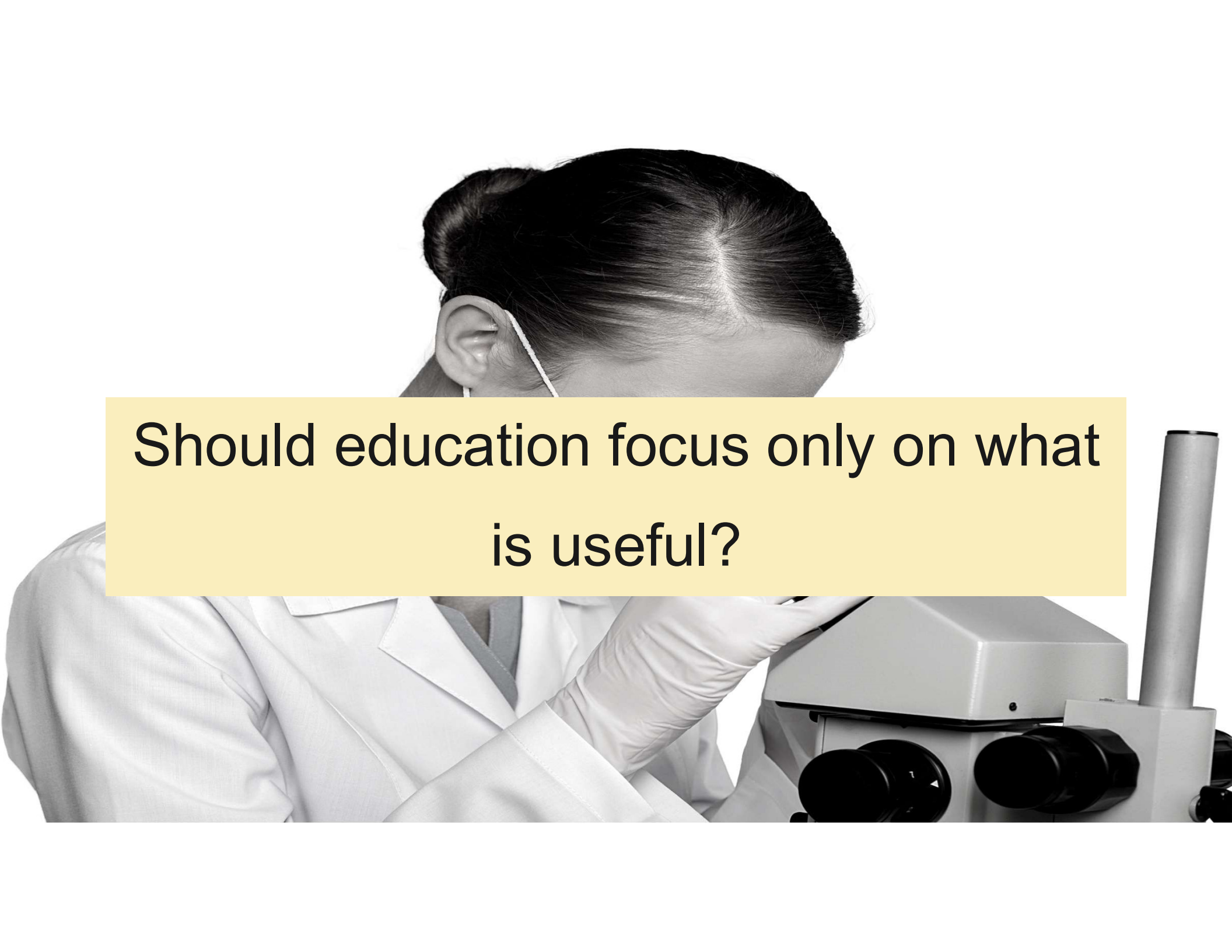
Unemployment is getting more problematic

Youth unemployment is high. 75 million young people are unemployed/underemployed because of **job shortages and skill mismatch**.

Employers complain that they **cannot hire candidates with relevant skills**.

Additionally, the world has a **surplus of graduates** – China universities produce five million graduates per year and in Singapore, almost 23% (a quarter) of the existing workforce have a degree.



A black and white photograph of a person with dark hair tied back, wearing a white lab coat and white gloves. They are looking down at a microscope, with their right hand near the eyepiece. The background is plain white.

Should education focus only on what
is useful?

Estonia

PISA 2018 ranking summary [\[edit \]](#)

The results of PISA 2018 were presented on 3 December 2019, which included data for around 600,000 participating students and Zhejiang emerging as the top performer in all categories. Note that this does not represent the entirety of mainland China.

Mathematics			Science			Reading		
1	 China (B-S-J-Z) ^[note 1]	591	1	 China (B-S-J-Z) ^[note 1]	590	1	 China (B-S-J-Z) ^[note 1]	555
2	 Singapore	569	2	 Singapore	551	2	 Singapore	549
3	 Macau	558	3	 Macau	544	3	 Macau	525
4	 Hong Kong	551	4	 Vietnam	543	4	 Hong Kong	524
5	 Taiwan	531	5	 Estonia	530	5	 Estonia	523
6	 Japan	527	6	 Japan	529	6	 Canada	520
7	 Korea	526	7	 Finland	522	7	 Finland	520
8	 Estonia	523	8	 Korea	519	8	 Ireland	518
9	 Netherlands	519	9	 Canada	518	9	 Korea	514
10	 Poland	516	10	 Hong Kong	517	10	 Poland	512
11	 Switzerland	515	11	 Taiwan	516	11	 Sweden	
12	 Canada	512	12	 Poland	511	12	 New Zealand	
13	 Denmark	509	13	 New Zealand	508	13	 Vietnam	
14	 Slovenia	509	14	 Slovenia	507	14	 United States	
15	 Belgium	508	15	 United Kingdom	505	15	 United Kingdom	
16	 Finland	507	16	 Netherlands	503	16	 Japan	



freemakermc

Singapore

Centralised

The ministry determines the educational outcomes

Streaming (will be replaced by SBB soon)

Students of different abilities are taught separately

Somewhat Free

Miscellaneous fees, uniforms and school materials

Higher Education

Subsidised 75% paid by Tuition Grant

Digital Skills

Since 2020, primary pupils have coding classes thorough a 10-hour enrichment programme after their Primary School Leaving Examination (PSLE) in Grade 6 (12 years old).

Estonia

Decentralised

Individual schools have autonomy over how and what to teach the students.

Mixed Abilities

Students of all abilities in one class

Completely Free

Really free. Even school lunches are provided.

Higher Education

Free for programmes taught in the Estonian language

Digital Skills

Students learn coding from Grade 1 to Grade 4 (7-10 years old)

E-stonia. The Smart Nation

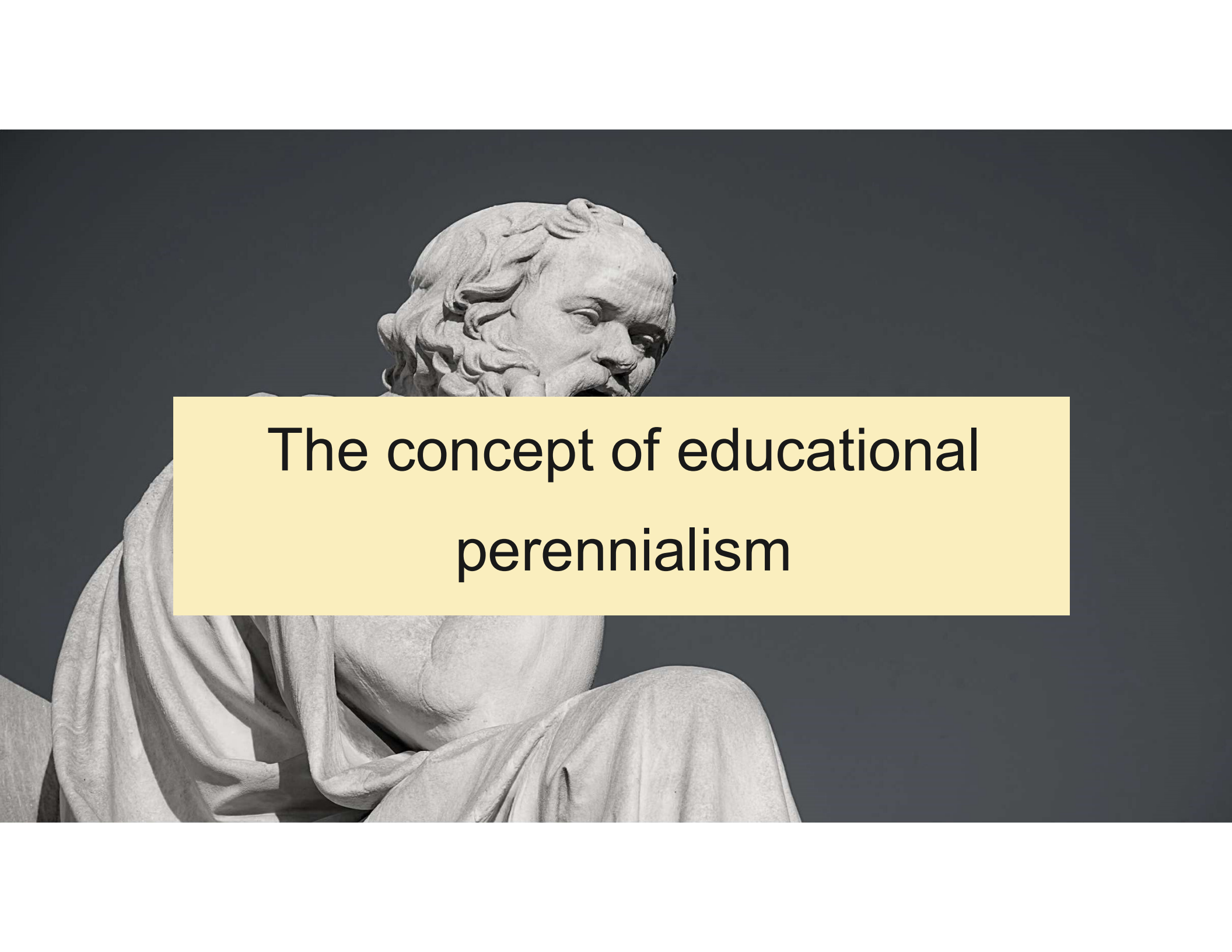
- A famous educational programme called ProgeTiger (Tiger Leap) launched a nationwide scheme to teach school kids from the age of seven to nineteen how to write code.
- E-school system, where a lot of homework is done and graded online.
- Since 2012, children in grades 1-4 have been having coding classes as part of their normal curriculum.

QUESTION 3

Focus of Education

Should
education
focus only on
what is useful?

- The concept of educational perennialism
- Values
- Skills
- Less Arts vs More Arts
- Arts and Sciences complement each other

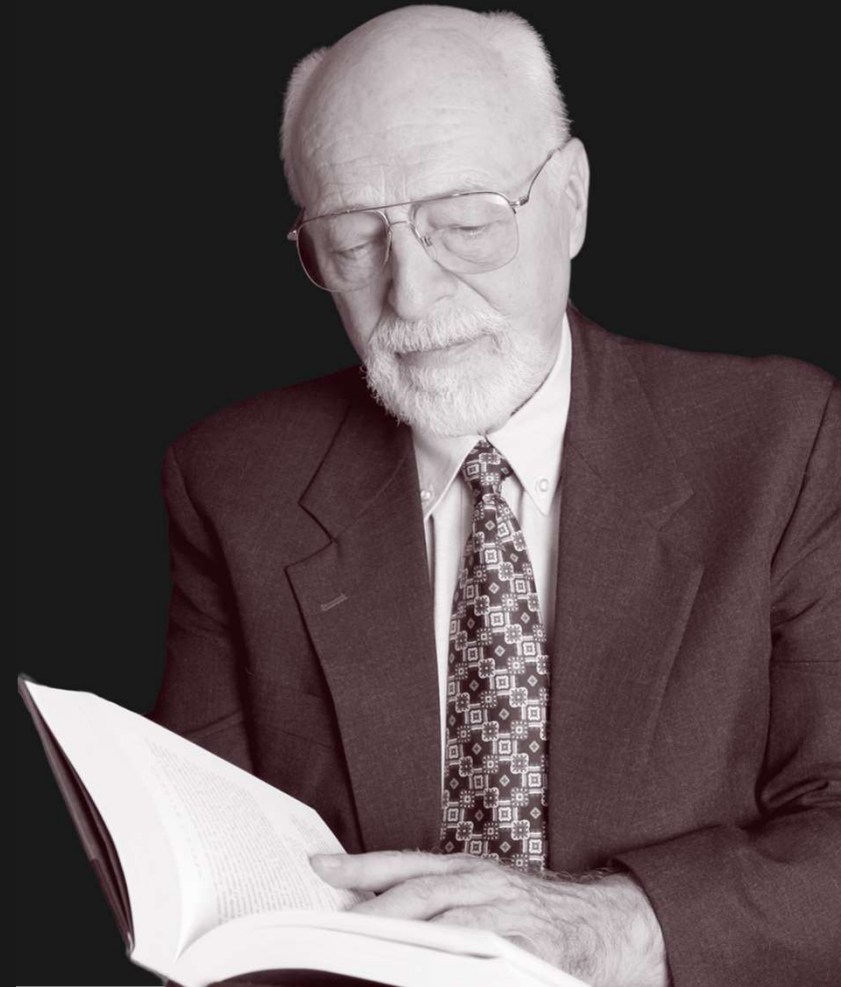
A grayscale photograph of a classical marble statue of a bearded man, possibly a philosopher like Plato or Aristotle, shown from the chest up. The statue has curly hair and a full beard. A semi-transparent yellow rectangular box is centered over the lower half of the statue, containing the title text in black. The background is a solid dark gray.


The concept of educational perennialism

The concept of educational perennialism

Perennialists believe that one should teach the things that they believe are of **everlasting importance to all people everywhere**. The emphasis should be **on principles, not facts**.

Since people are human, one should teach first about **humans**, rather than machines or techniques and **liberal** rather than vocational topics.



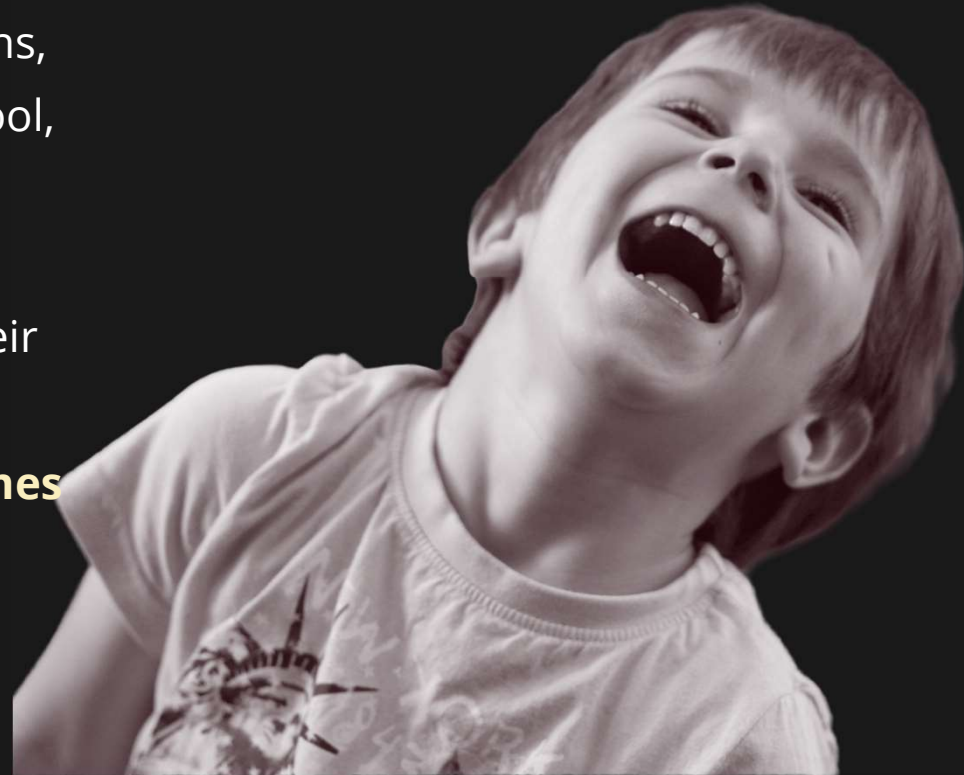


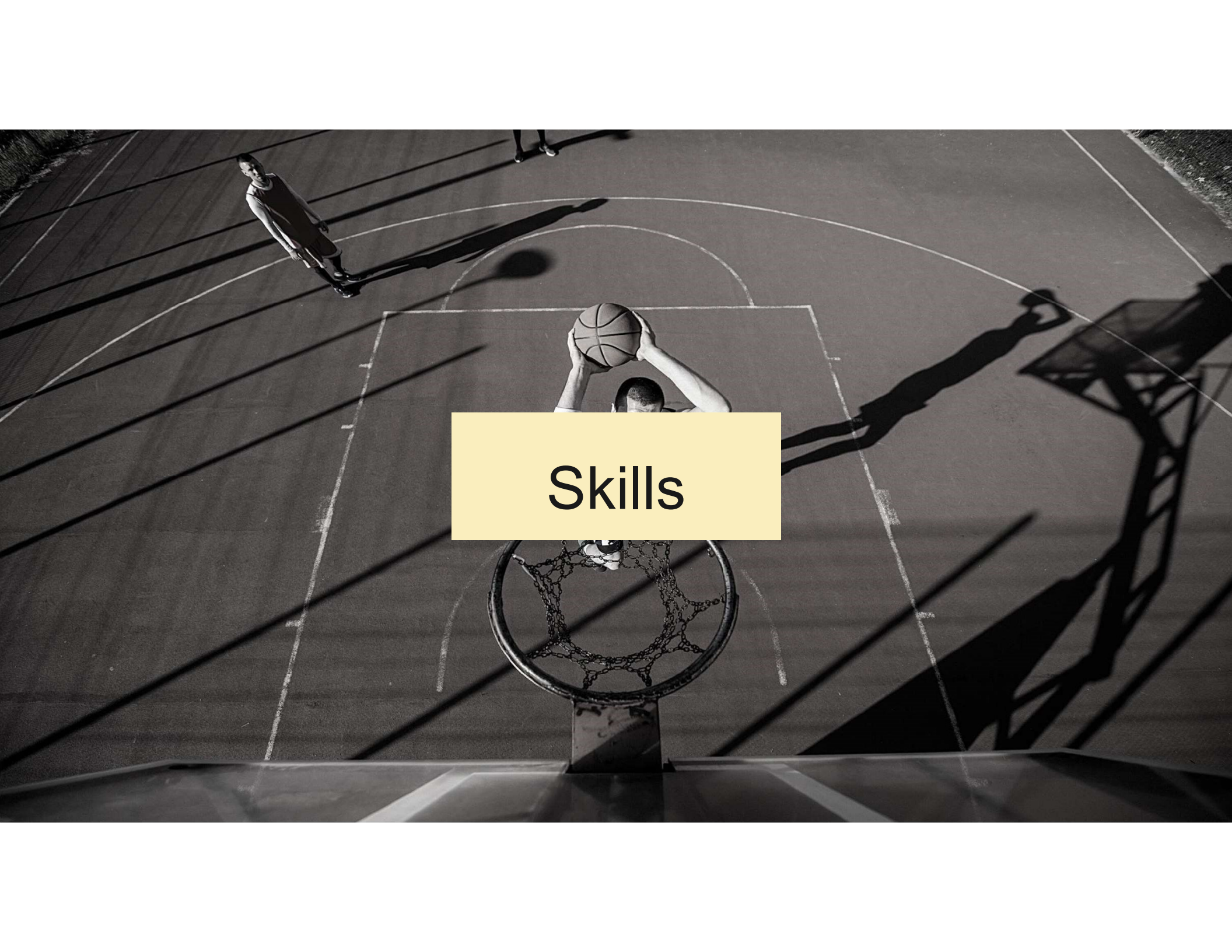
Values

Values

Singapore introduced **Character and Citizenship Education (CCE)** in 2014 to students to ensure that they learn values through three overarching ideas: **identity, relationships and choices** in six domains, starting with self and extending to the family, school, community, nation and the world

In a 2019 study, adolescents who believed that their **parents valued character traits** as much as or more than achievement **exhibited better outcomes at school**, greater mental health and less rule-breaking behavior than peers who believed their parents were **primarily achievement-minded**.





Skills

Values

In January 2013, the Ministry of Education of Singapore conceived the **21st Century Competencies Framework**. It was to be incorporated into the mainstream curriculum as it recognises the importance of moulding students into **responsible, civic-conscious global citizens**.



A high-contrast, black and white close-up of a human eye. The eye is looking slightly to the left. The eyelashes are dark and prominent. A bright yellow rectangular box is superimposed over the center of the image, containing the text "Less Arts vs More Arts" in a bold, black, sans-serif font.

Less Arts vs More Arts

Less Arts

In 1968, the late Mr Lee Kuan Yew called **poetry “a luxury we cannot afford”**.

Instead, he led the country down the road of **scientific and industrial progress**.



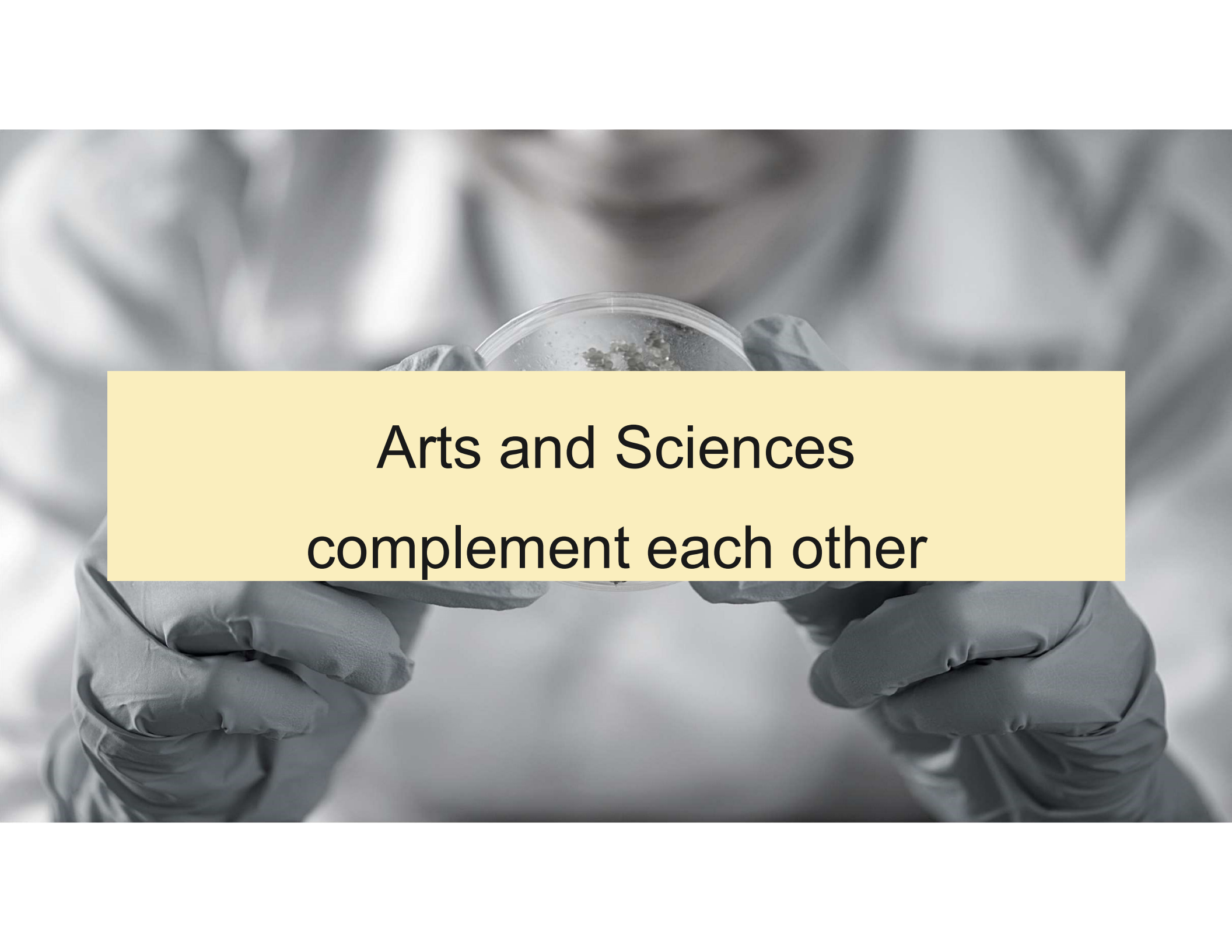
More arts

Literary works like 1984 by George Orwell serves as a reminder to us that **without wisdom and morality, science and technology can lead us to destruction.**

Studying about the Arts also imparts soft skills such as critical/analytical thinking, communication, creativity and empathy.

These soft skills are now highly sought after by employers, a 2019 study found.



A grayscale photograph of a person wearing a lab coat and gloves, holding a petri dish with a sample inside. The person's face is partially visible in the background, looking down at the dish. A yellow rectangular box is overlaid on the center of the image, containing the text "Arts and Sciences complement each other".

Arts and Sciences
complement each other

Art complements Science

Leonardo Da Vinci, famous for his paintings of The Last Supper and The Mona Lisa, was also renowned for his invention of the armoured vehicle, parachute and helicopter.

He contributed greatly to **scientific understanding of human anatomy**, large using his **artistic prowess** to draw out human organs precisely.

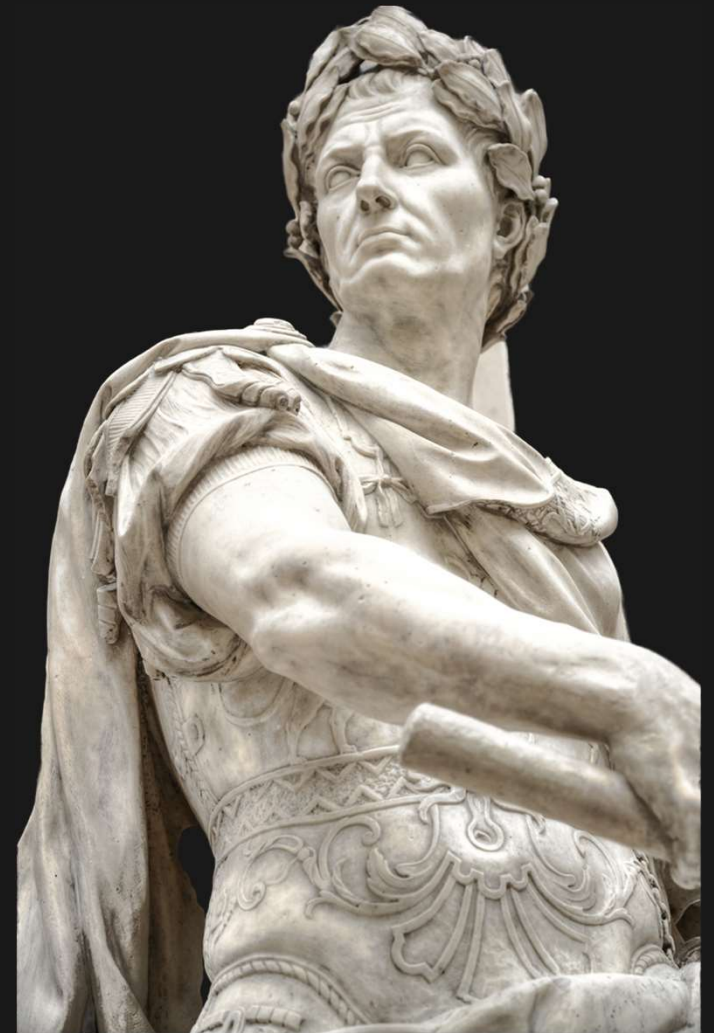


Science complements art

Clodynamics is a transdisciplinary area of research integrating cultural evolution, economic history, macrosociology, mathematical modeling and the construction and analysis of historical databases.

Clodynamics treats history as science. It develops theories that explain processes like the rise and fall of empires, spread and disappearance of religions.

These **theories are translated** into **mathematical models**. Finally, model predictions are **tested against data**.



COS 2019

Remaking Secondary School Pathways



Ministry of Education
SINGAPORE

Current Secondary
School Pathways

PSLE

Express course

Sec 4/Sec 5

O-Level Certificate

JC

N(A) course

N(A)-Level Certificate

Poly

N(T) course

N(T)-Level Certificate

ITE

Secondary School students take most subjects at the level offered by their courses.

**After Full SBB
Implementation**

PSLE

**One Secondary
School Education,
Many Subject Bands**

From 2024, at the start of Sec 1, students can take a combination of G1/2/3 (G is for General) subjects based on their PSLE scores, suited to their pace of learning. Thereafter, their subject levels will be based on their strengths and interests.

Sec 4 in 2027

**One Common
Certificate**
Students will sit for the common national examination and receive a new national certification that reflects their G1/G2/G3 subjects.

In 2028, MOE will implement a new post-Secondary admissions system.

JC, Poly and ITE in 2028



Students will continue to be posted to Secondary schools across three scoring bands.



One Secondary Education, Many Subject Bands

With Full SBB, students can take subjects at G1/G2/G3 academic levels, which are mapped from today's N(T)-, N(A)-, and O-Level subjects respectively.

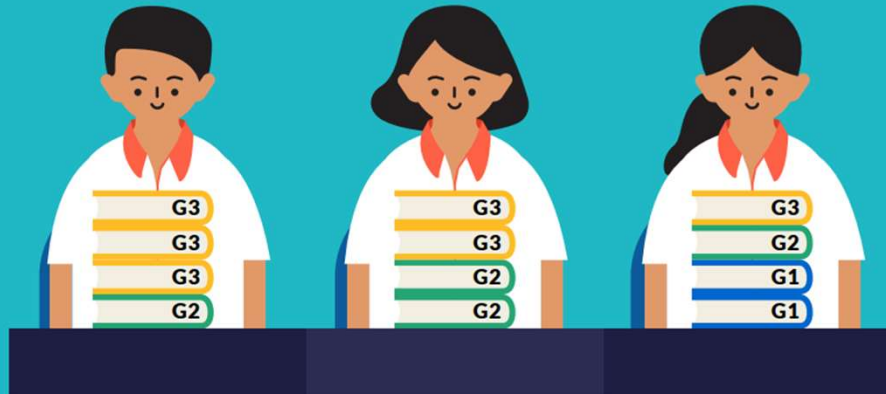
Start of Sec 1

Subject levels are assigned based on PSLE results



Beyond Start of Sec 1

Subject levels depend on students' abilities



For illustration purposes only. Number of books are not indicative of number of subjects taken.



THAT'S THE END OF
THE CRASH
COURSE!

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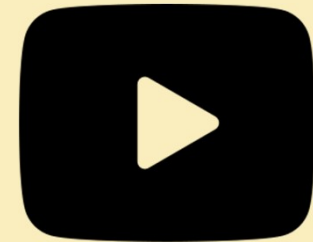
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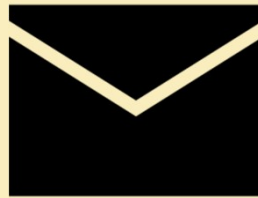
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