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:

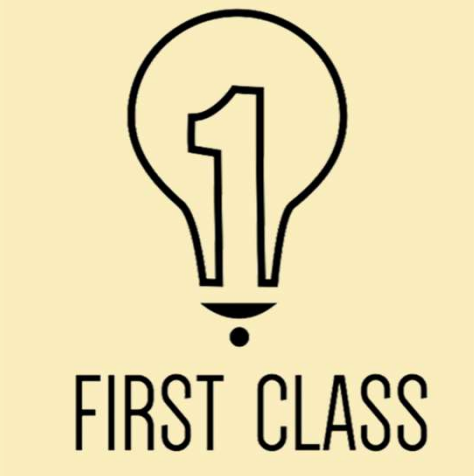
- Are schools still relevant today?
- Can education solve poverty?
- Should education focus only on what is important?

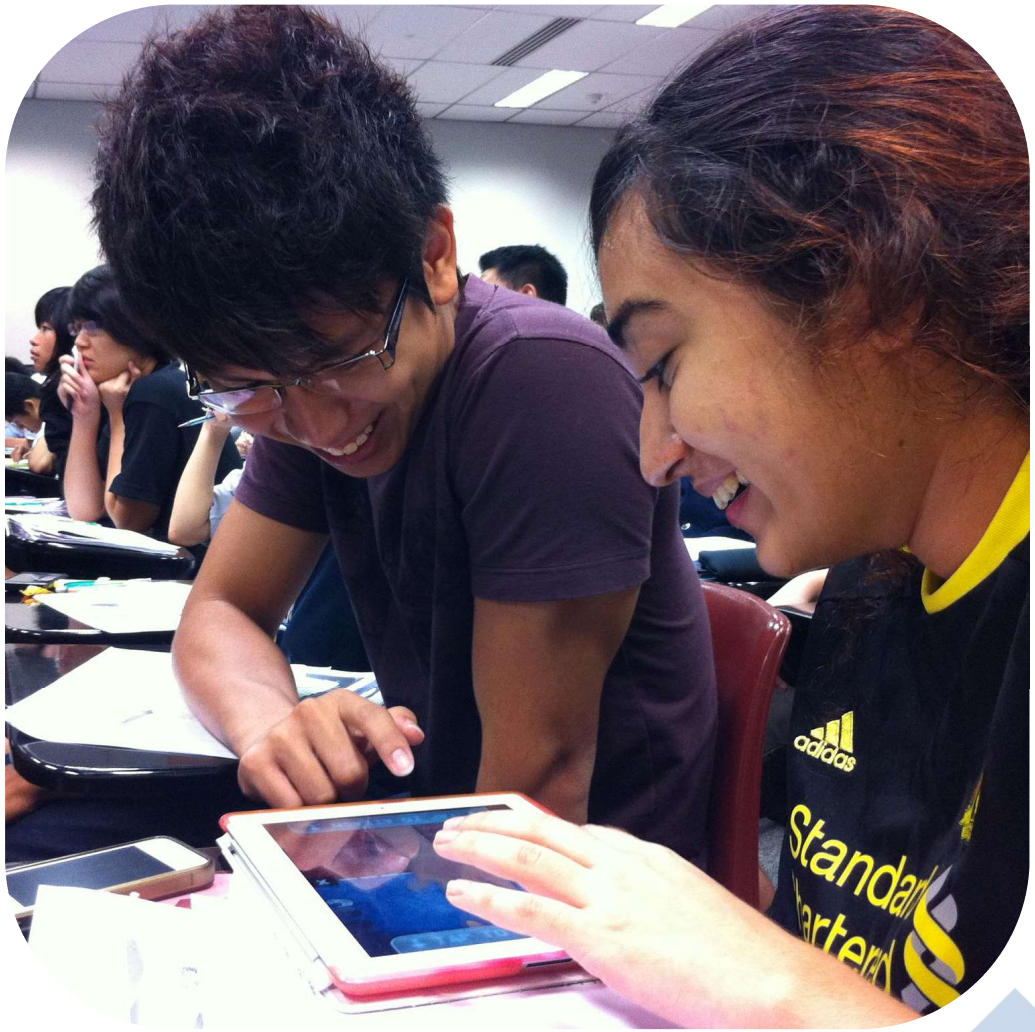
Case Study

Short Quiz

Q&A

KP Chuah




adidas

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

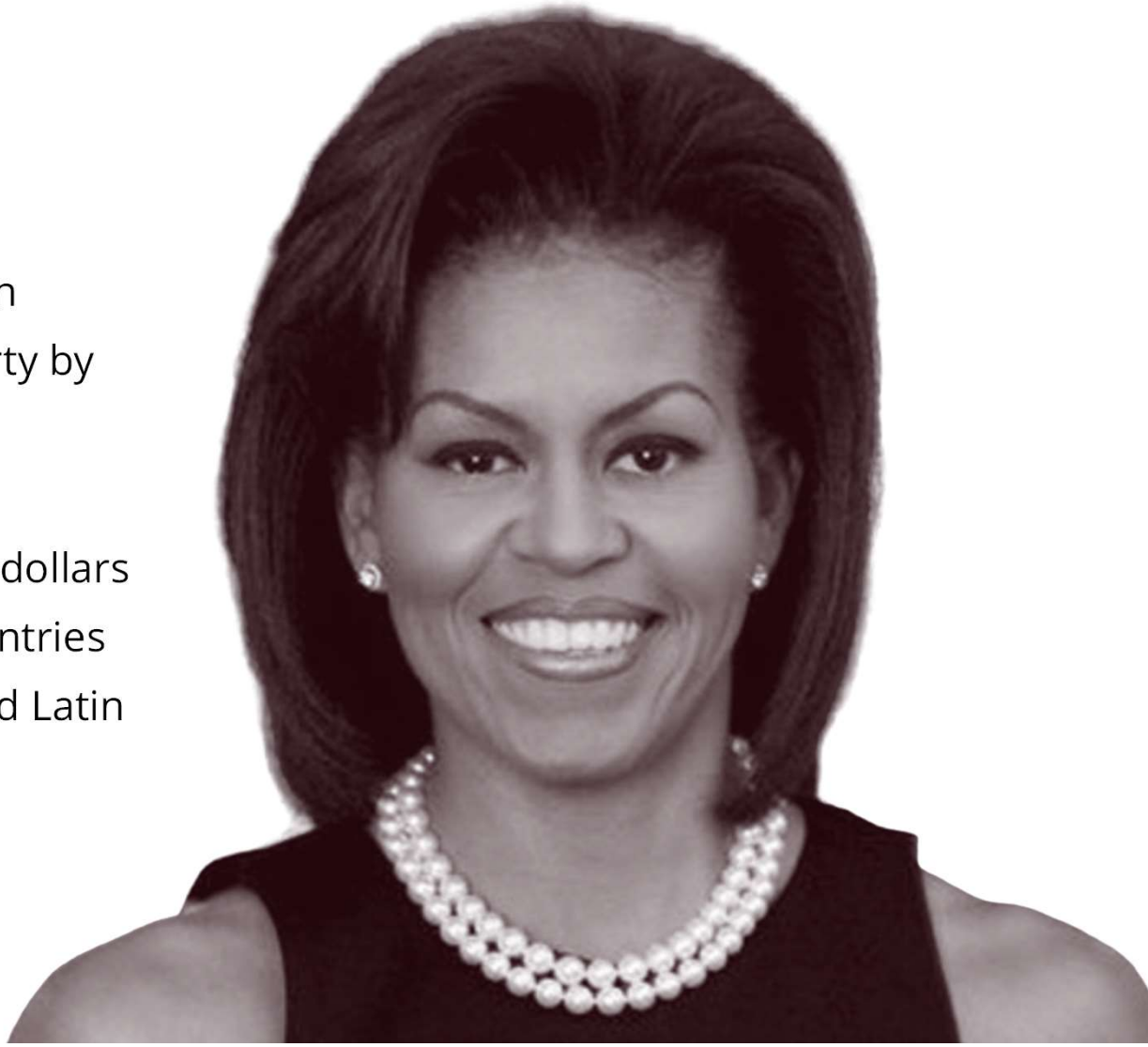
A UNESCO study of 100 countries in 2006 revealed that educating girls and reducing the gender gap can promote democracy.

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



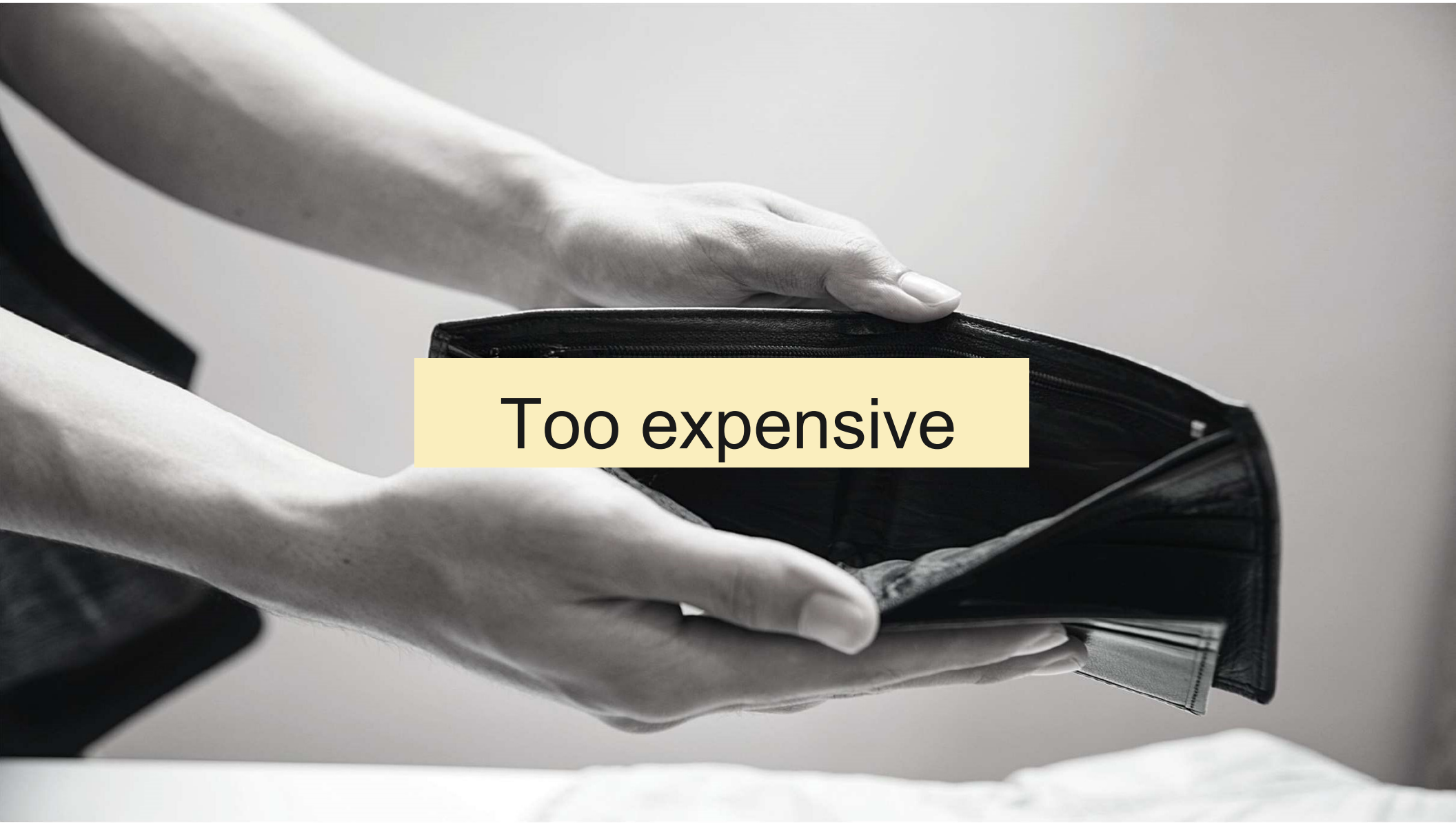
Are schools still relevant today?

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


Too expensive

Too expensive

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

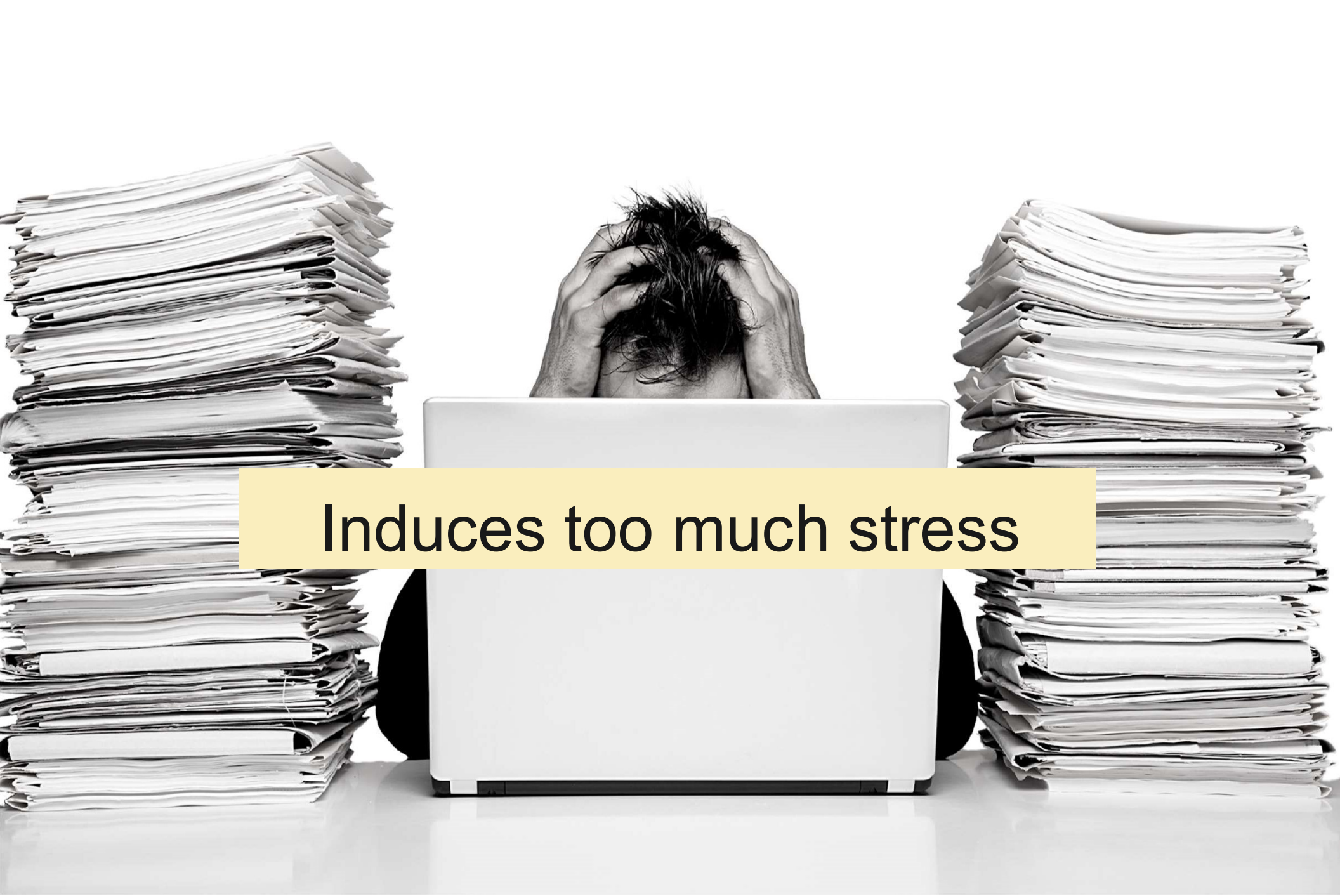
Former President Barack Obama only **finished paying his tuition loan at the age of 40.**

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.”


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.

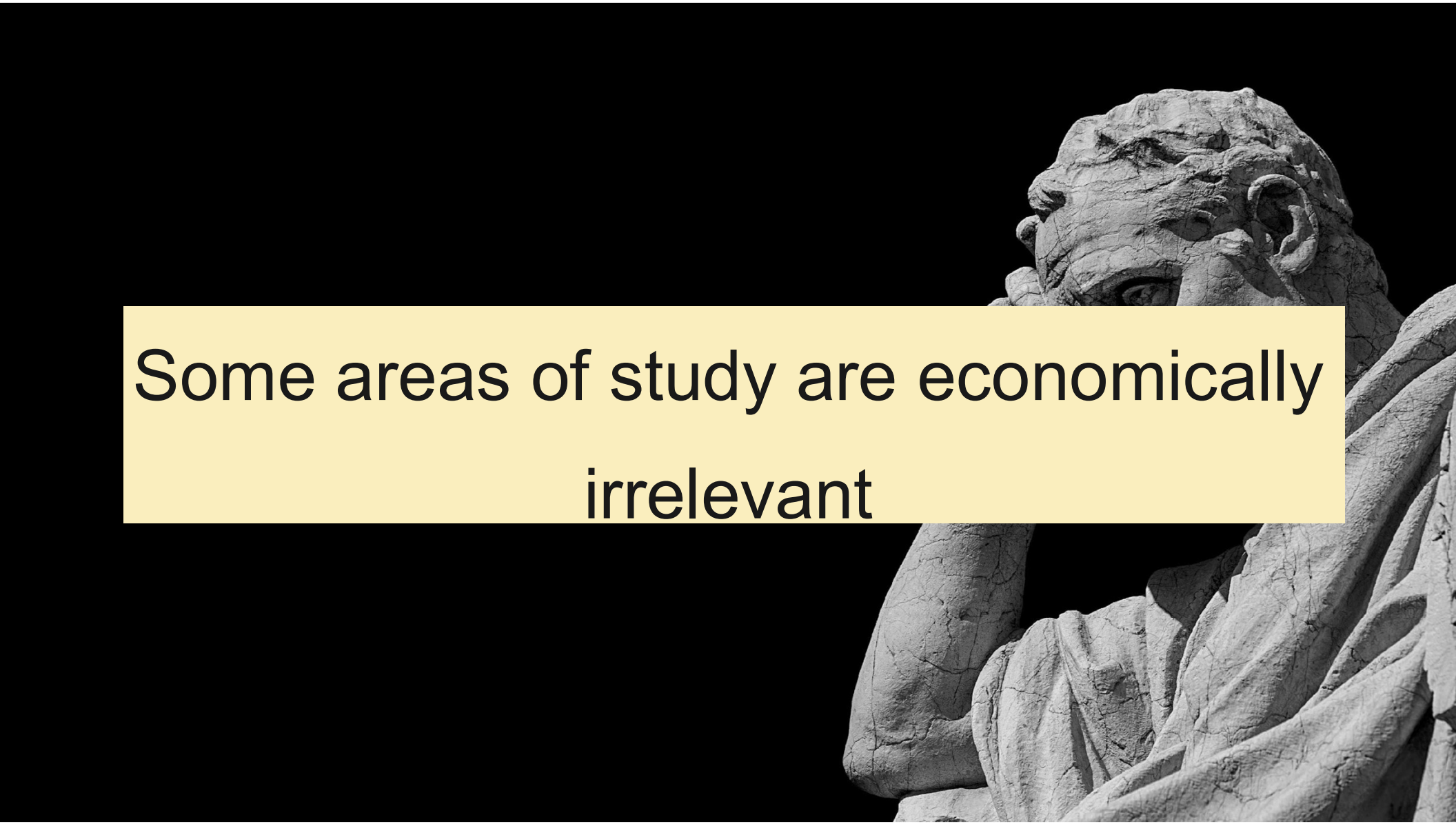
In 2015, a secondary school in Hebei province has installed cage-like "anti-suicide" barriers to **prevent stressed students jumping to their deaths.**

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



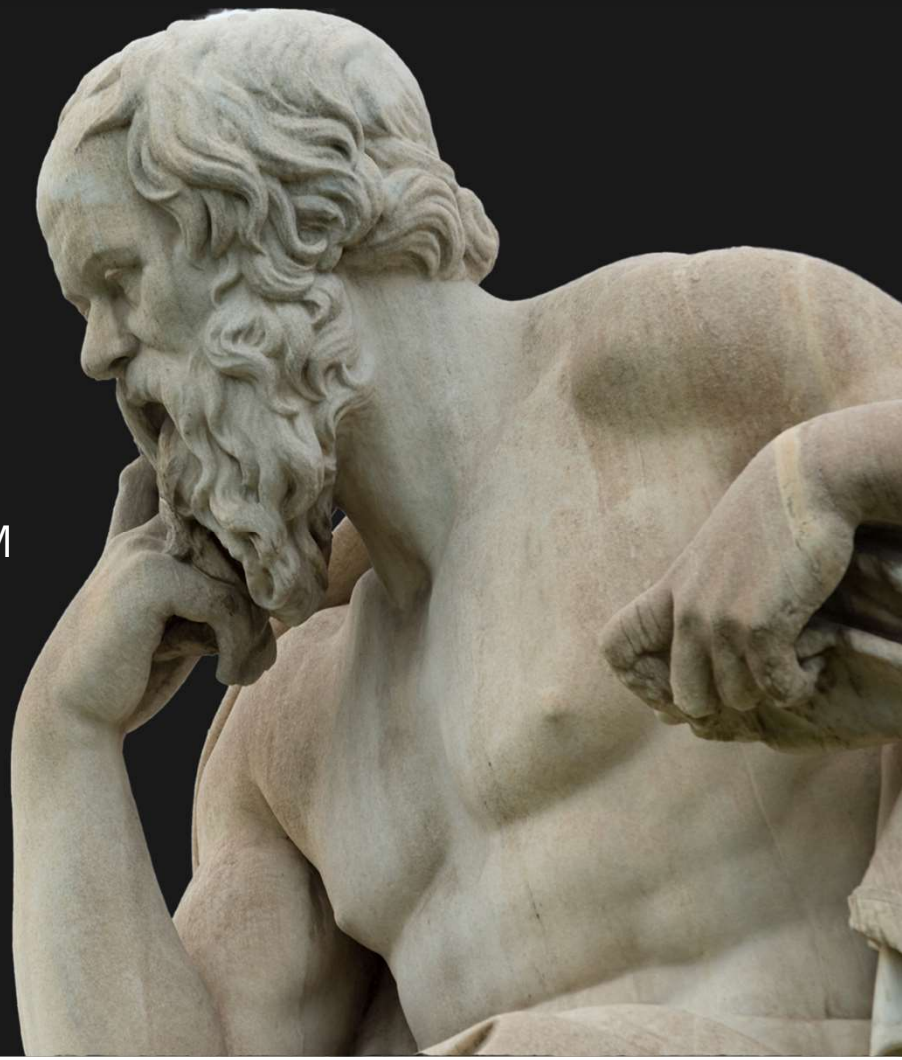
Economically Irrelevant

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.

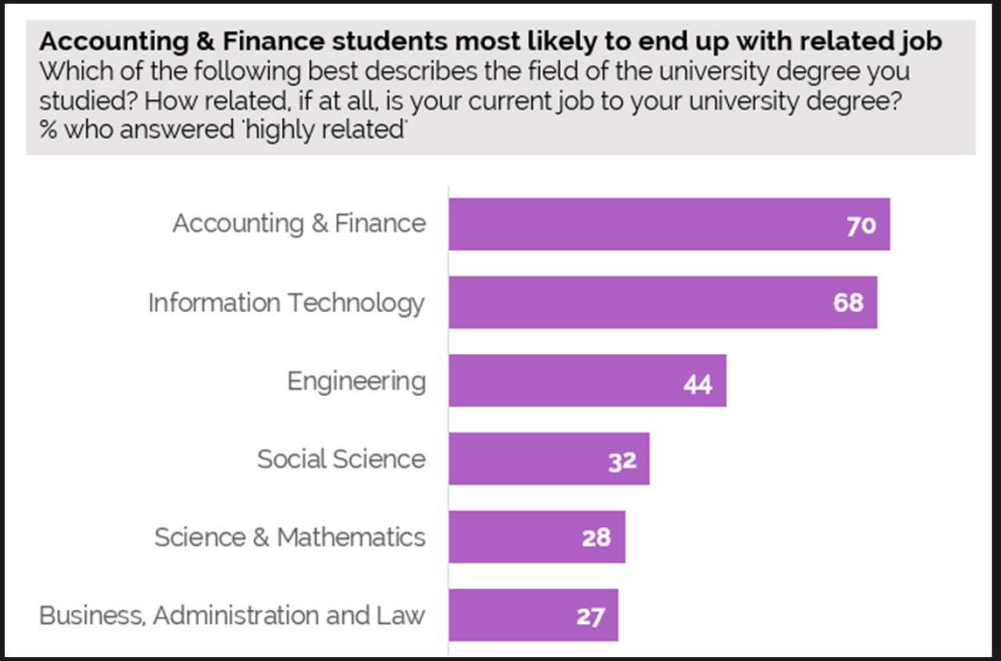


Economically Irrelevant

A 2019 survey by **YouGov** found that o**ver 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.



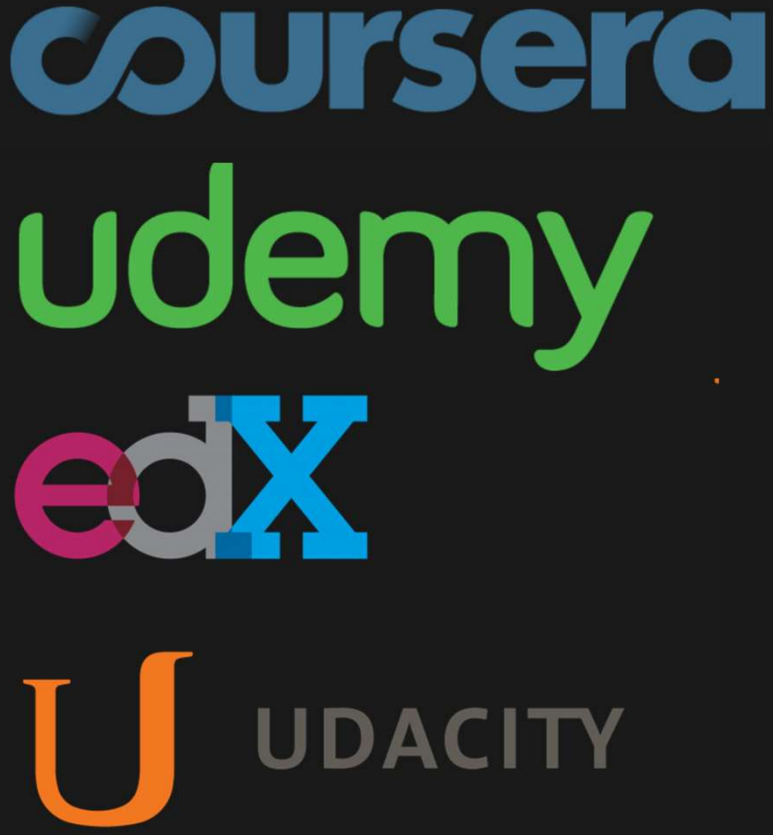
Online learning platforms exist

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.**

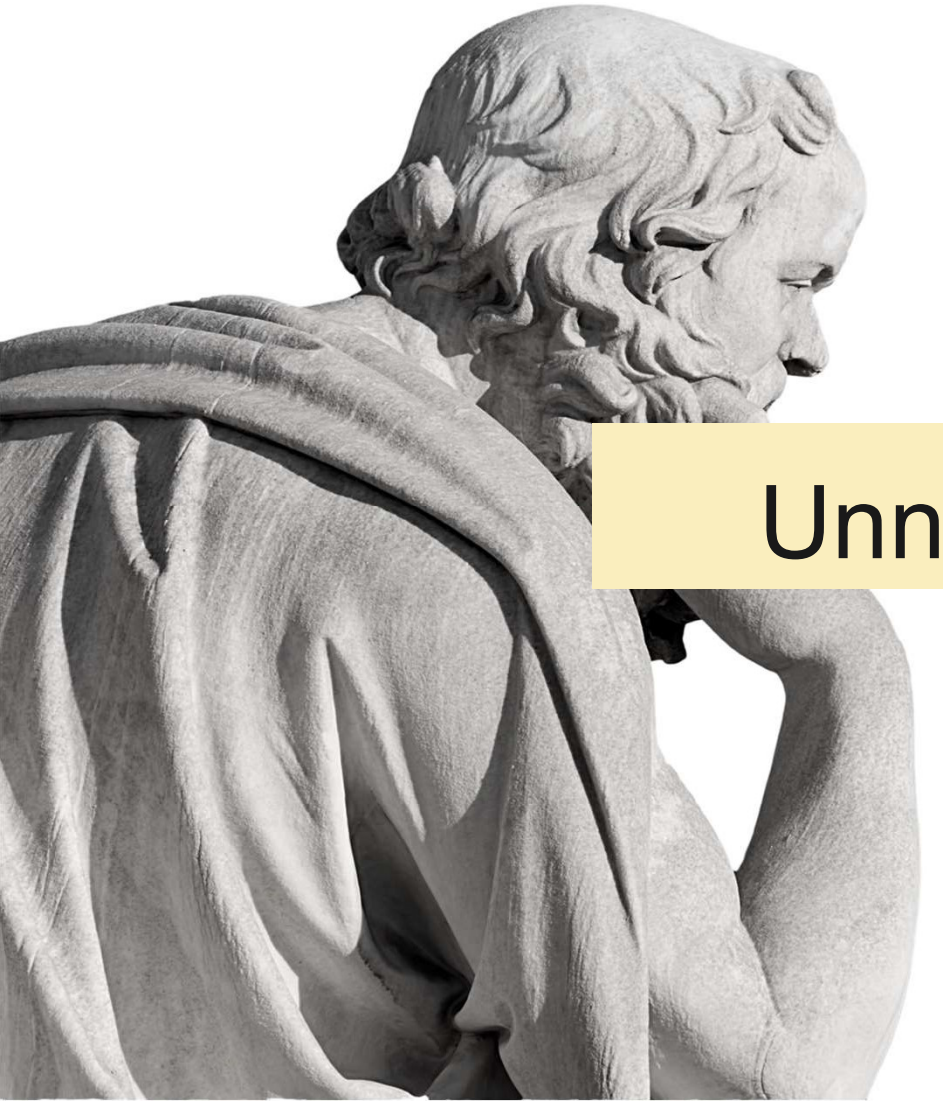


Online Learning

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.**

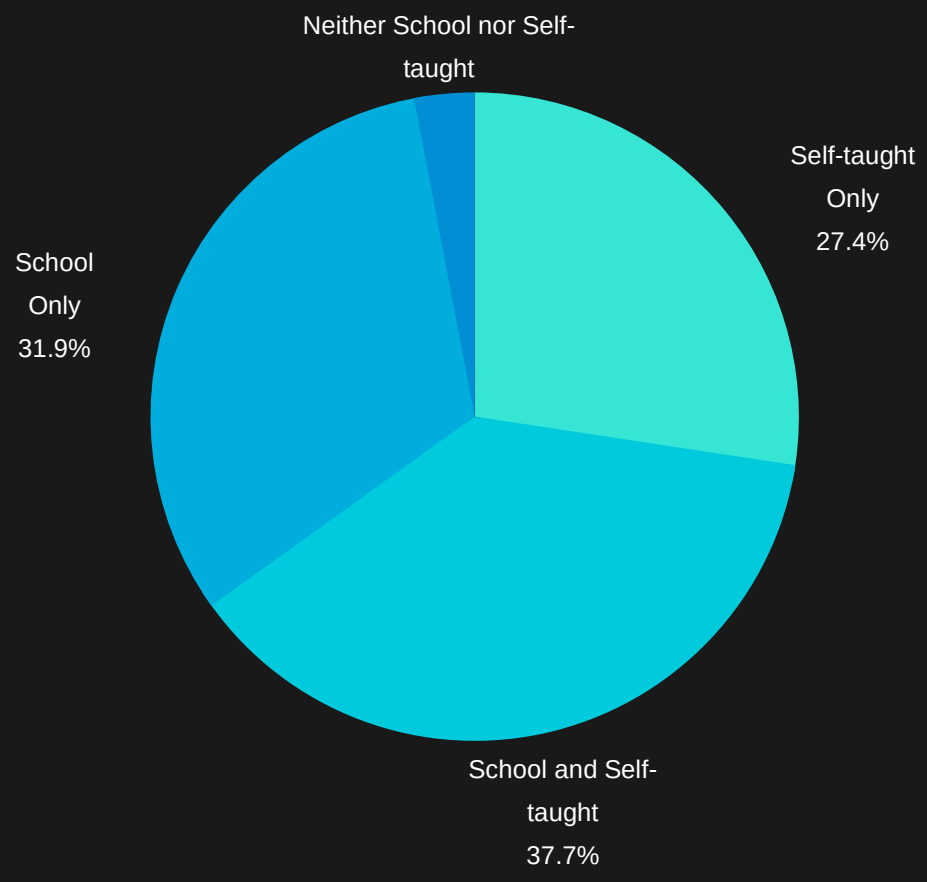


Unnecessary

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.**



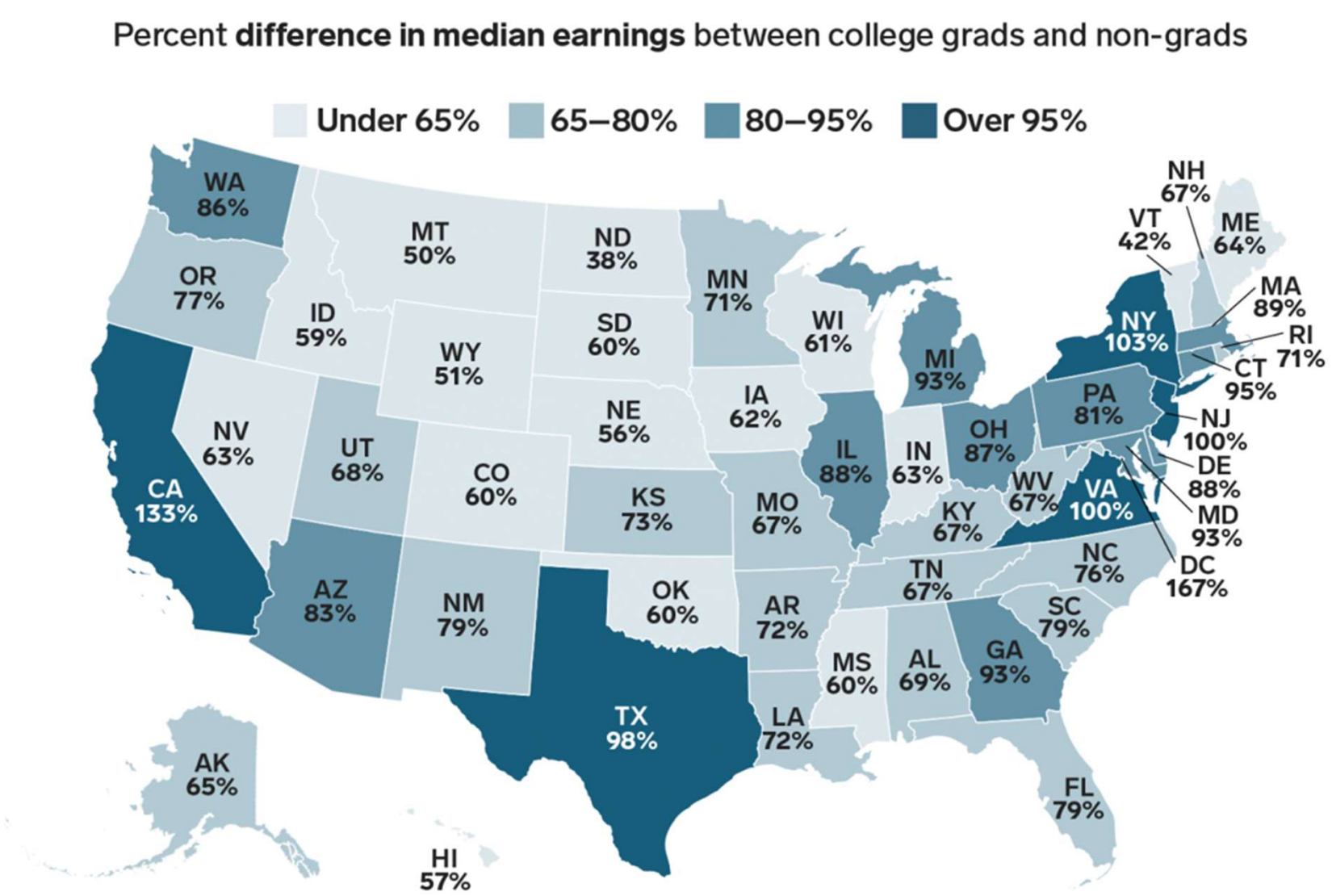
Economic Usefulness

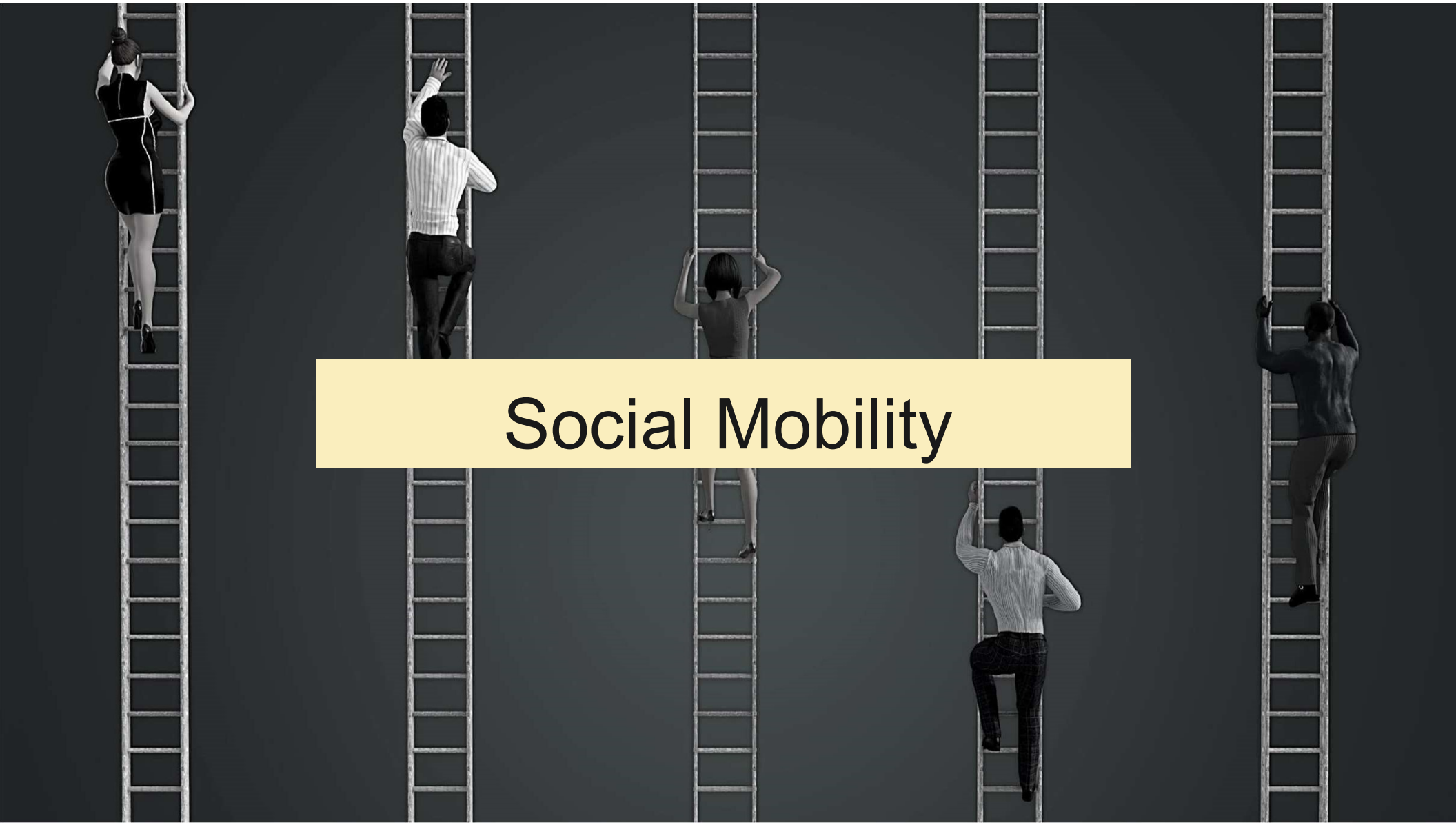
Economic Usefulness

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
Under 65%
65–80%
80–95%
Over 95%
WA 86%
OR 77%
CA 133%
NV 63%
ID 59%
MT 50%
WY 51%
UT 68%
AZ 83%
CO 60%
NM 79%
ND 38%
SD 60%
NE 56%
KS 73%
OK 60%
TX 98%
MN 71%
IA 62%
MO 67%
AR 72%
LA 72%
WI 61%
IL 88%
MS 60%
MI 93%
IN 63%
OH 87%
KY 67%
TN 67%
AL 69%
GA 93%
FL 79%
SC 79%
NC 76%
VA 100%
WV 67%
PA 81%
NY 103%
VT 42%
NH 67%
ME 64%
MA 89%
RI 71%
CT 95%
NJ 100%
DE 88%
MD 93%
DC 167%
AK 65%
HI 57%



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 **educatio the only way to enter the professional cla**

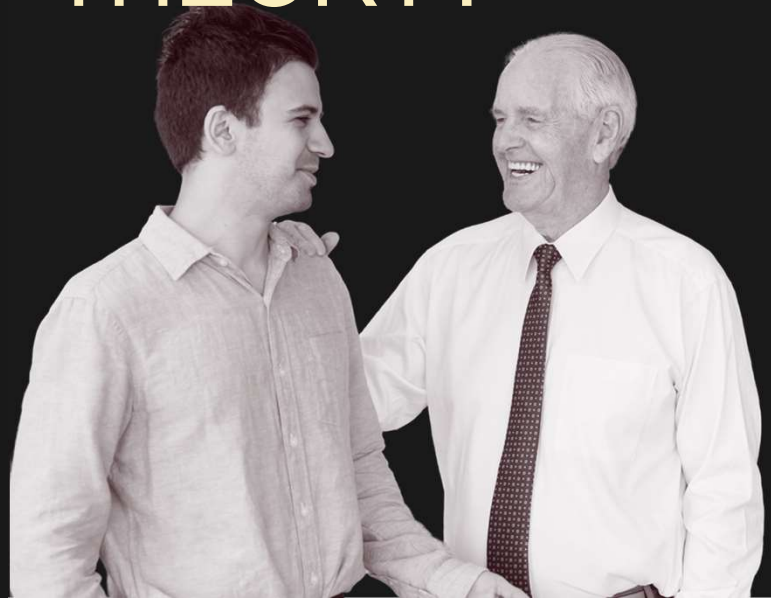
Social Mobility

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

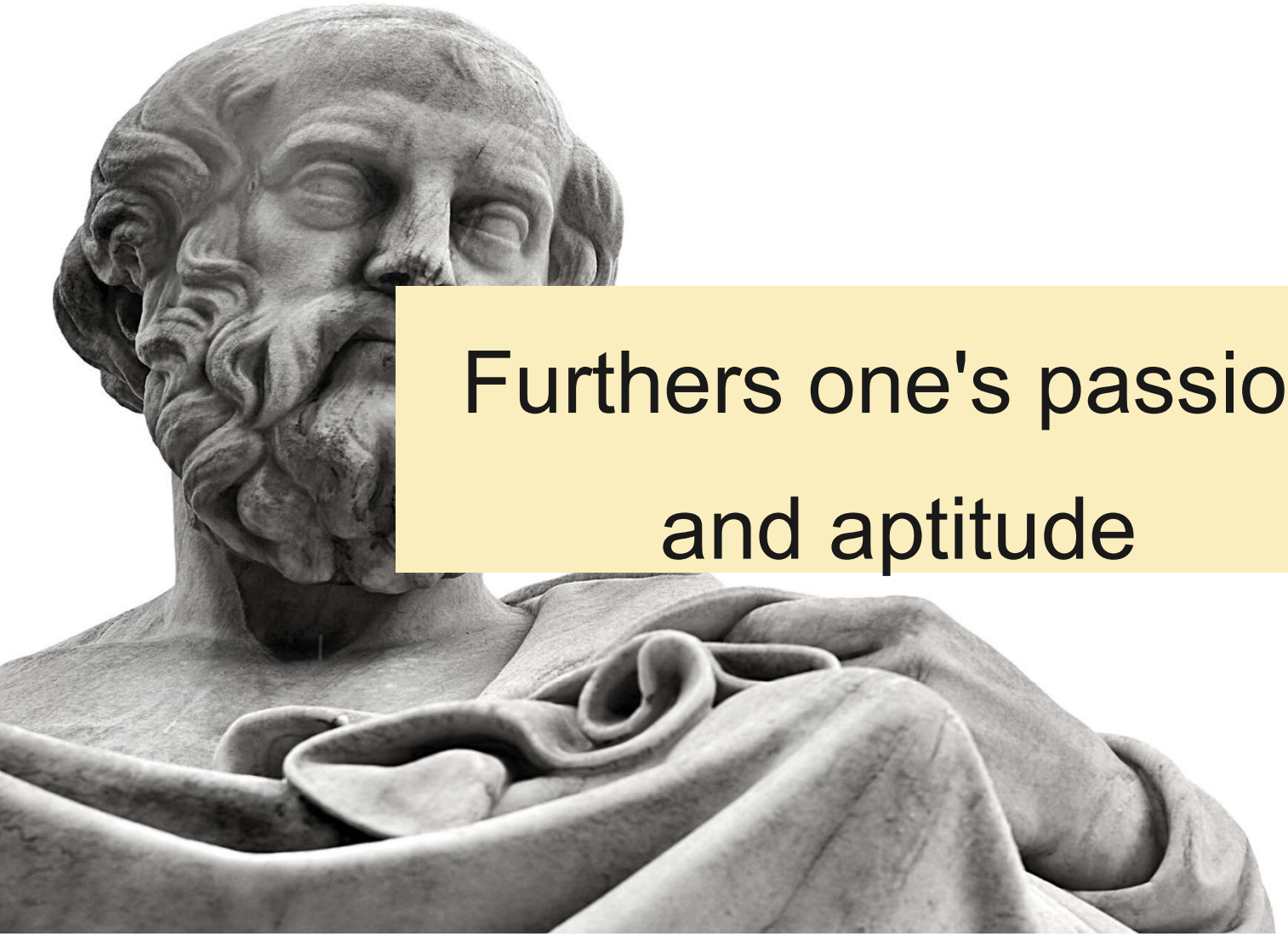
Letting them differentiate between a good employee and a bad employee.

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.

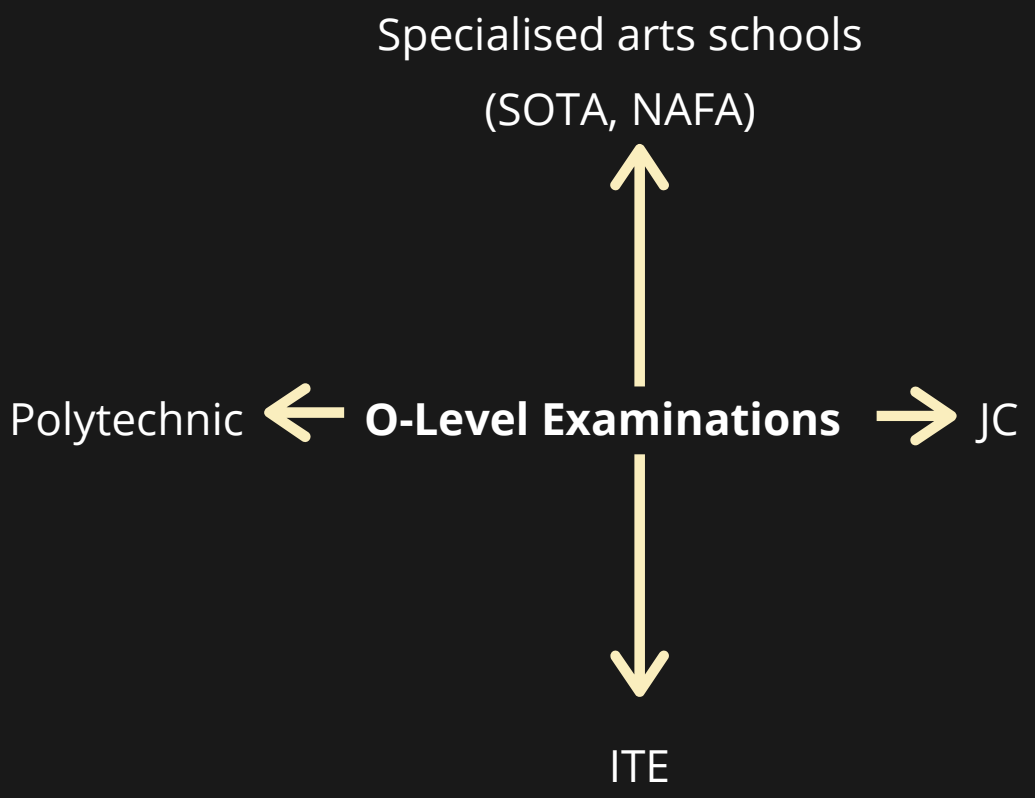


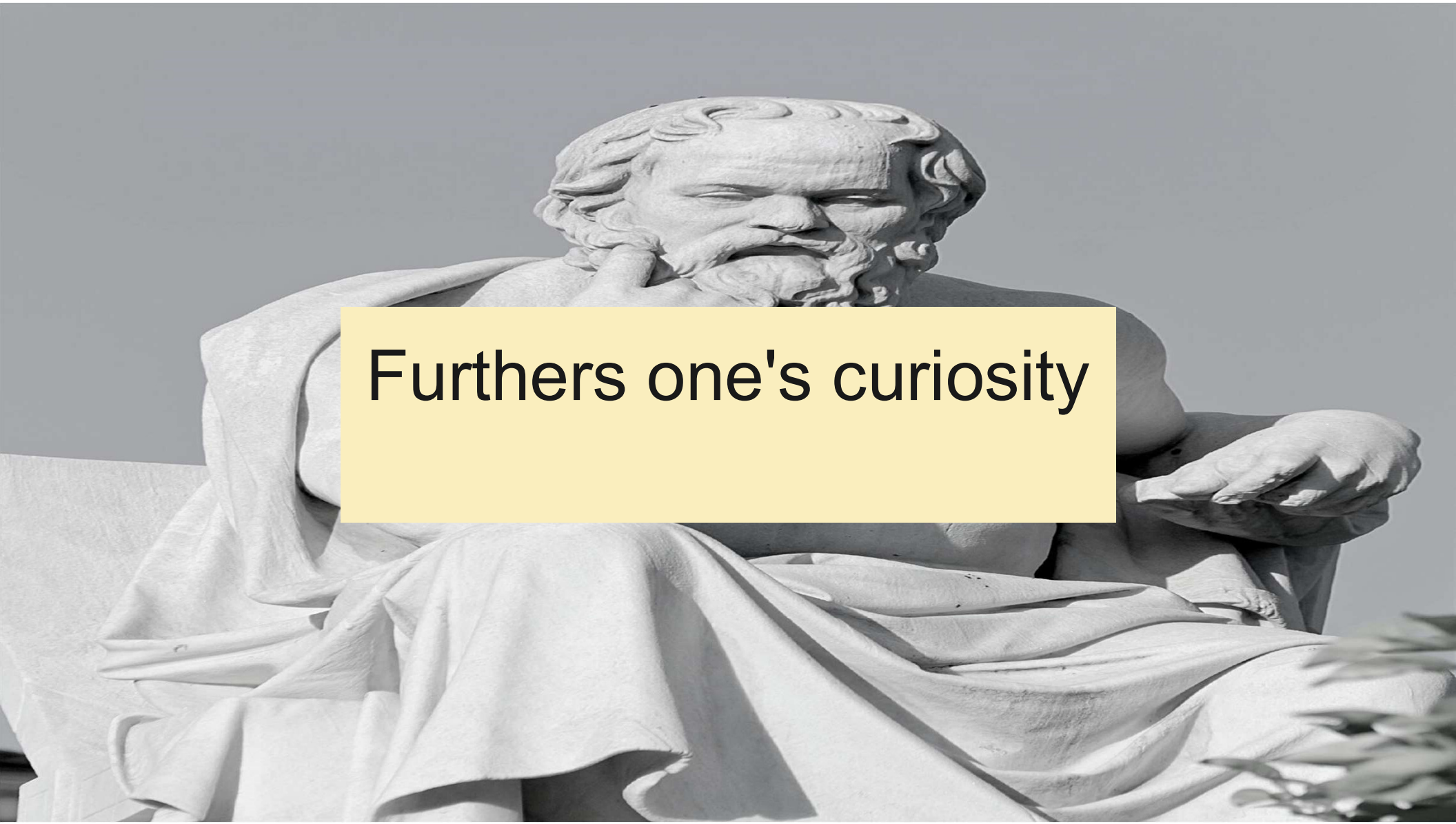
Furthers one's passion and aptitude

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.**

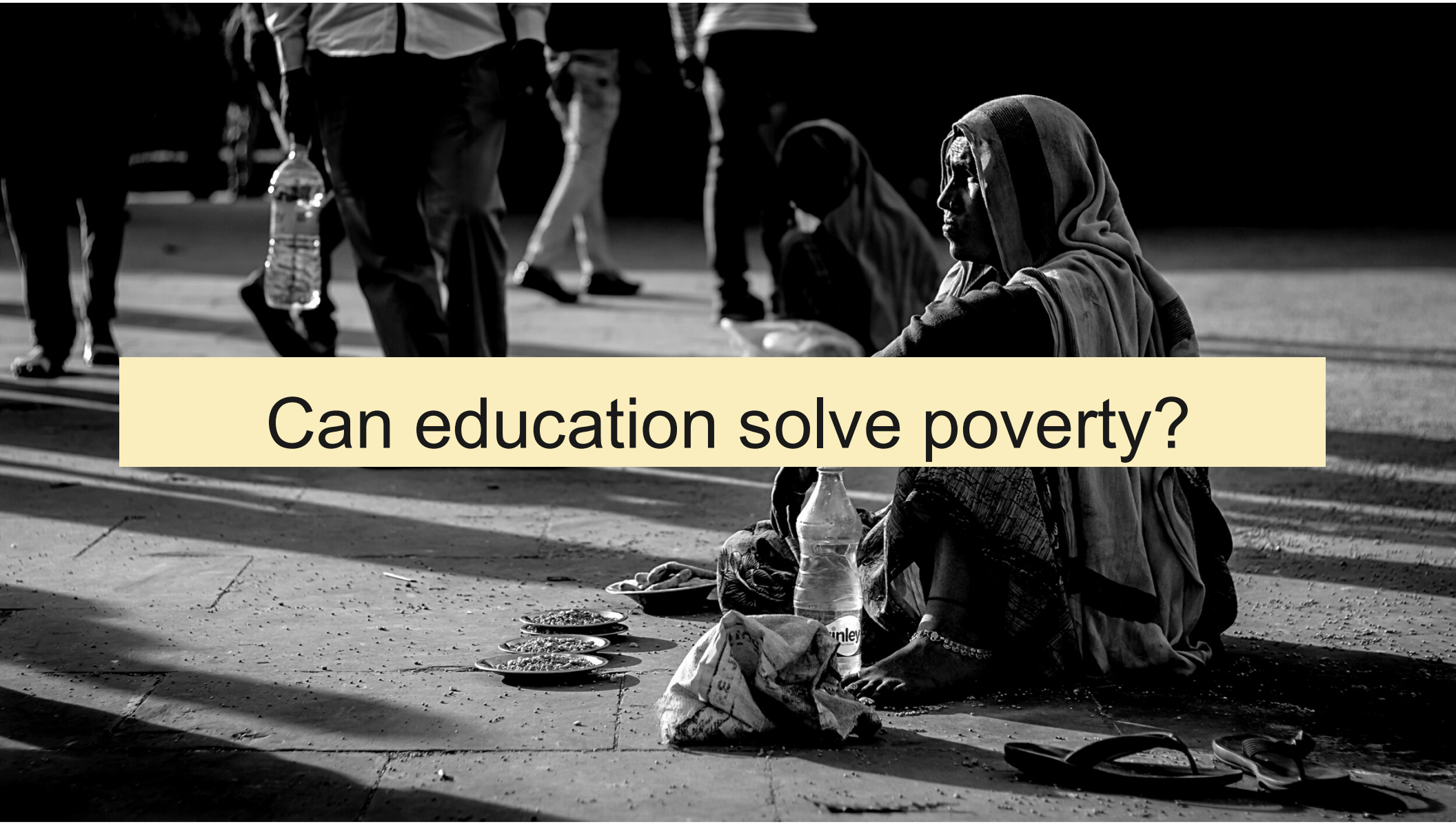



Furthers one's curiosity

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

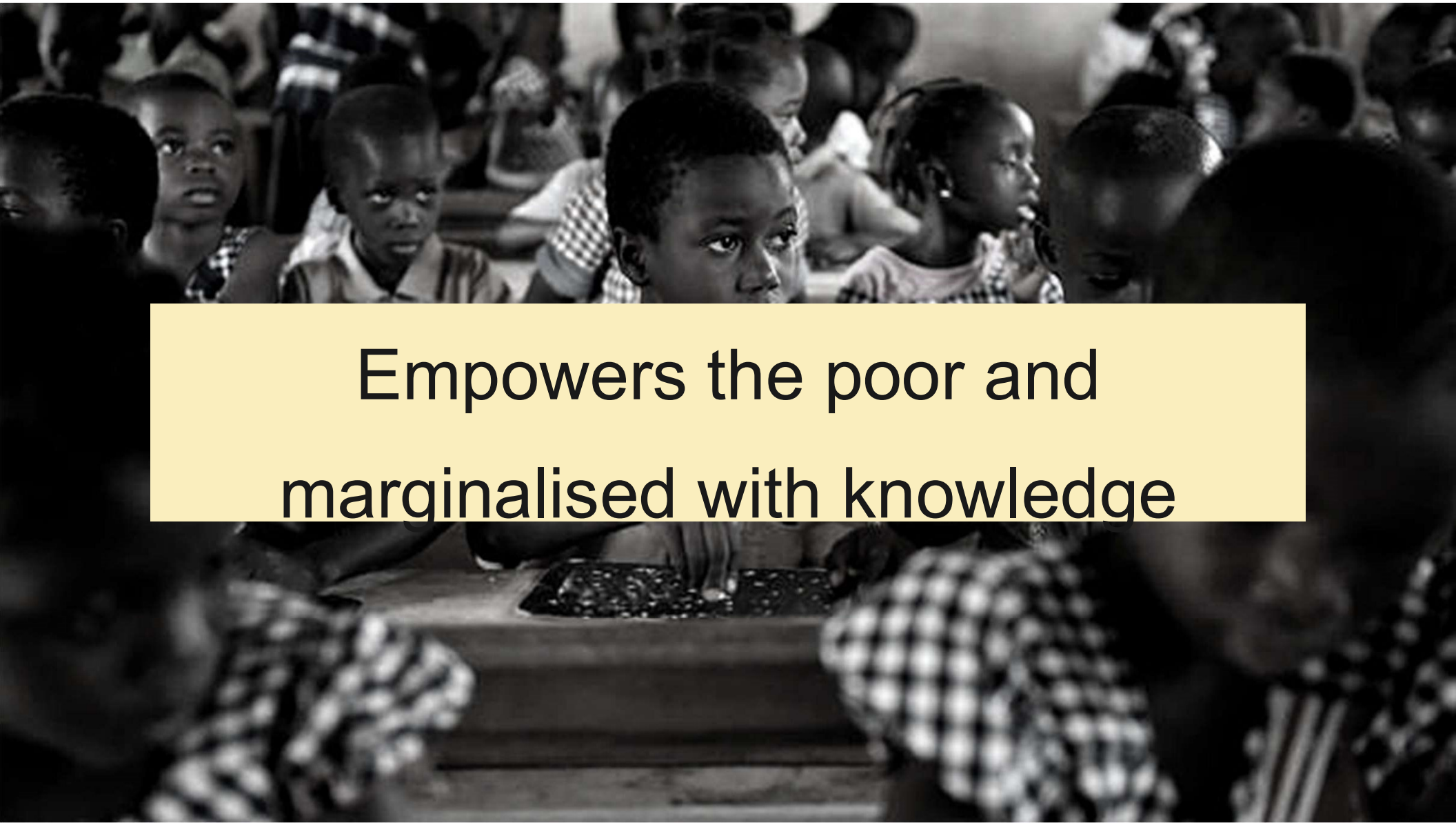

Can education solve poverty?

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

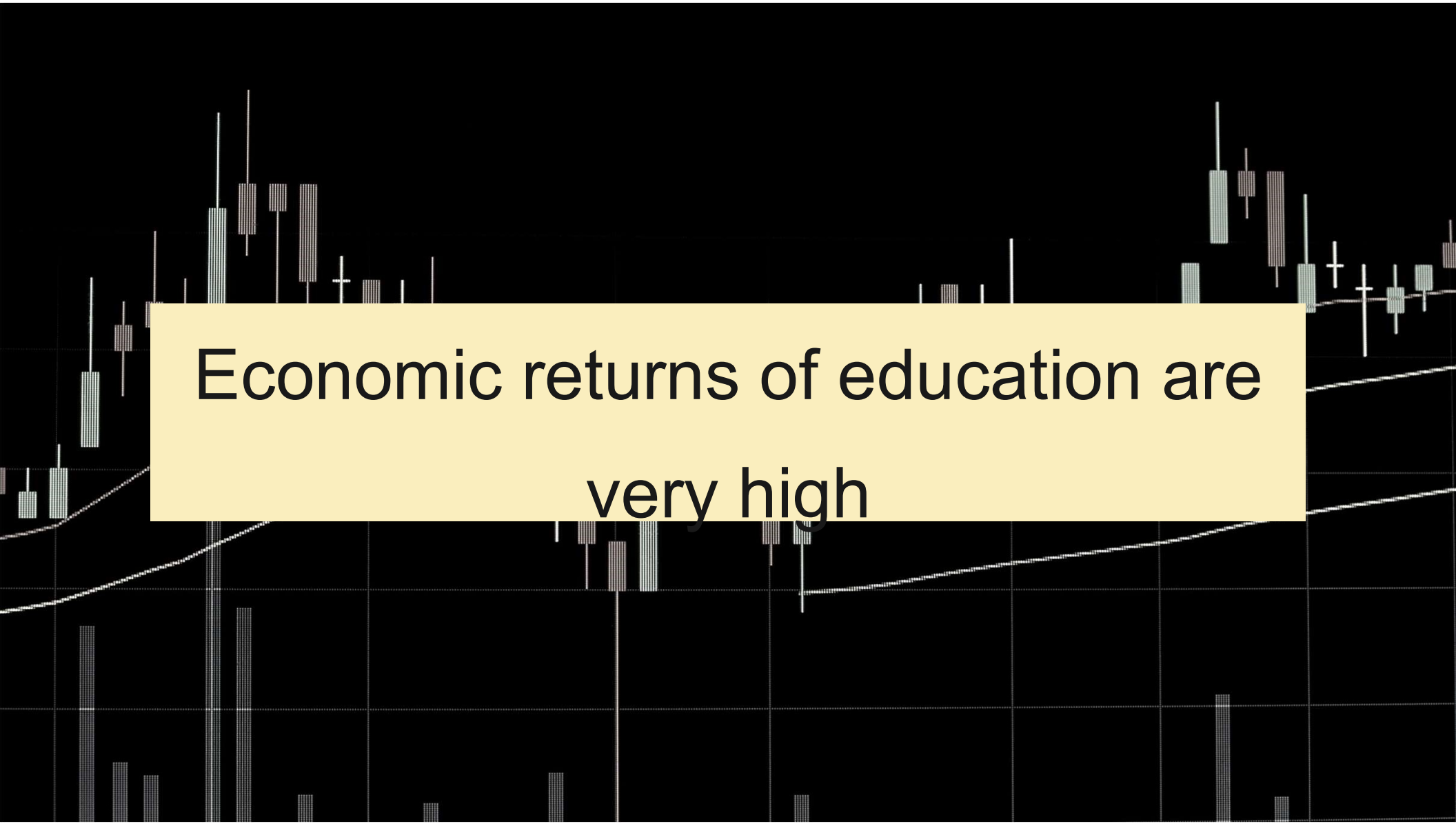

Empowers the poor and
marginalised with knowledge

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.


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.**

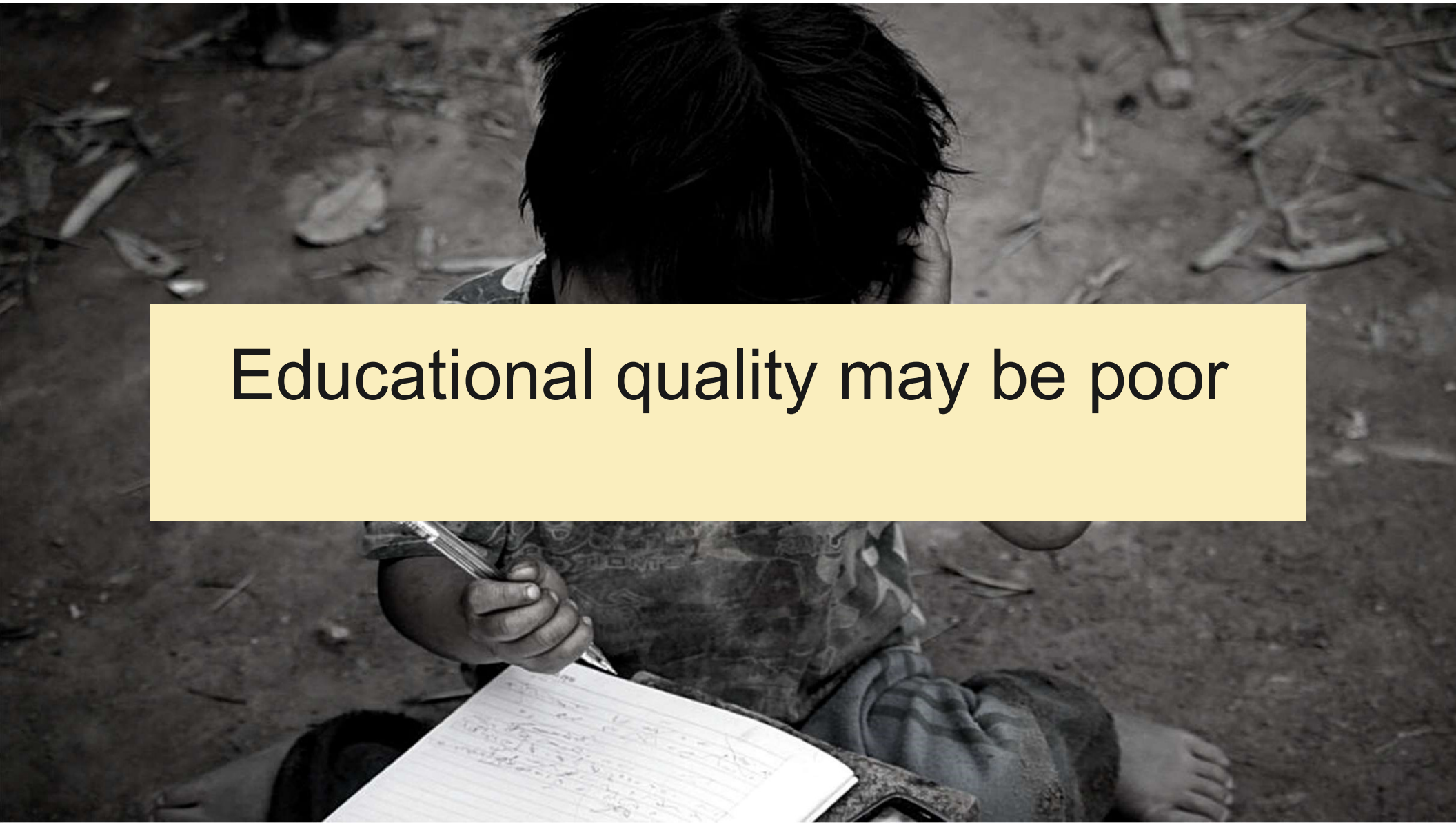
The growth includes benefits such as lower crime rates, better physiological and psychological health, as well as nutrition.

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.**


Educational quality may be poor

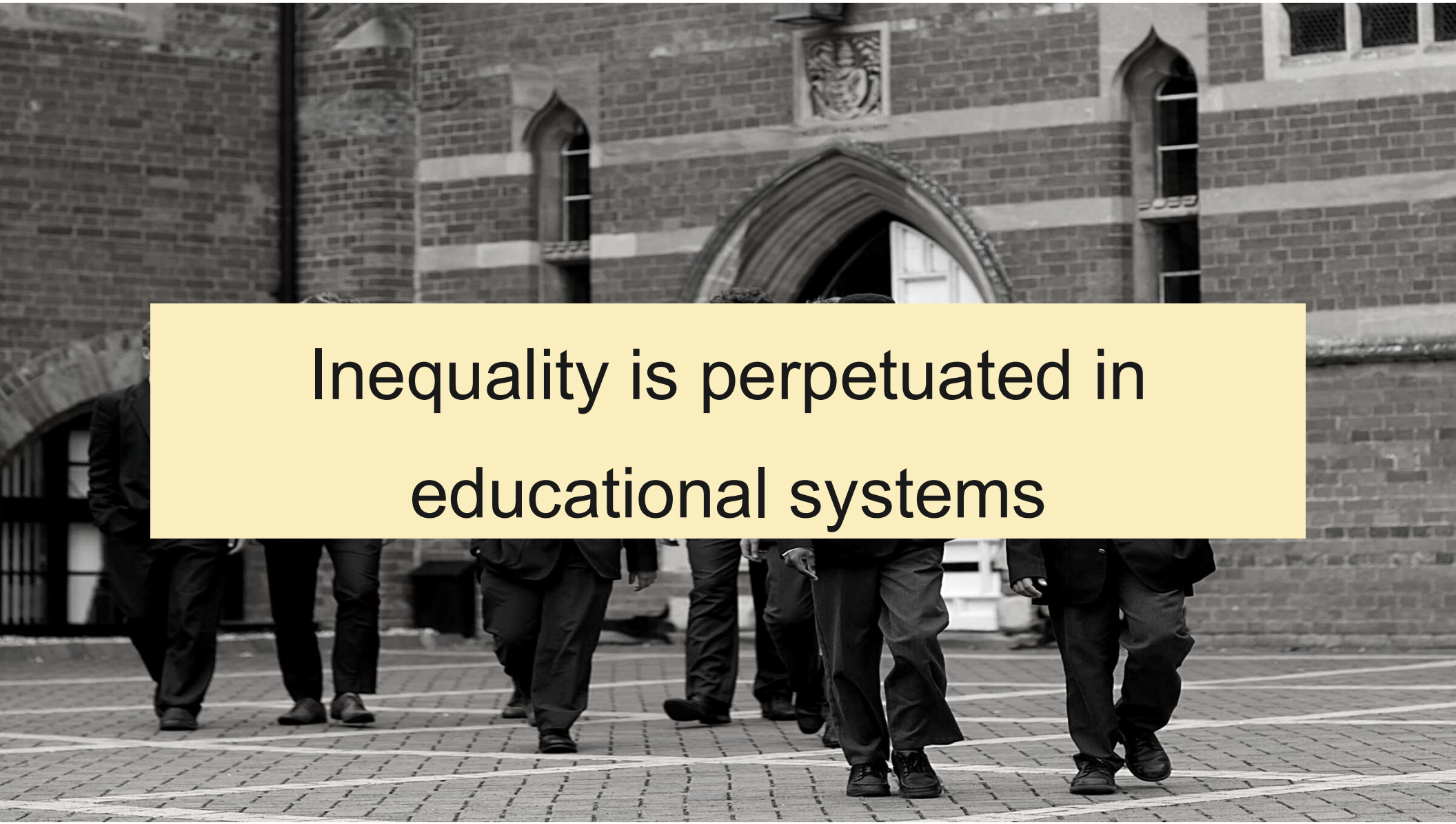
Educational quality may be poor

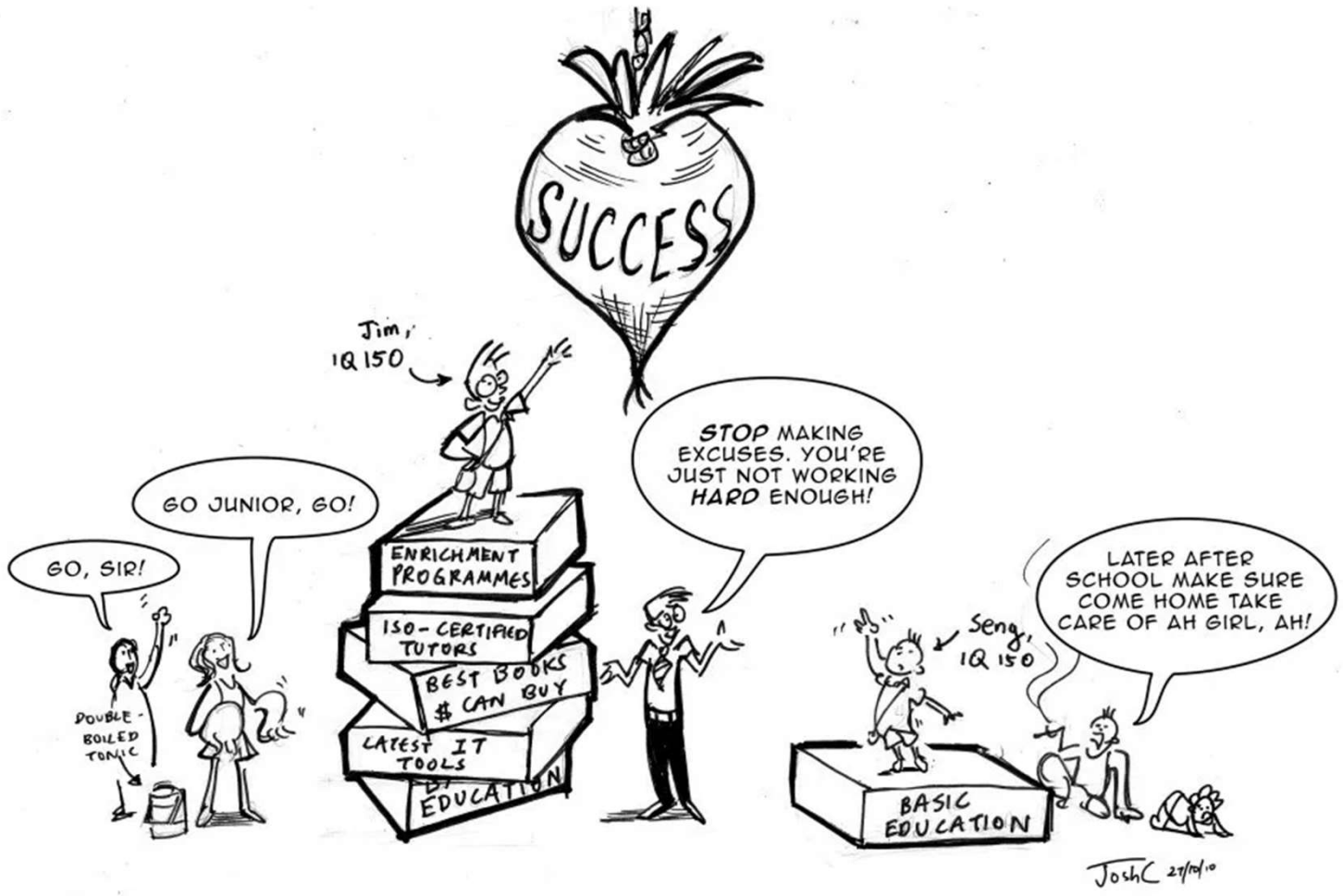
There is an **ongoing education crisis in Pakistan.**

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.

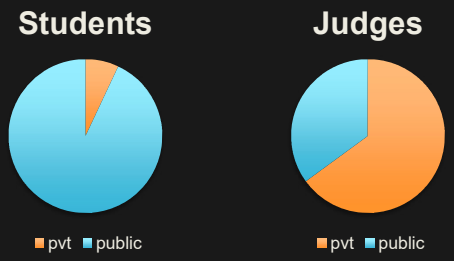
However, very few disadvantaged kids get into grammar schools as parents who can afford private tutoring can help their kids pass their exams, do so. **70% of grammar school entrants had some form of private tutoring.**

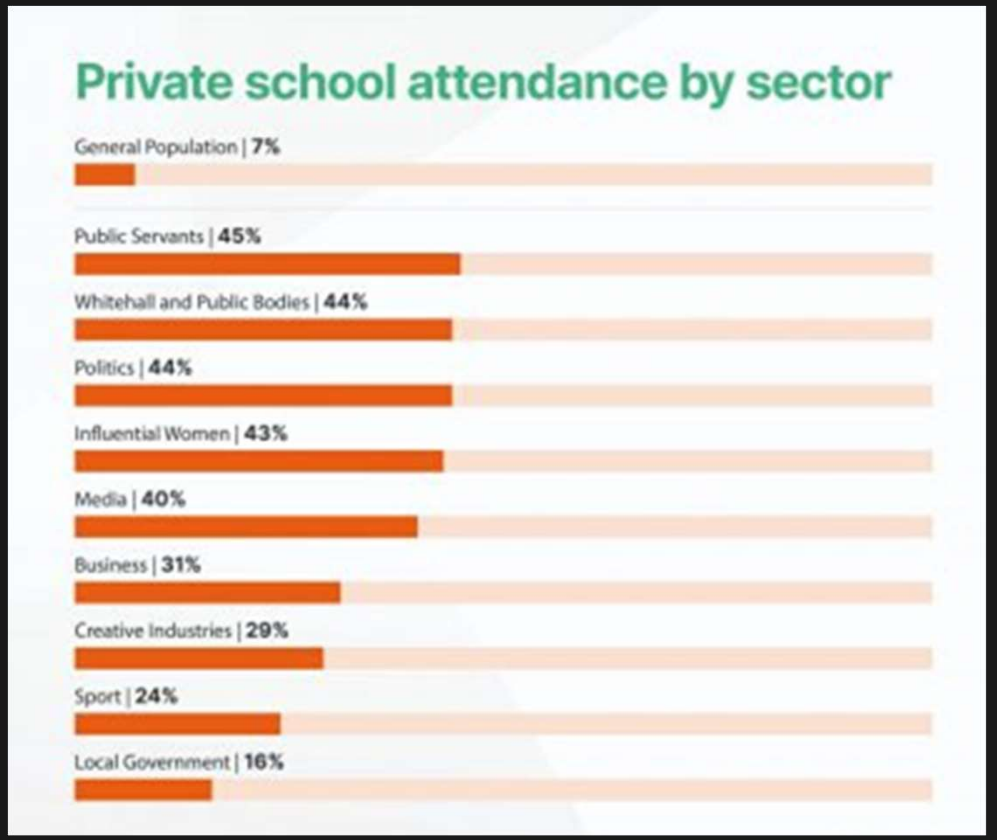
In fact, **only 3% of grammar school pupils are entitled to free school meals**, which is an indication of deprivation.

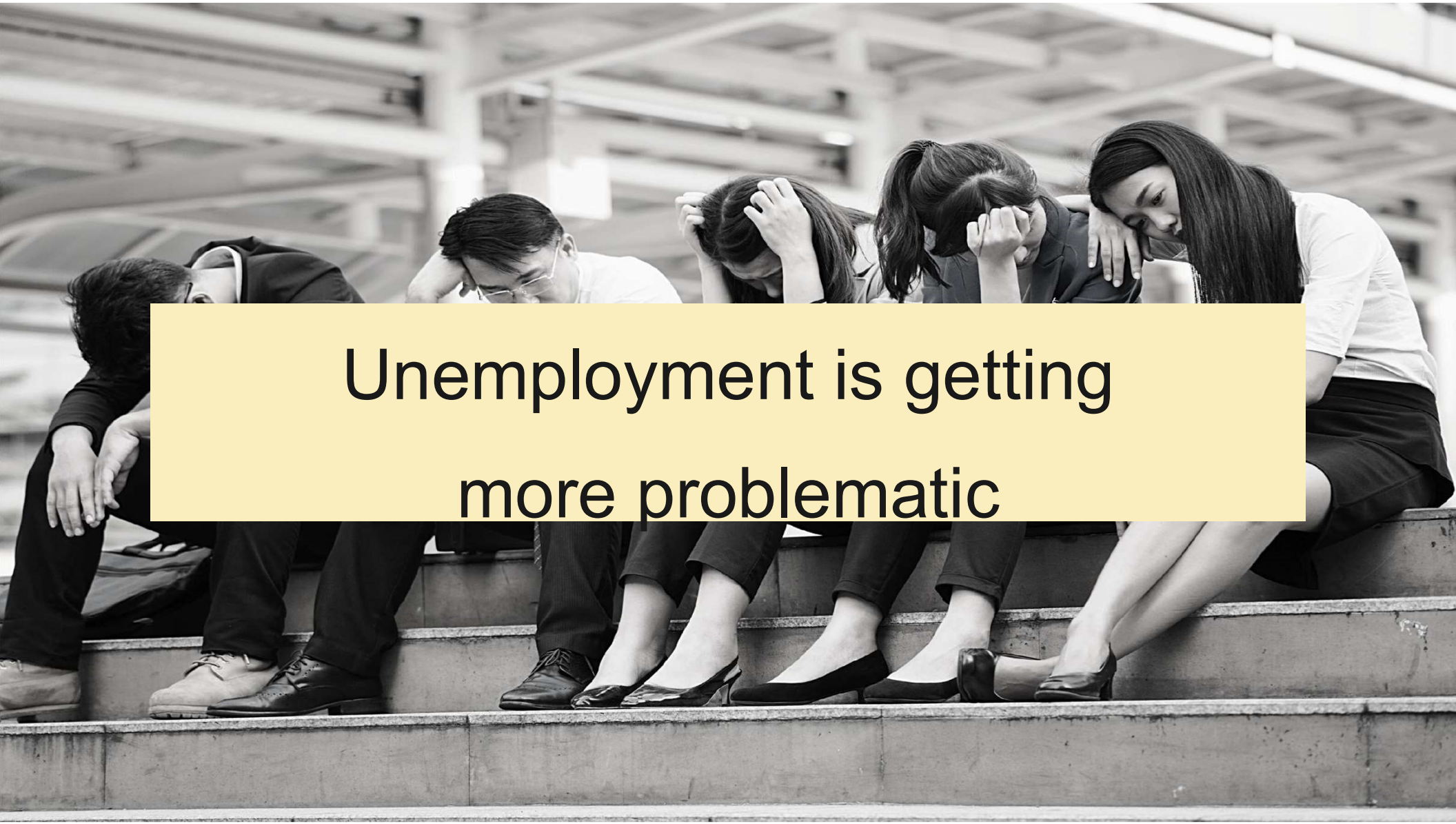
Inequality is perpetuated in educational systems

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





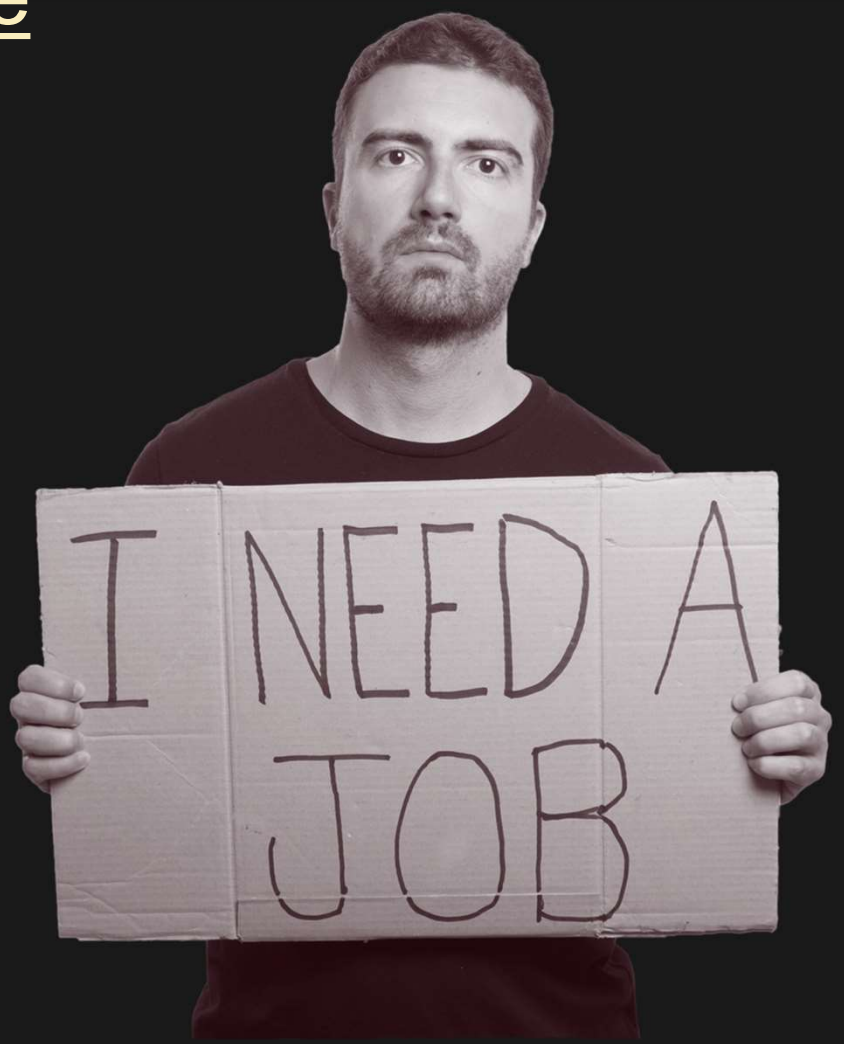

Unemployment is getting
more problematic

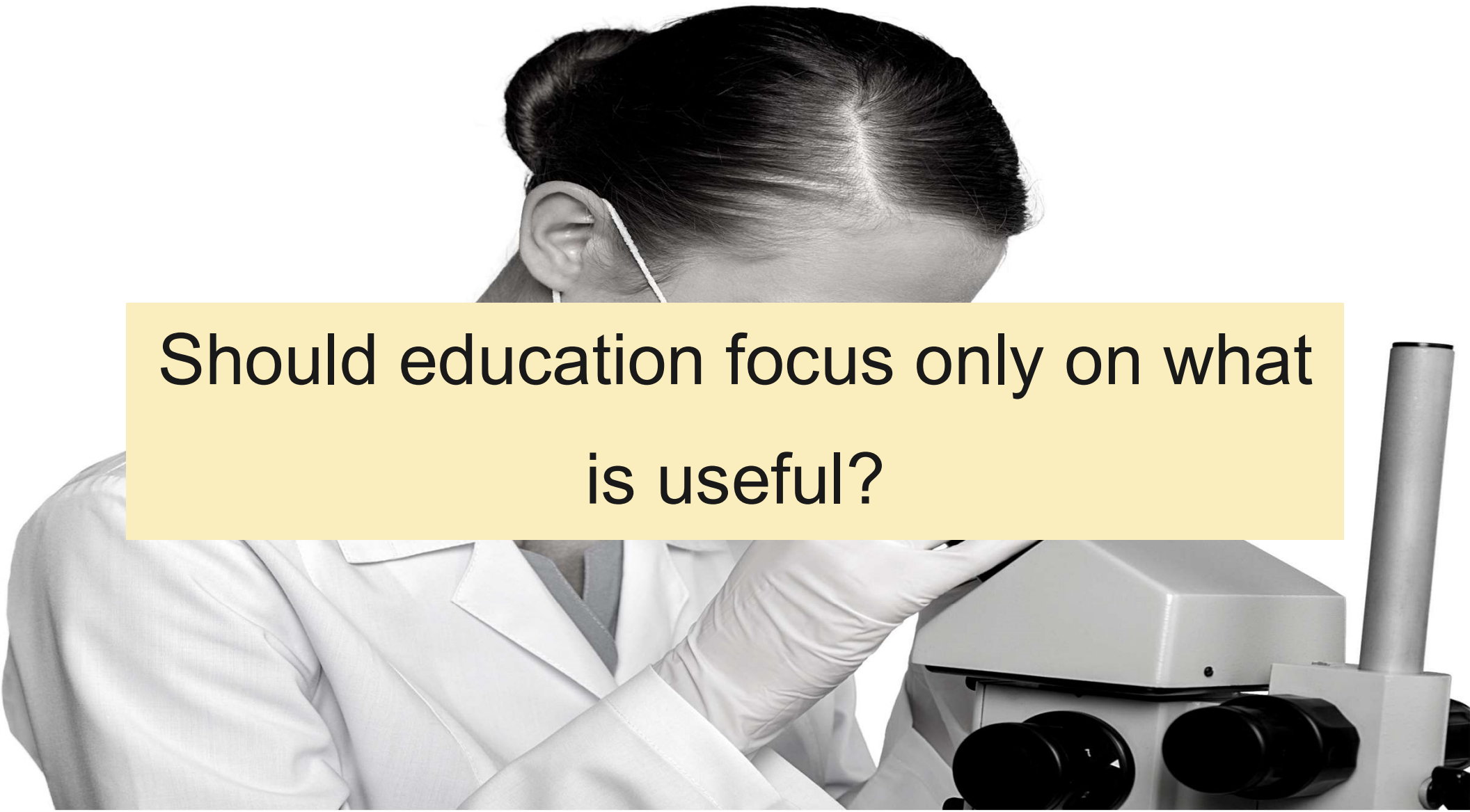
Unemployment is getting more problematic

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.





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 stud
and Zhejiang emerging as the top performer in all categories. Note that this does not represent the entirety of mainland C

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

Singapore	Estonia
Centralised The ministry determines the educational outcomes	**Decentralised** Individual schools have autonomy over how and what to teach the students.
Streaming (will be replaced by SBB soon) Students of different abilities are taught separately	**Mixed Abilities** Students of all abilities in one class
Somewhat Free Miscellaneous fees, uniforms and school materials **Higher Education** Subsidised 75% paid by Tuition Grant	**Completely Free** Really free. Even school lunches are provided. **Higher Education** Free for programmes taught in the Estonian language
Digital Skills Since 2020, primary pupils have coding classes thorugh a 10-hour enrichment programme after their Primary School Leaving Examination (PSLE) in Grade 6 (12 years old).	Digital Skills Students learn coding from Grade 1 to Grade 4 (7-10 years old)

E-stonia. The Smart Nation

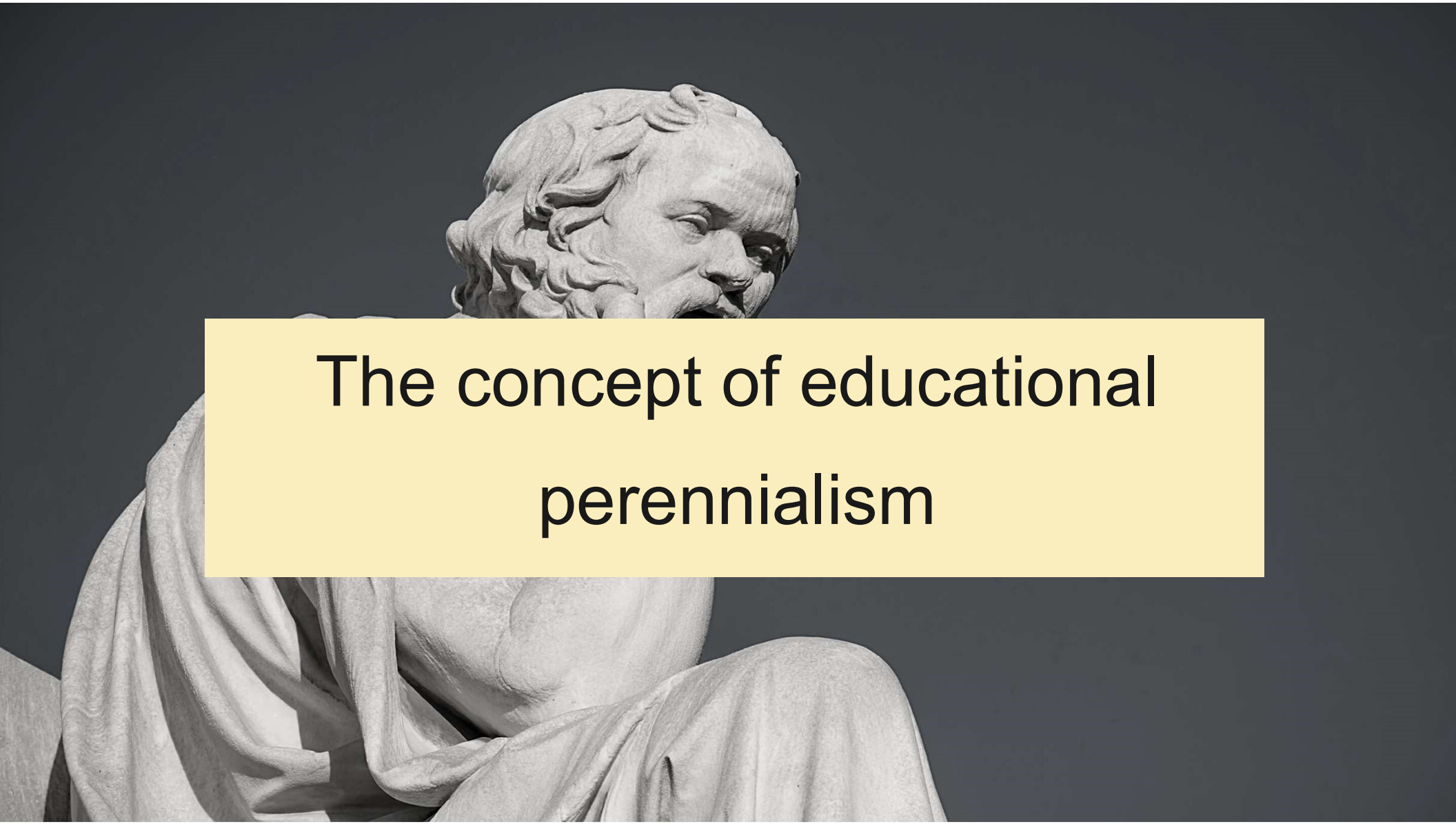
- A famous educational programme called ProgeTiger (Tiger Leap) launched a nationwide scheme to teach school kids from the age of seven to nineteen how to write code.
- E-school system, where a lot of homework is done and graded online.
- Since 2012, children in grades 1-4 have been having coding classes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

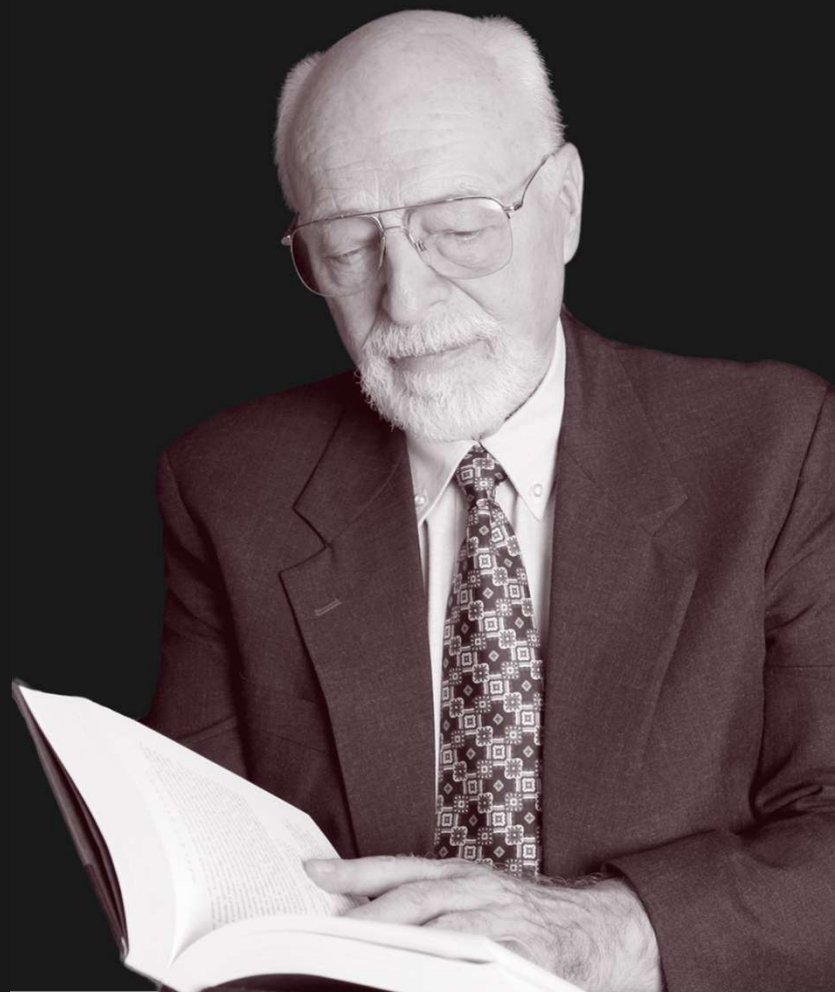


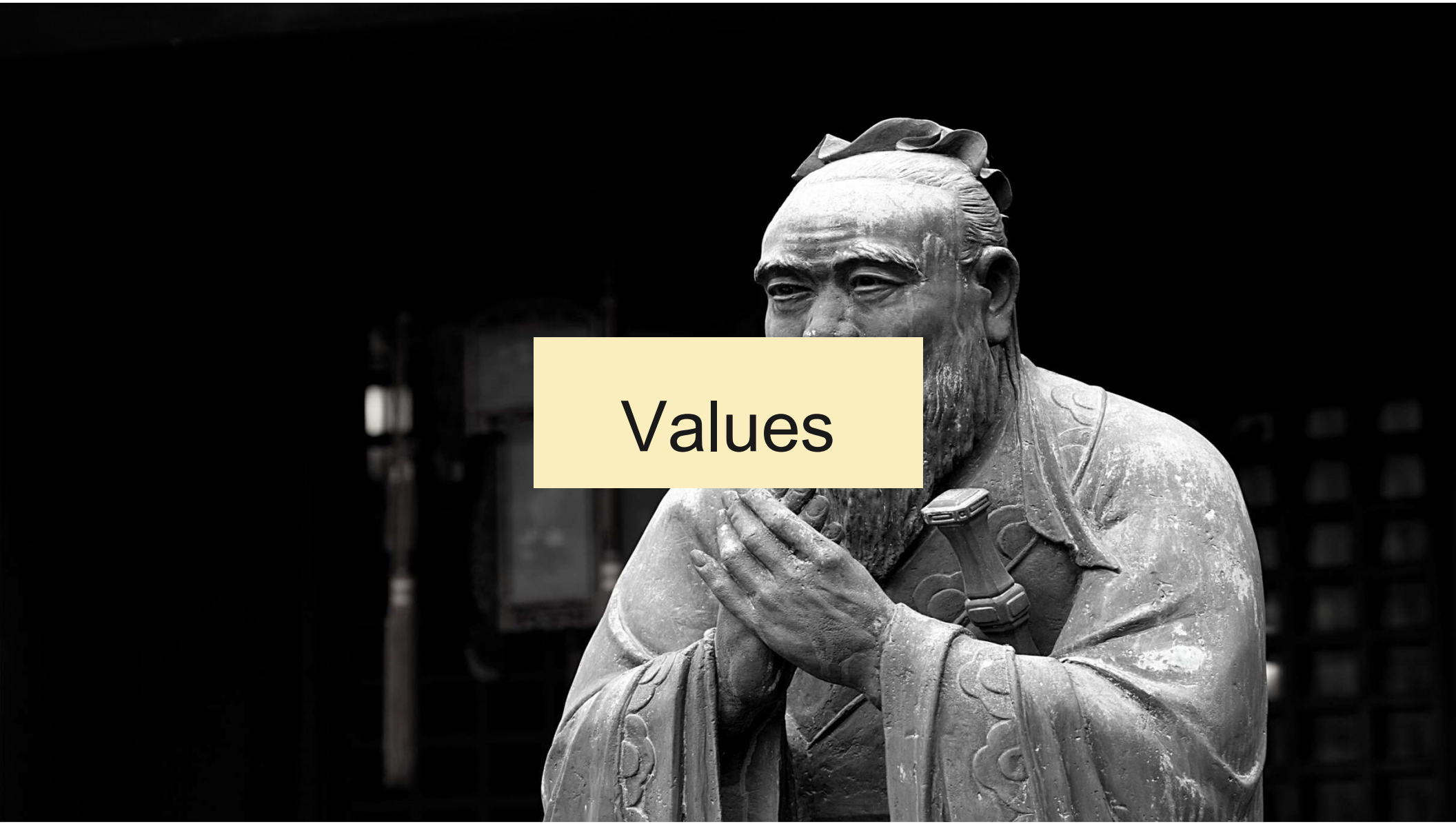
The concept of educational perennialism

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.

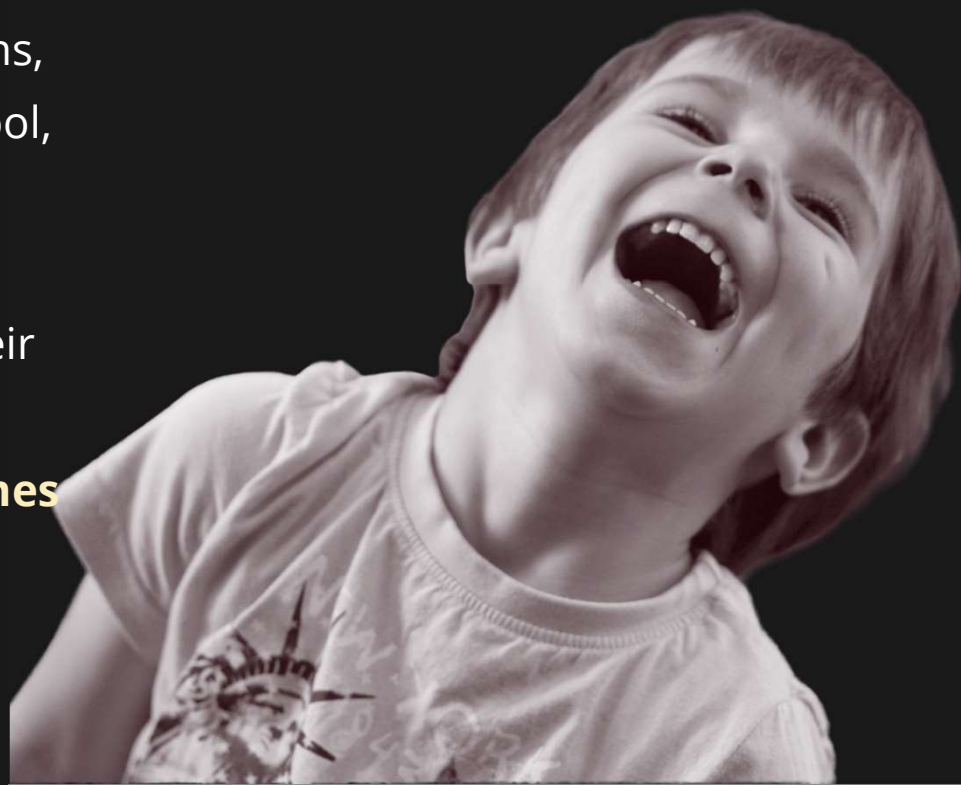



Values

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

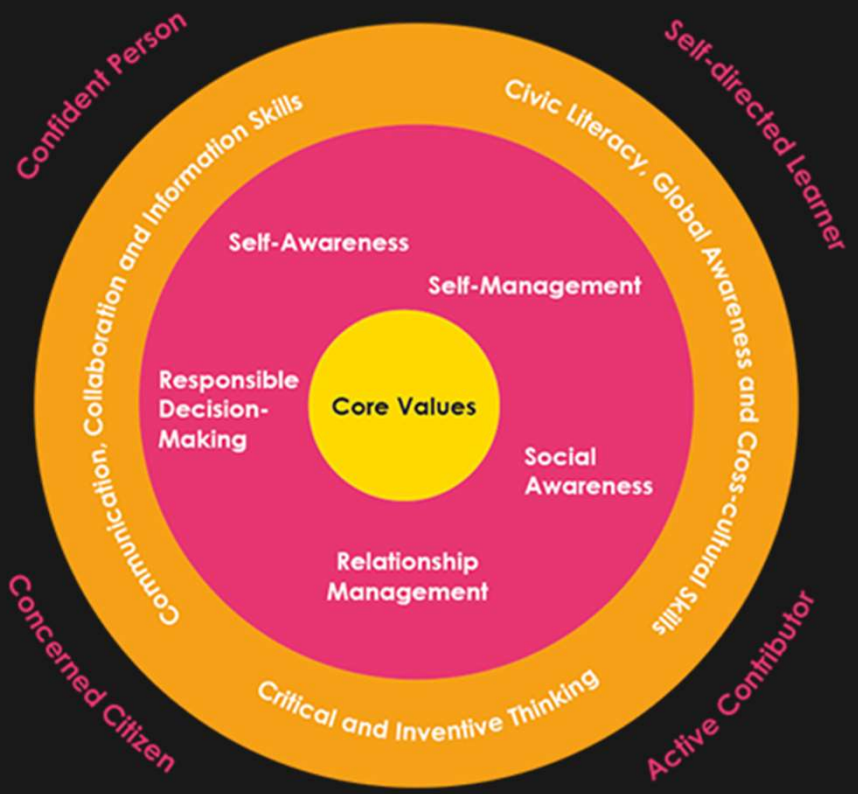
In a 2019 study, adolescents who believed that their **parents valued character traits** as much as or more than achievement **exhibited better outcomes at school,** greater mental health and less rule-breaking behavior than peers who believed their parents were **primarily achievement-minded.**



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.**



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.

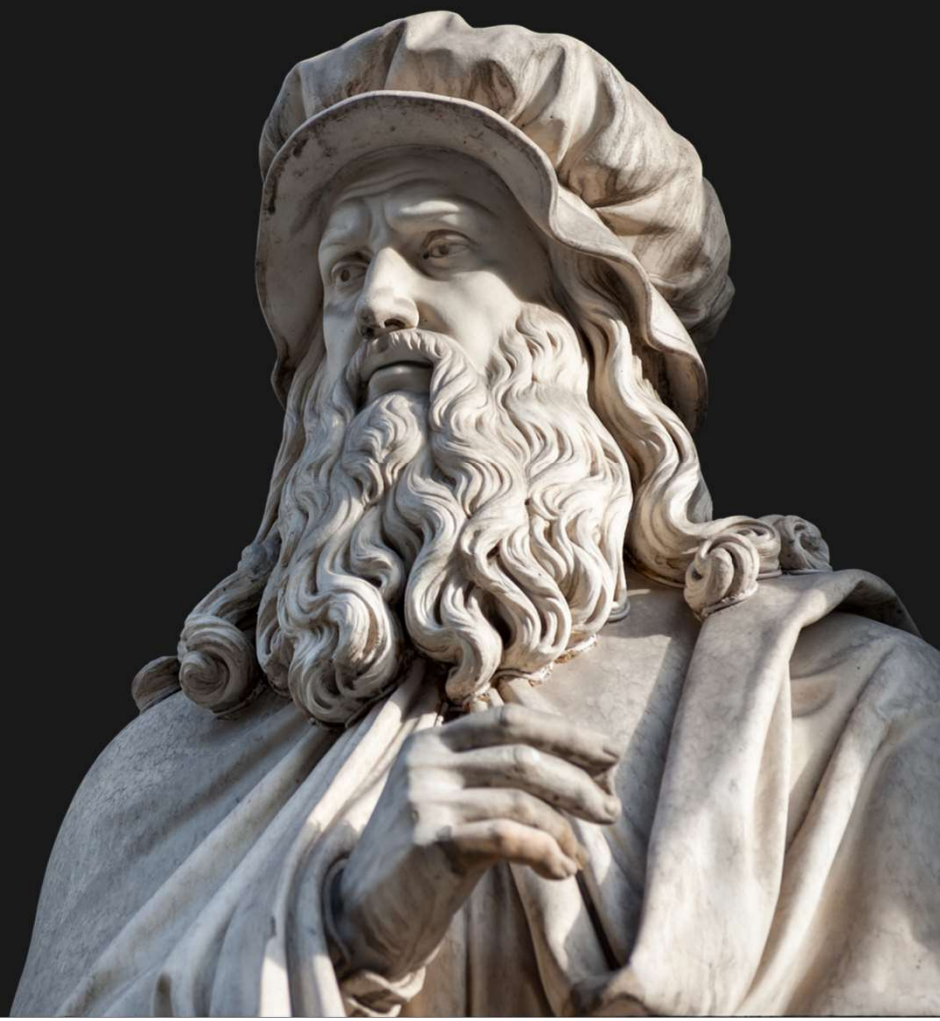
These soft skills are now highly sought after by employers, a 2019 study found.

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

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

Cliodynamics 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 → O-Level Certificate (Sec 4/Sec 5) → JC / Poly / ITE
- N(A) course → N(A)-Level Certificate (Sec 4/Sec 5) → Poly / ITE
- N(T) course → N(T)-Level Certificate (Sec 4/Sec 5) → ITE

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

After Full SBB Implementation

PSLE

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

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

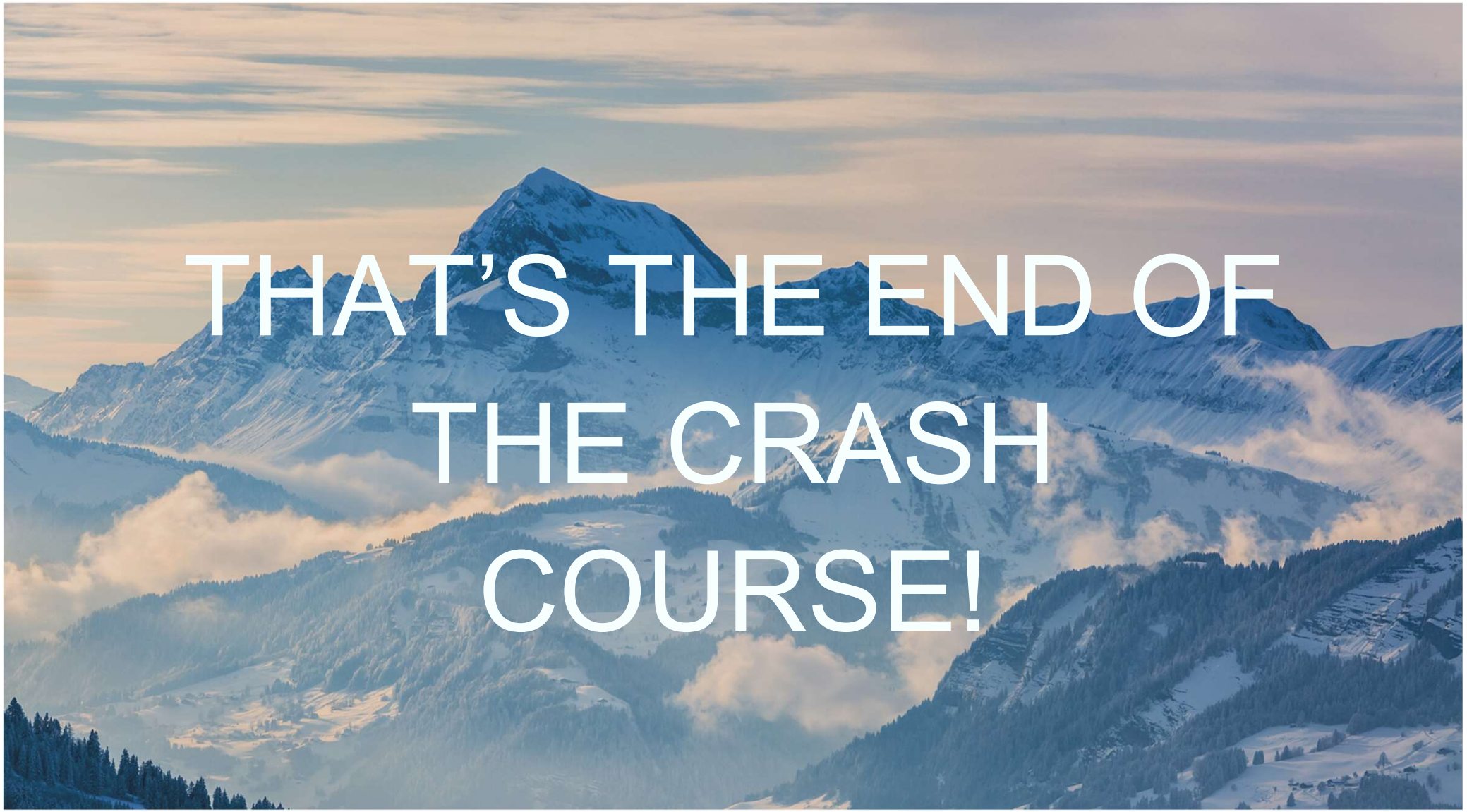
One Secondary Education, Many Subject Bands

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.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THE CRASH
COURSE!

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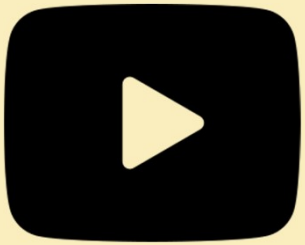

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