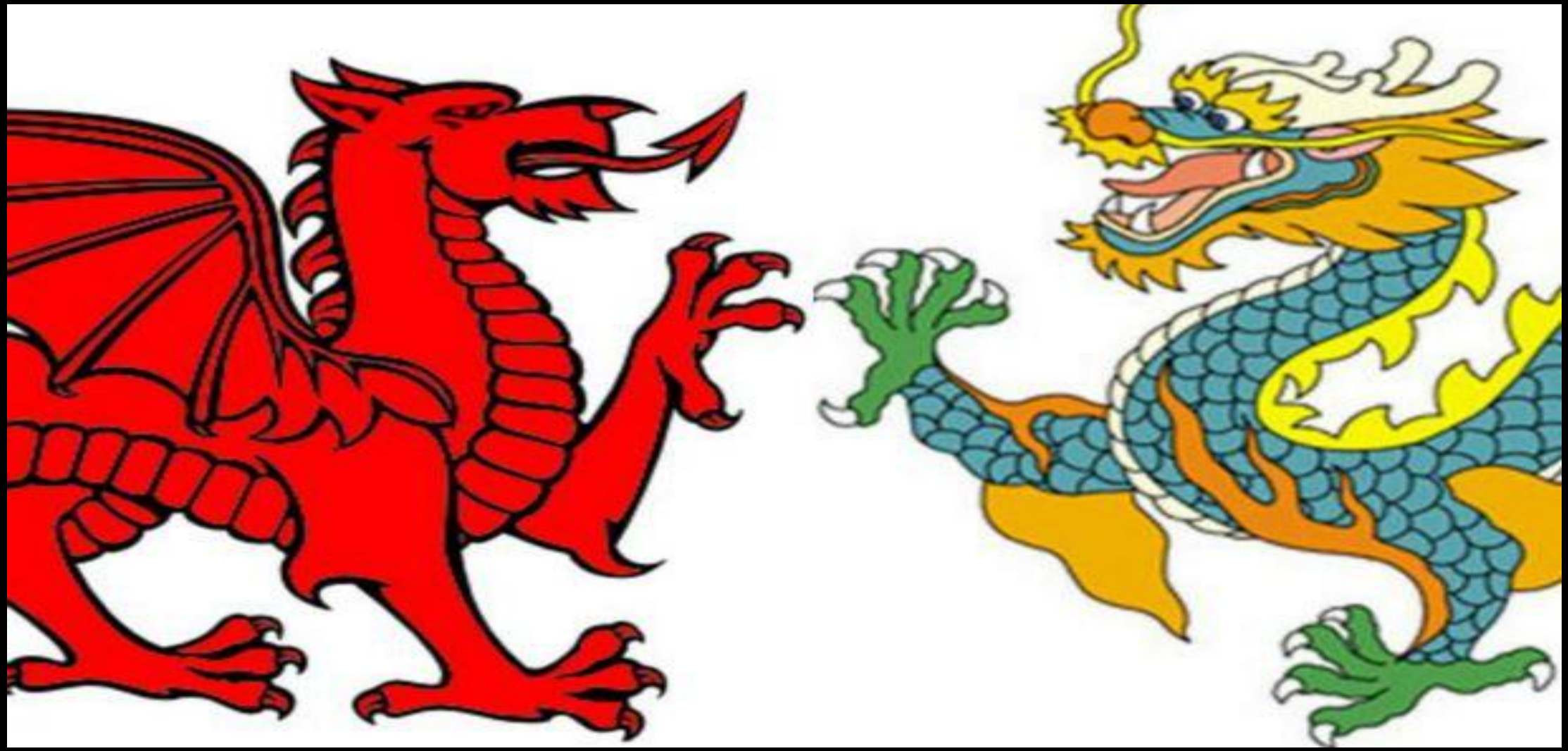
第1周第2 天 教师培训

Day 2 Week 1 Teacher Training



Prynhawn da

下午好 (Xiàwǔ hǎo)

Good afternoon

Todays session

6.30 – 6.45 Introduction

6.45 – 8. 15 Break up into groups – Les/Phil/Clair

- Complete work from yesterday
- Evidence Based Learning Part 1

8.15 – 8.30 Break

8.30 – 9.30 Evidence Based Learning Part 2

Group 1

Les Griffiths

No	Name
1	Shen Liu
2	Baiming Sun
3	Xiaolin Li
4	Manqian Chen (Mandy)
5	Weimin Liu
6	Xue Wang
7	Haitao Wang
8	Benshi Qi
9	Xingyan Cui

ID: 620 183 365 Password 2020

Group 2

Phil Jones

No	Name
1	Xingsheng Yu
2	Yu Zhang
3	Lixin Zhang
4	Shuqiang Wang
5	Fengying Yang (Mary)
6	Liping Du
7	Changyi Zhong (Michelle)
8	Shuang Cui (Collo)

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Group 3

Clair Rees

No	Name
1	Tiancheng Wang (Reece)
2	Xiaodong Yang (David)
3	Chuang Tang (Tankard)
4	Limin Du (Helen)
5	Linlin Zhu (Lynn)
6	Ying Xie (Lisa)
7	Yingshuai Dong (Paul)
8	Ming He

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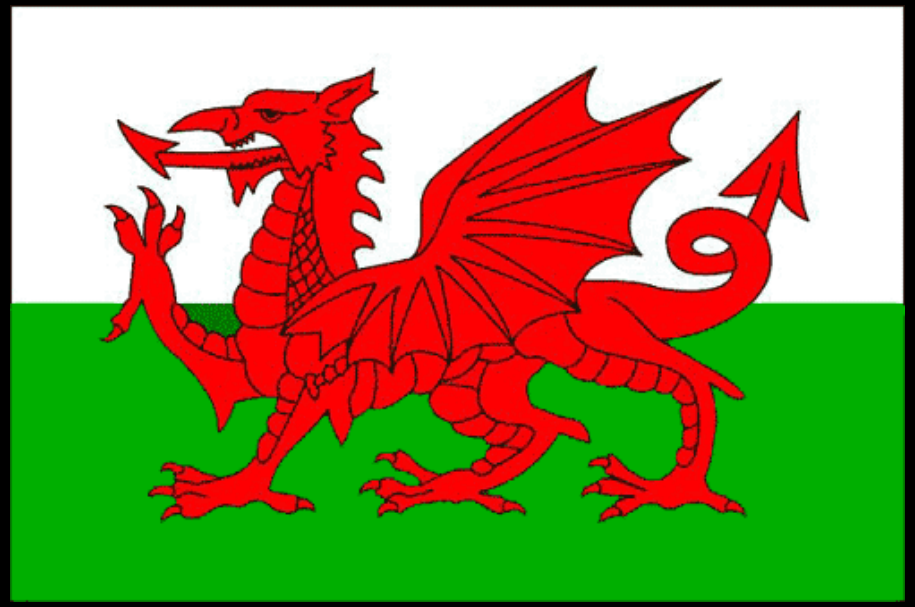
Welcome / Croeso / 欢迎(Huānyíng)



Evidence Based Teaching

循证教学


Holyhead
Anglesey
Conwy
Bangor
Caernarfon
Queensferry
Betws-y-coed
Wrexham
Portmadoc
Llangollen
Pwllheli
Dolgellau
Welshpool
Machynlleth
Newtown
Aberystwyth
Llandrindod Wells
Lampeter
Builth Wells
Cardigan
Fishguard
Llandovery
St David's
Haverfordwest
Llandeilo
Brecon
Carmarthen
Abergavenny
Milford Haven
Llanelli
Neath
Merthyr Tydfil
Pembroke
Swansea
Newport
Cardiff


The Map of China
RUSSIA
KAZAKHSTAN
MONGOLIA
UZBEKISTAN
KYRGYZSTAN
TAJIKISTAN
AFGHANISTAN
NEPAL
INDIA
BHUTAN
BANGLADESH
MYANMAR
VIETNAM
LAOS
THAILAND
CAMBODIA
PHILIPPINES
D.P.R. KOREA
R.O. KOREA
JAPAN
Yellow Sea
East China Sea
South China Sea
Bo Hai
Bay of Bengal
PACIFIC OCEAN
NORTHEAST CHINA
NORTH CHINA
NORTHWEST CHINA
EAST CHINA
CENTRAL CHINA
SOUTHWEST CHINA
SOUTH CHINA
Taiwan
Harbin
Changchun
Changbai Shan
Shenyang
Urumqi
Turpan
Kashgar
Dunhuang
Chengde
Hohhot
Beijing
Beidaihe & Shanhaiguan
Yungang Caves
Tianjin
Dalian
Wutai Shan
Yinchuan
Shijiazhuang
Taiyuan
Pingyao
Jinan
Qingdao
Tai Shan
Qufu
Xining
Lanzhou
Zhengzhou
Kaifeng
Longmen Caves
Xi'an
Hua Shan
Shaolin Temple
Jiuzhaigou
Yangzhou
Hefei
Nanjing
Suzhou
Shanghai
Wudang Shan
Hangzhou
Shaoxing
Huang Shan
Wuhan
Lu Shan
Lhasa
Chengdu
Dujiangyan
Dazu Rock Carvings
Emei Shan
Leshan
Chongqing
Wulingyuan
Changsha
Nanchang
Wuyi Shan
FuZhou
Taipei
Lijiang
Guiyang
Dali
Kunming
Guilin
Yangshuo
Xiamen
Nanning
Guangzhou
Shenzhen
Macau
Hong Kong
Haikou
Sanya
Beibu Gulf
Hainan
Dongsha Qundao
Xisha Qundao
Zhongsha Qundao
Nansha Qundao

What determines professional practices?

- Superstition?
- Folklore?
- Craft?
- Science?

Superstition

"Unsubstantiated world views derived from intuition or legend"

Galileo first observed moons around Jupiter in 1610. His observations were derided.

Folk beliefs, correlations, anecdotes, intuition

If a mother carries a child higher in the abdomen, she will have a girl, and if lower, a boy.

Teachers are urged to teach to children's learning styles in their instruction even today !

Craft

Traditionally, many disciplines were based on observations, knowledge, and experience.

You practise the way you were trained, and adapt practice according to experience.

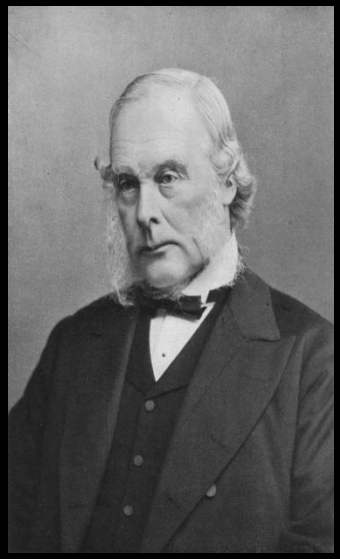
You may learn from colleagues, but an absence of systematic questioning of efficacy.

Practices are *time honoured.*

Science

Until recent times, research findings have had little impact on medical practice.

Joseph Lister showed how bacterial infection occurred. No impact on surgical cleanliness for more than 50 years.



Doctor Spock‘s 1940’s advice to have infants sleep face down was associated with 60,000 deaths from SIDS between 1974 and 1991. The risk was first identified in 1970, but ignored until the 1990’s.

So what’s changed ?

History of evidence-based practice

In medicine, early 1990's

Evidence Based Medicine is "the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine means integrating individual clinical experience with the best available external clinical evidence from systematic research

(David Sackett, 1996).

Evidence-based practice

In medicine, psychology, and numerous other disciplines, *randomized controlled trials* have become the gold standard for evaluating an intervention's effectiveness.

This type of study is the least likely to suffer from threats to validity and reliability

Training courses in these professions include a strong emphasis on empirical research design.

Science impact on other professions

"A mature profession . . . is characterized by a shift from judgments of *individual experts* to judgments constrained by *quantified data* that can be inspected by a broad audience, less emphasis on *personal trust* and more on *objectivity*, and a greater role for *standardized measures and procedures* informed by scientific investigations that use *control groups*"

(Professor Douglas *Carnine* of the University of Oregon 2000).

"...if you think you know the truth without having to collect any data, that saves a lot of time"

(Professor Keith Stanovich, University of Toronto 2000)

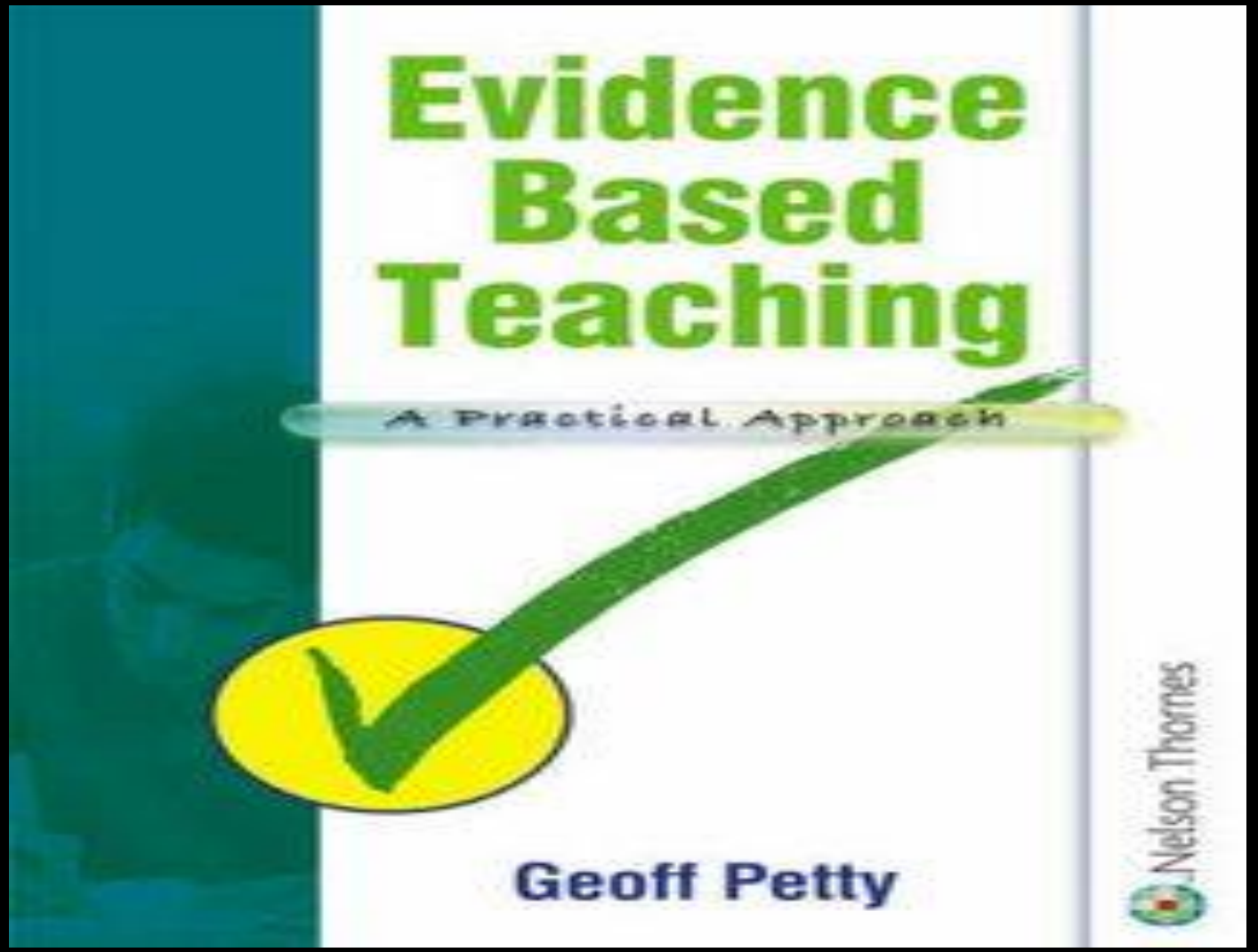
EBP in many fields now strongly promoted.

"Those fields that have displayed unprecedented development over the last century, such as *medicine, technology, transportation, and agriculture* have been those embracing research as the prime determinant of practice"

(Richard Shavelson & Lisa Towne, 2002).

Education is moving in this direction ?

What is Evidence Based Teaching ?

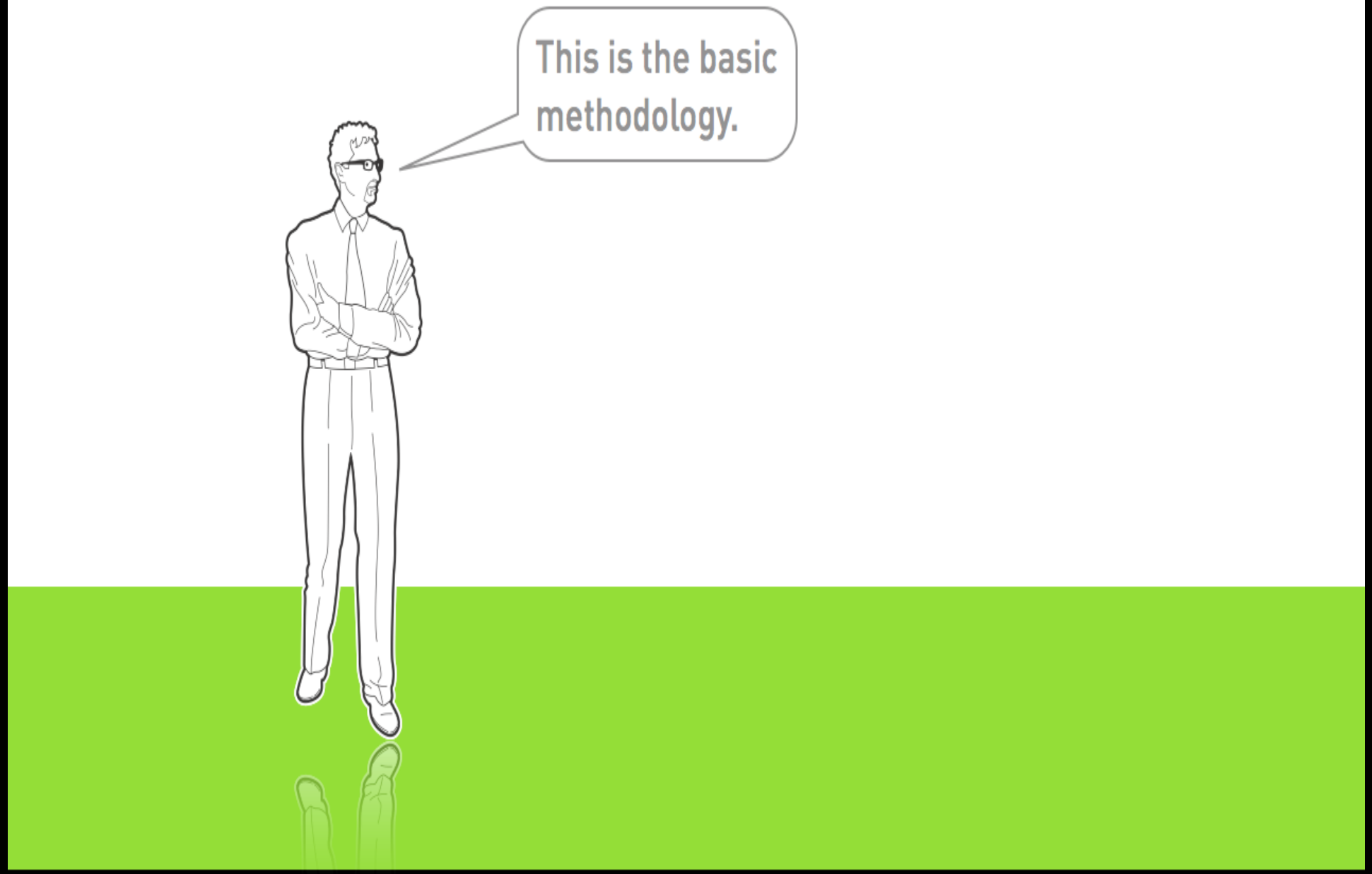


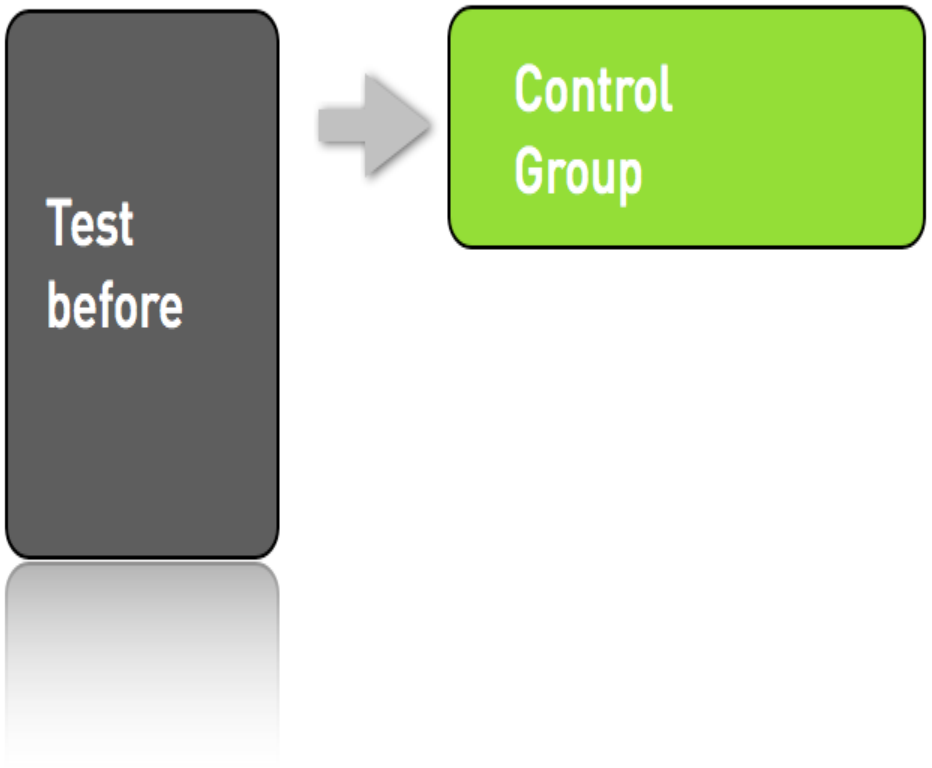
Effect Sizes

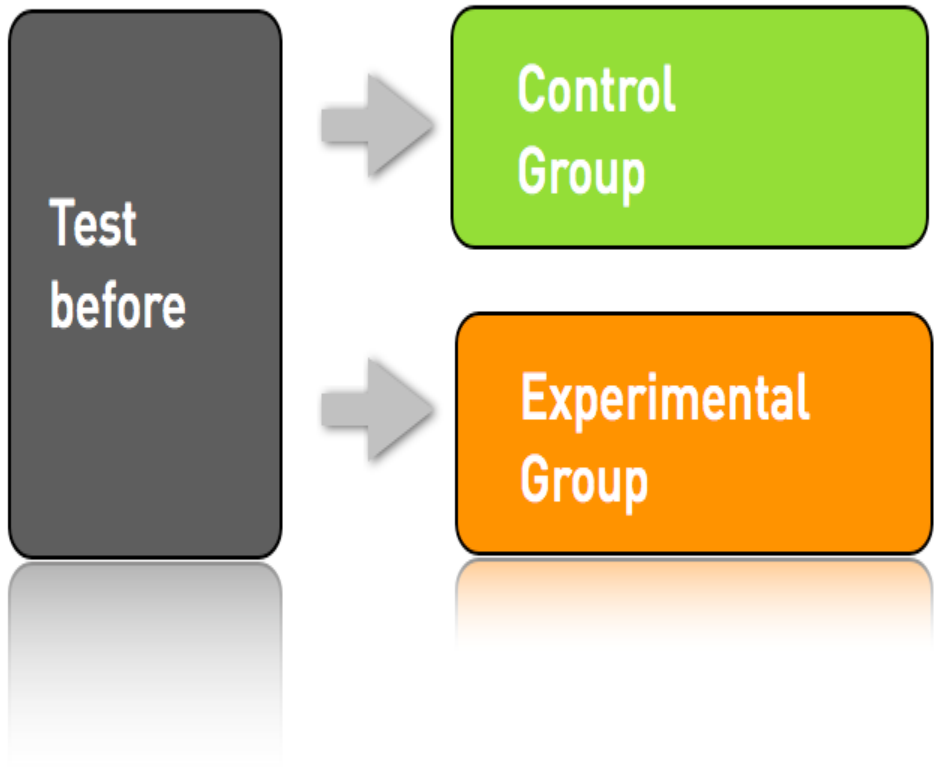
TRAIN VISUAL .com

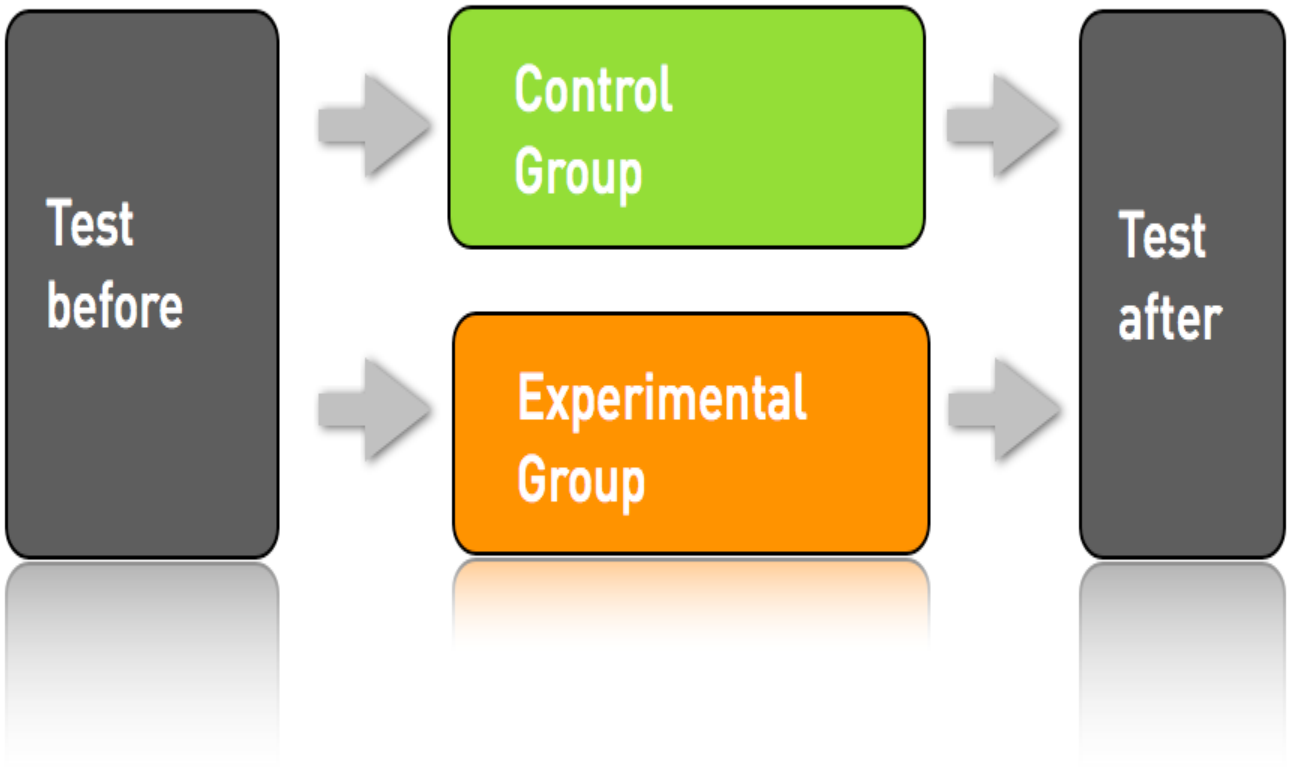
How we get them

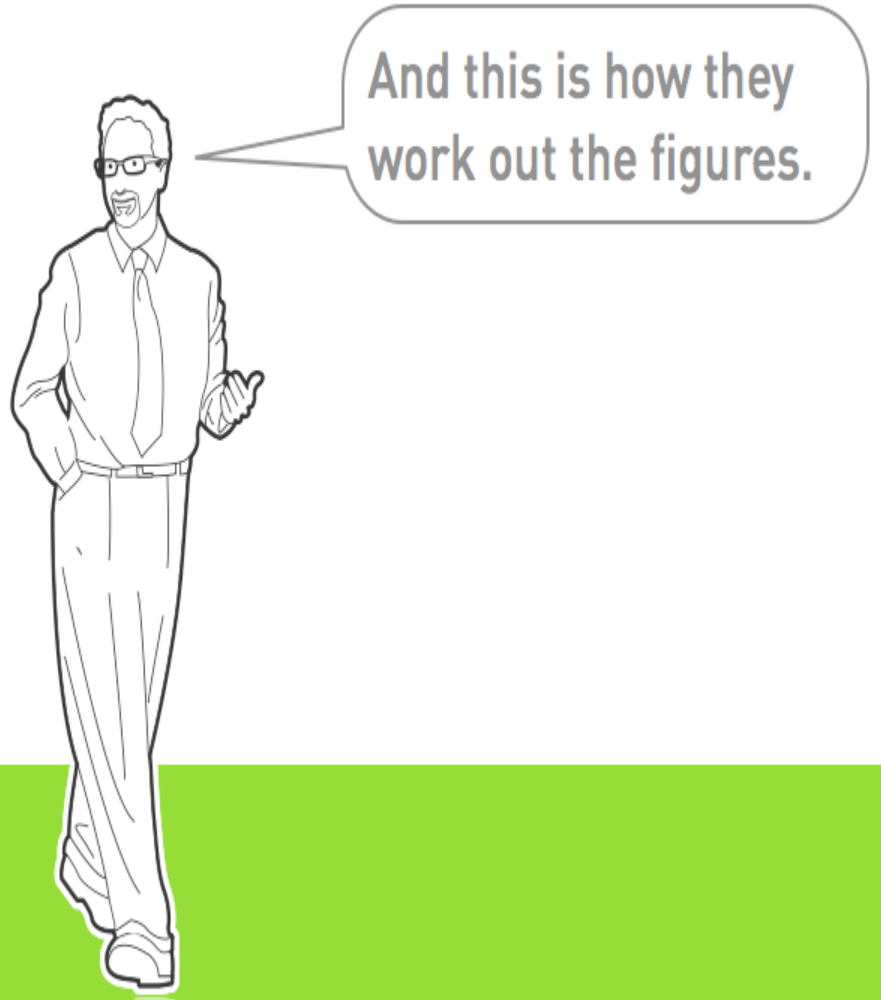
1

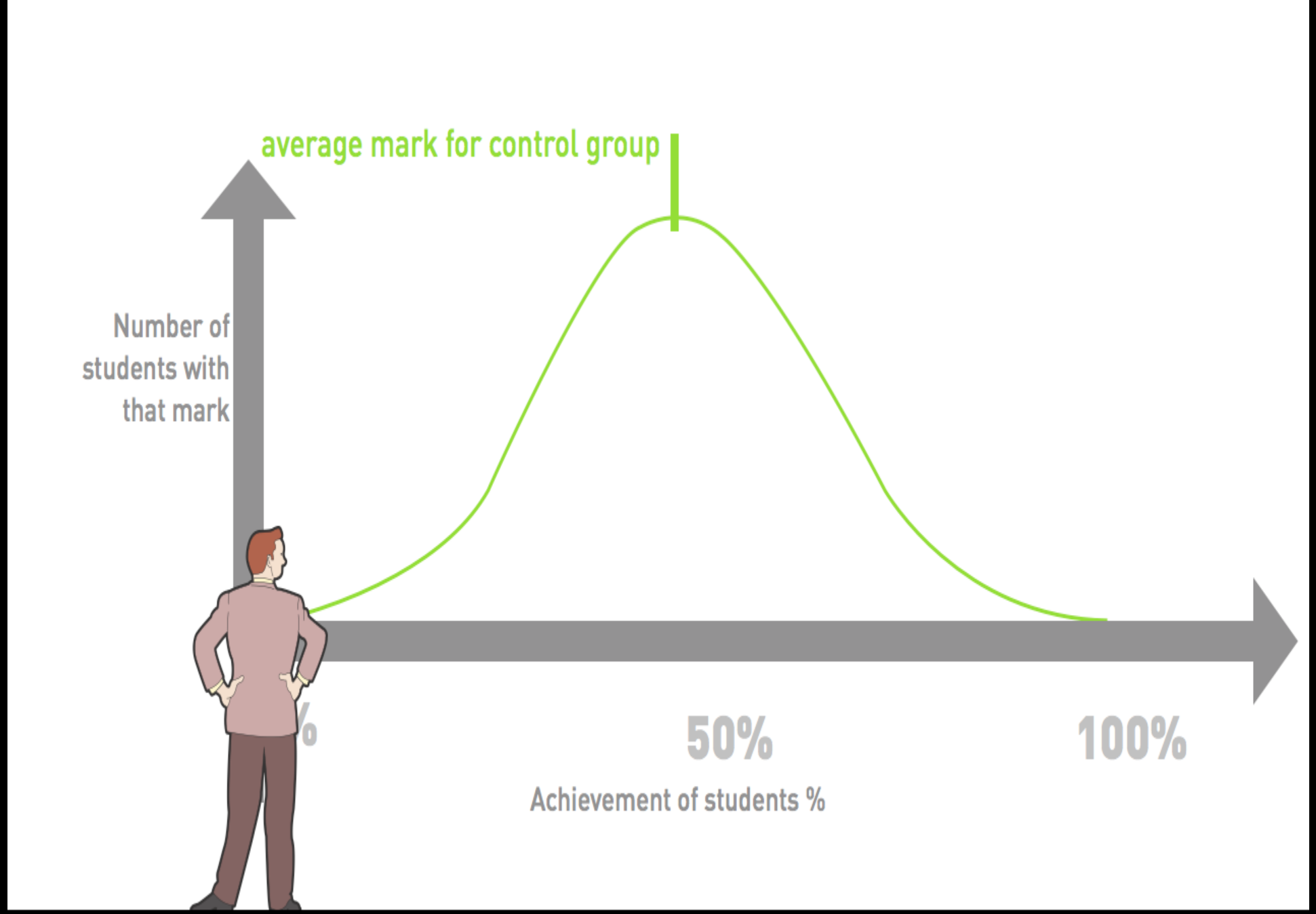


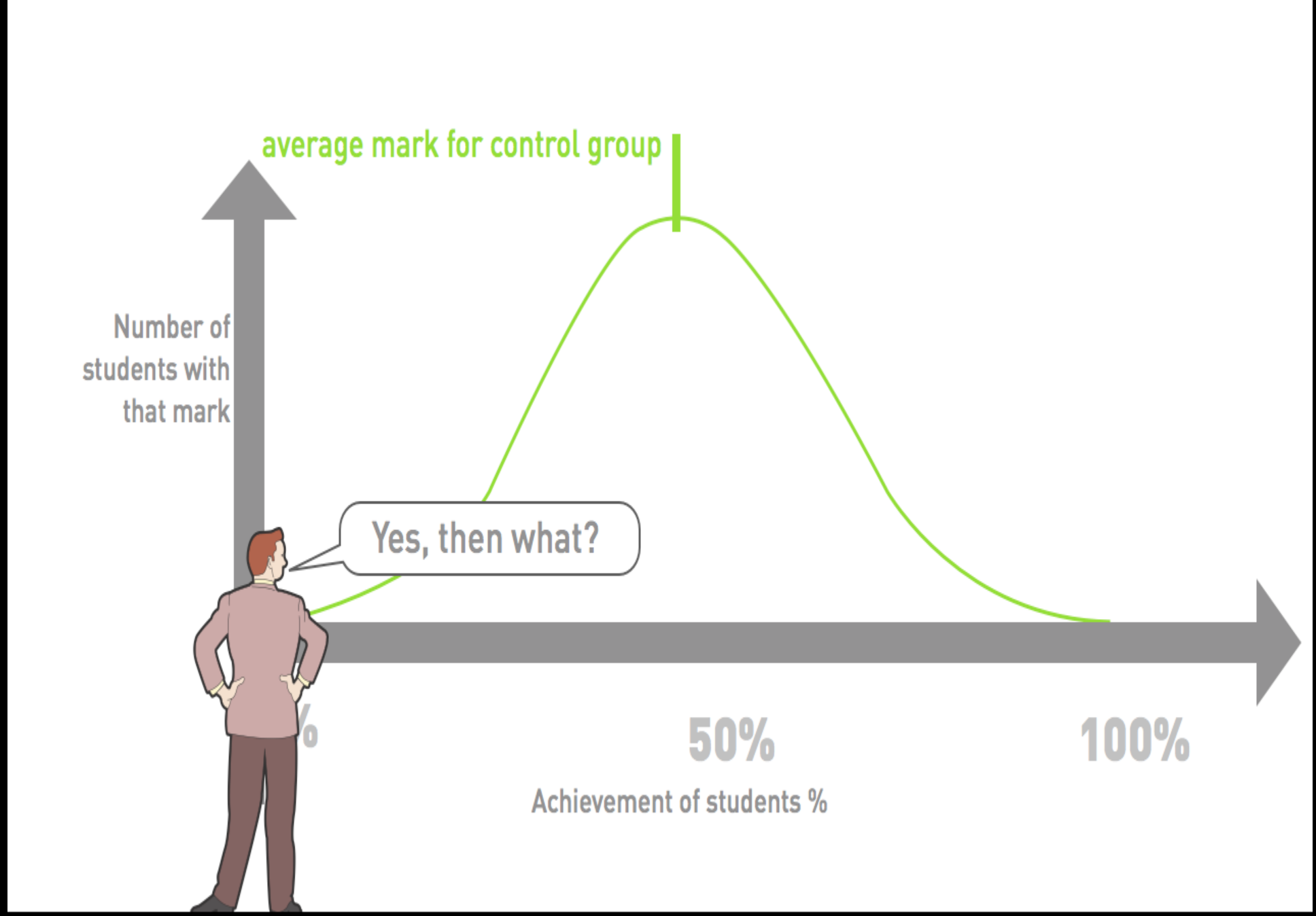

Test
before
Control
Group

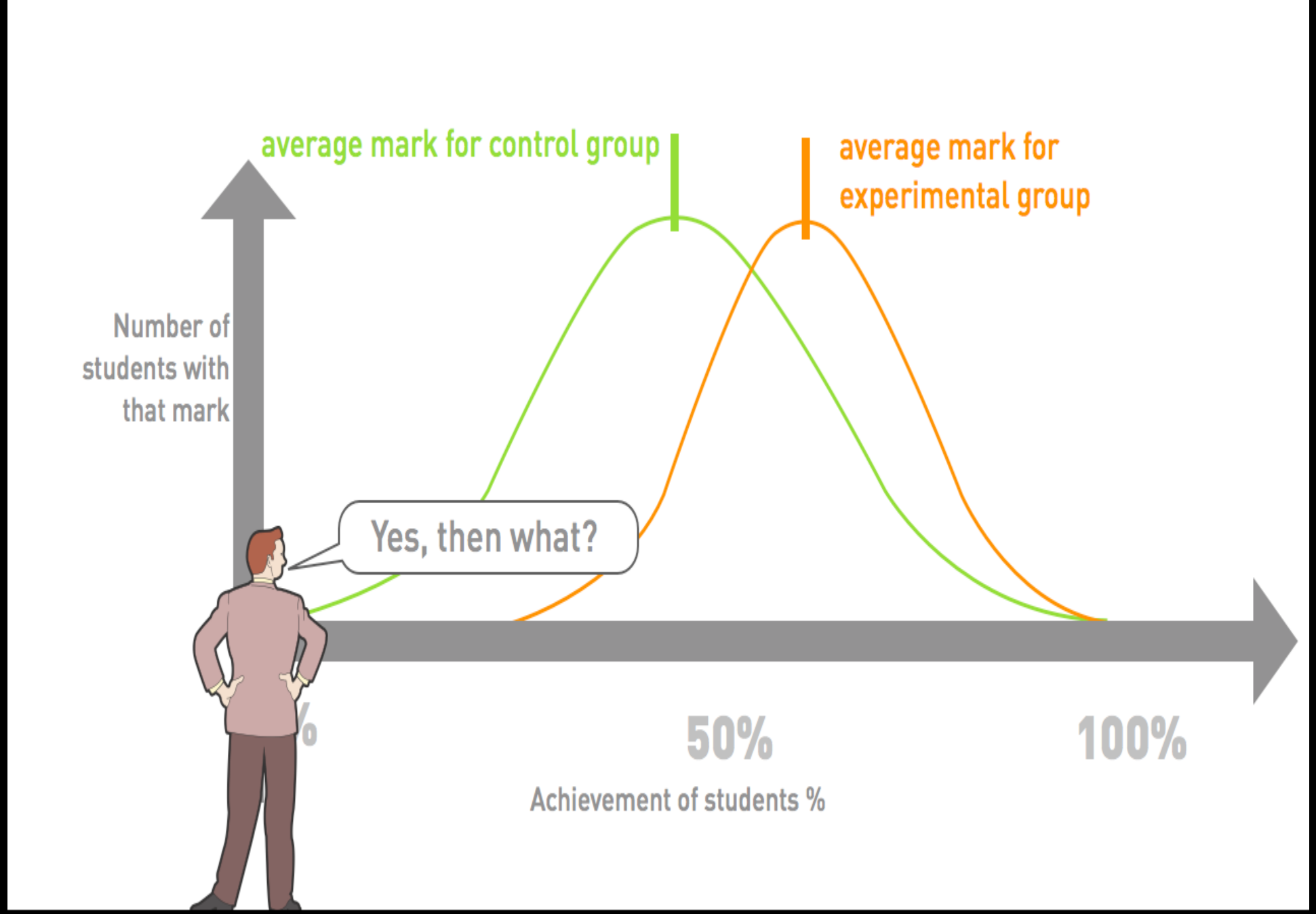


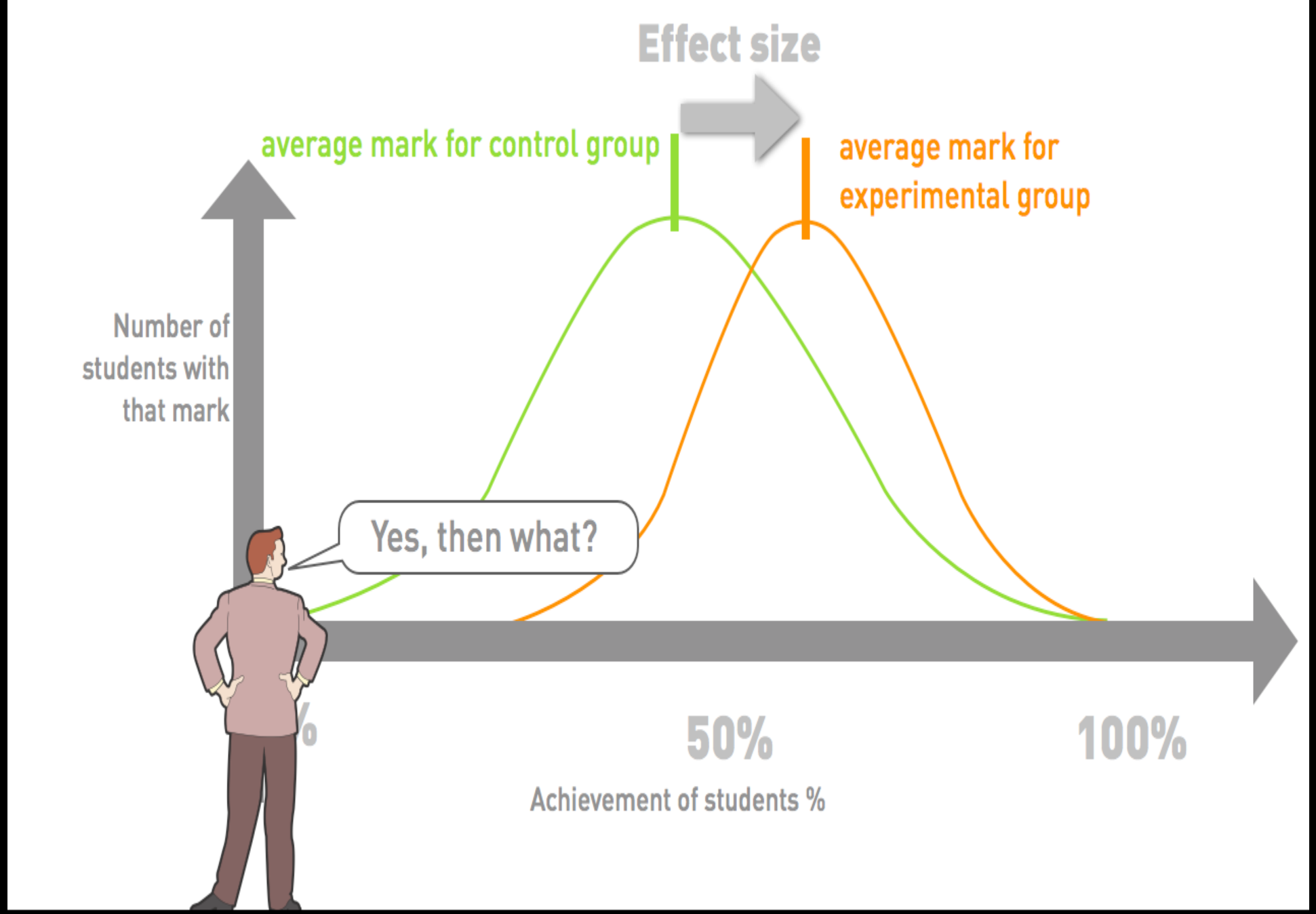


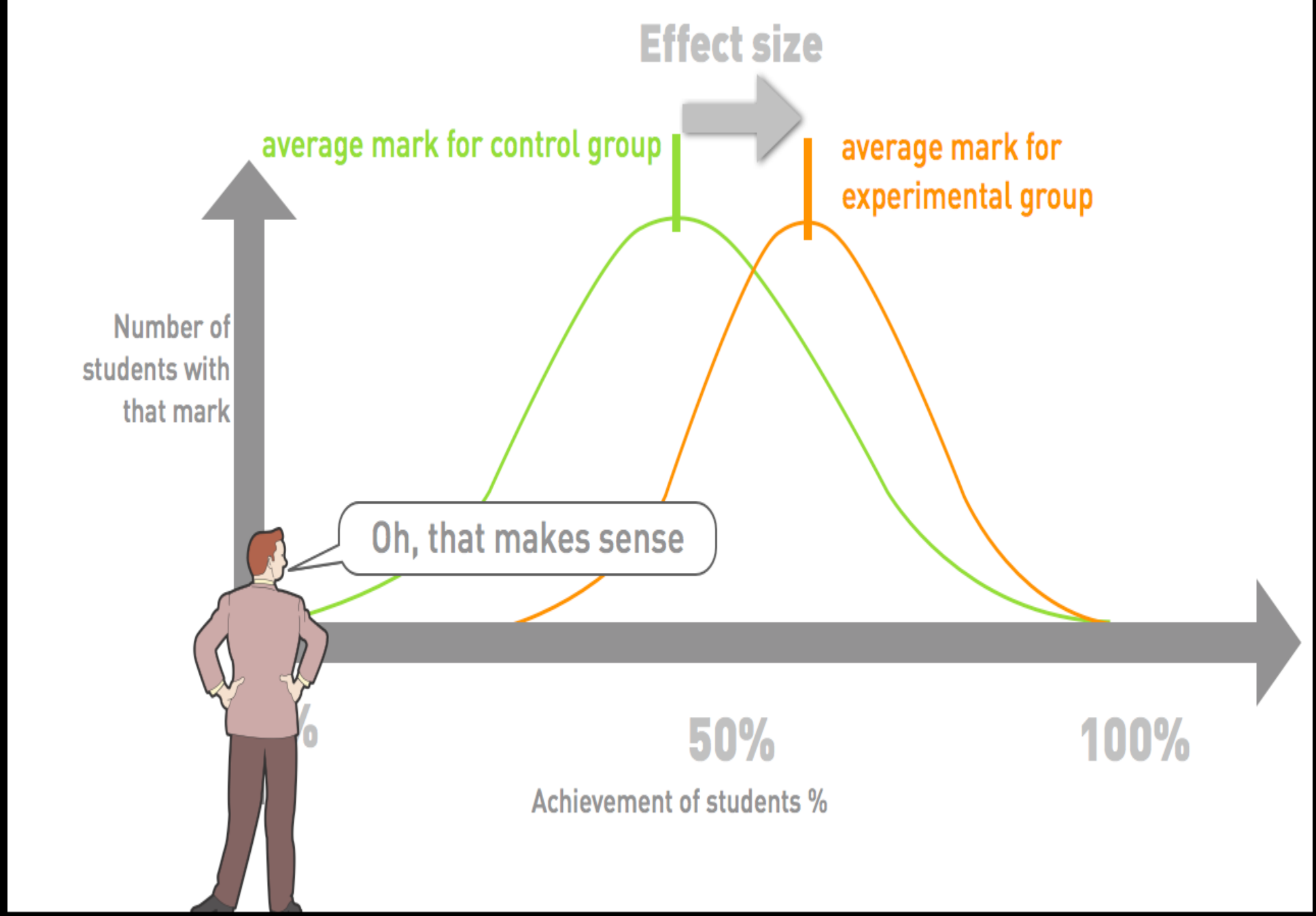




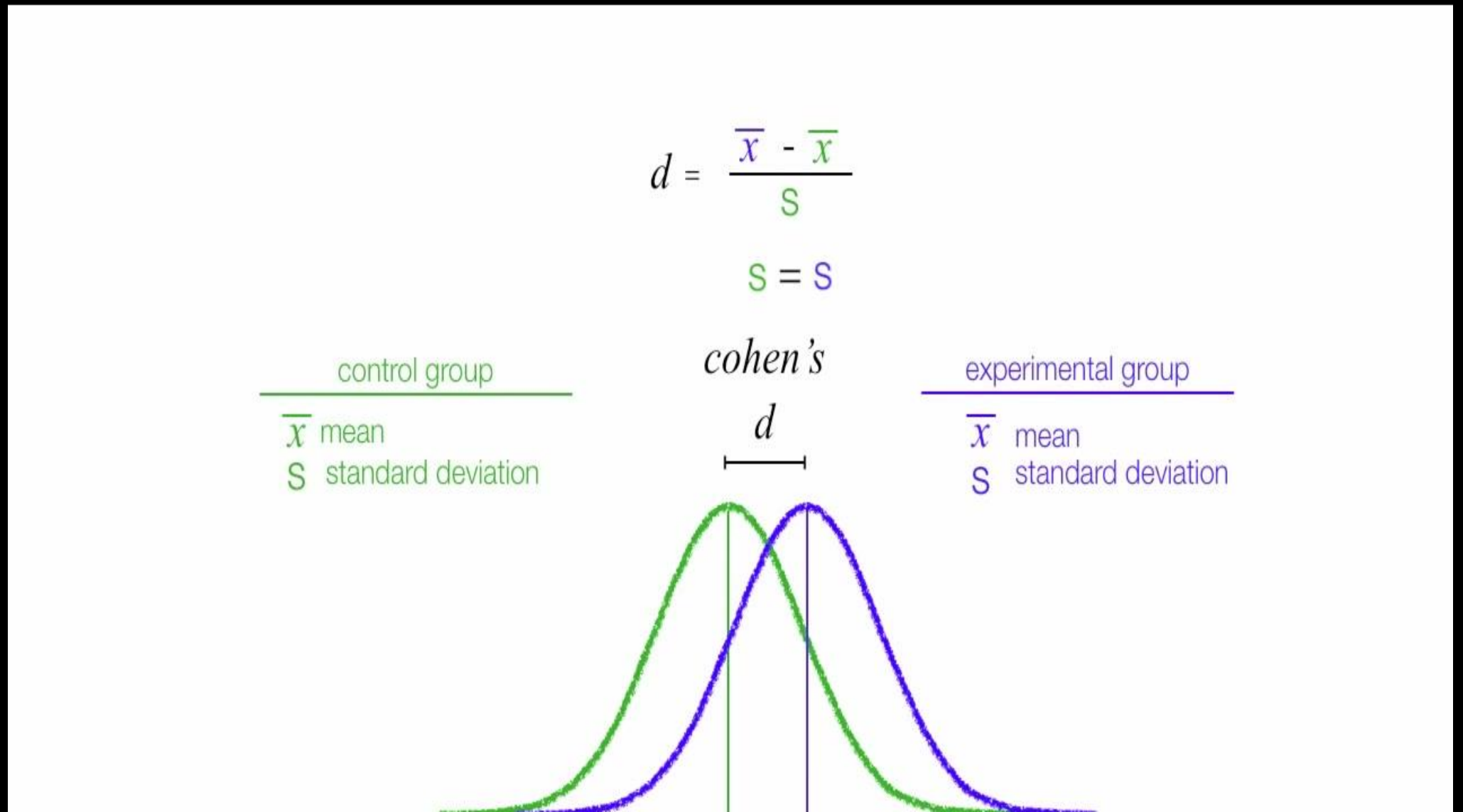








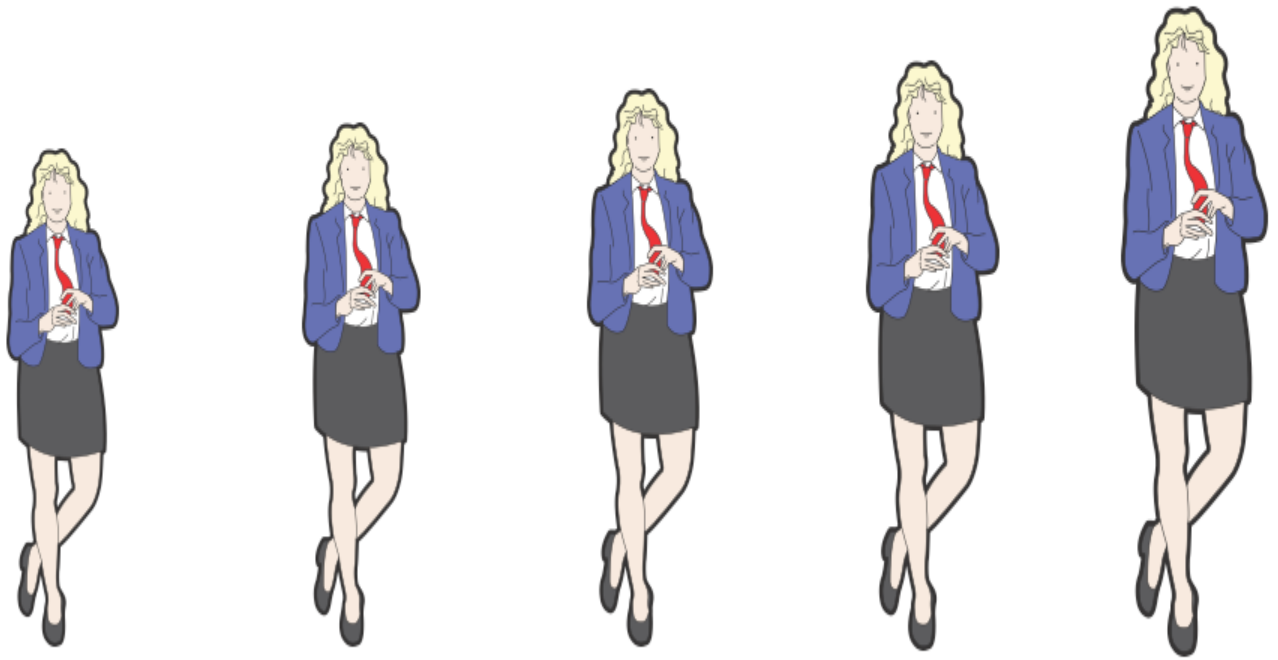
How to calculate Cohen d effect size



How they apply

2

Height



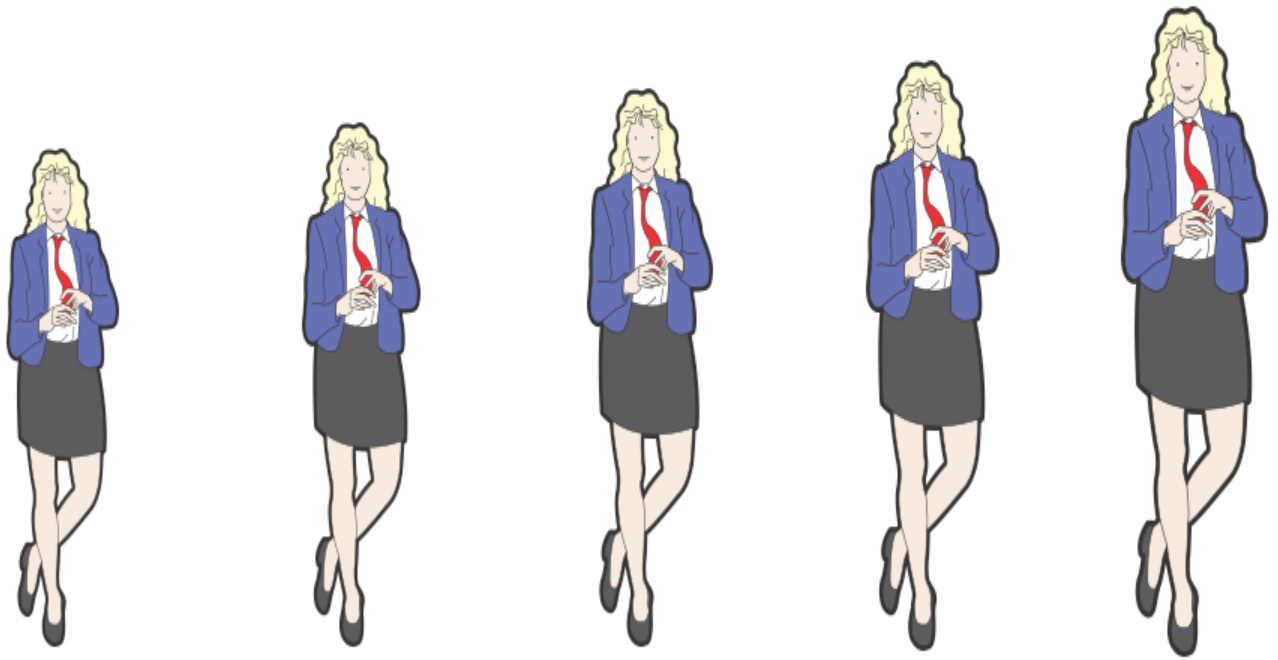
13 14 15 16 18

Height

0.2

13 14 15 16 18

Height



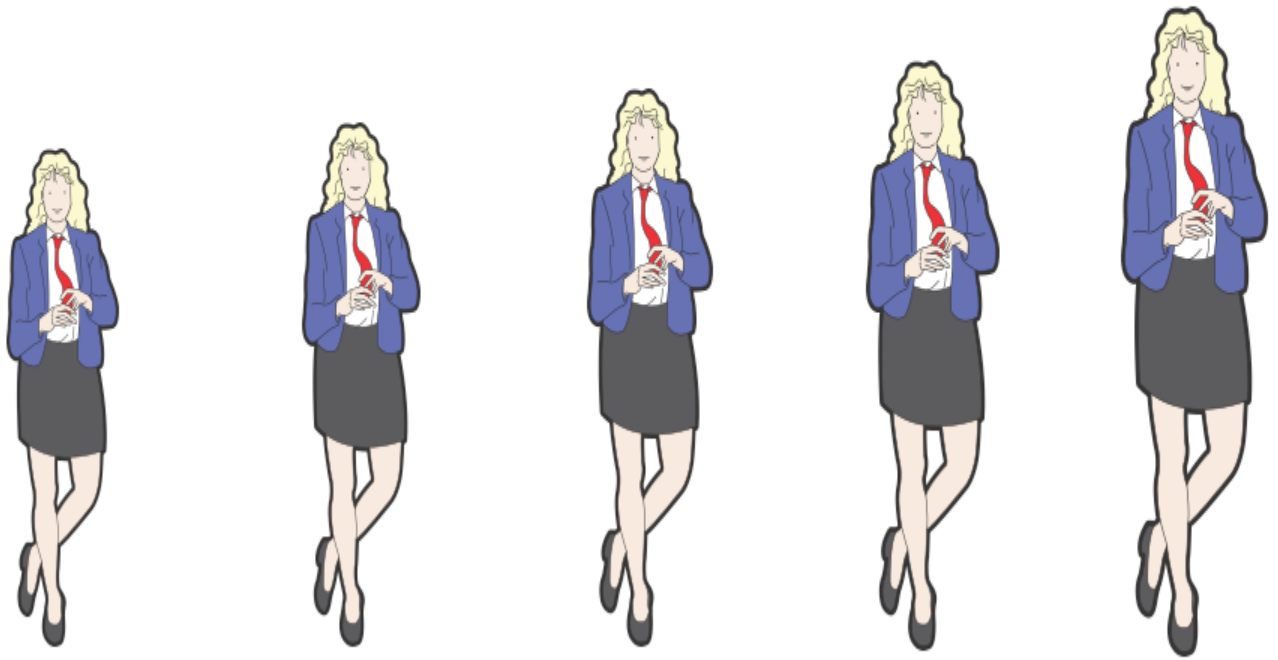
13 14 15 16 18

Height

0.5

13 14 15 16 18

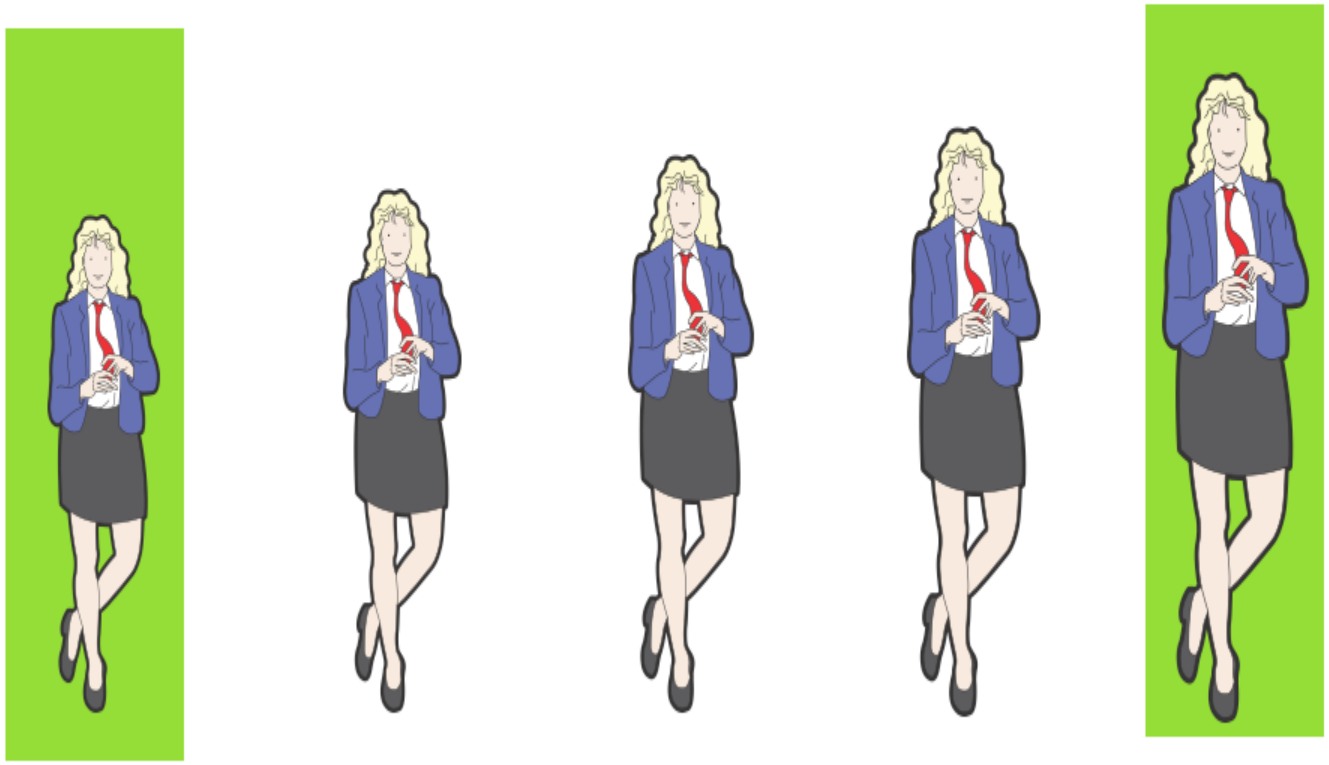
Height



13 14 15 16 18

Height

0.8



13 14 15 16 18

0.1 Normal annual maturation, no teaching

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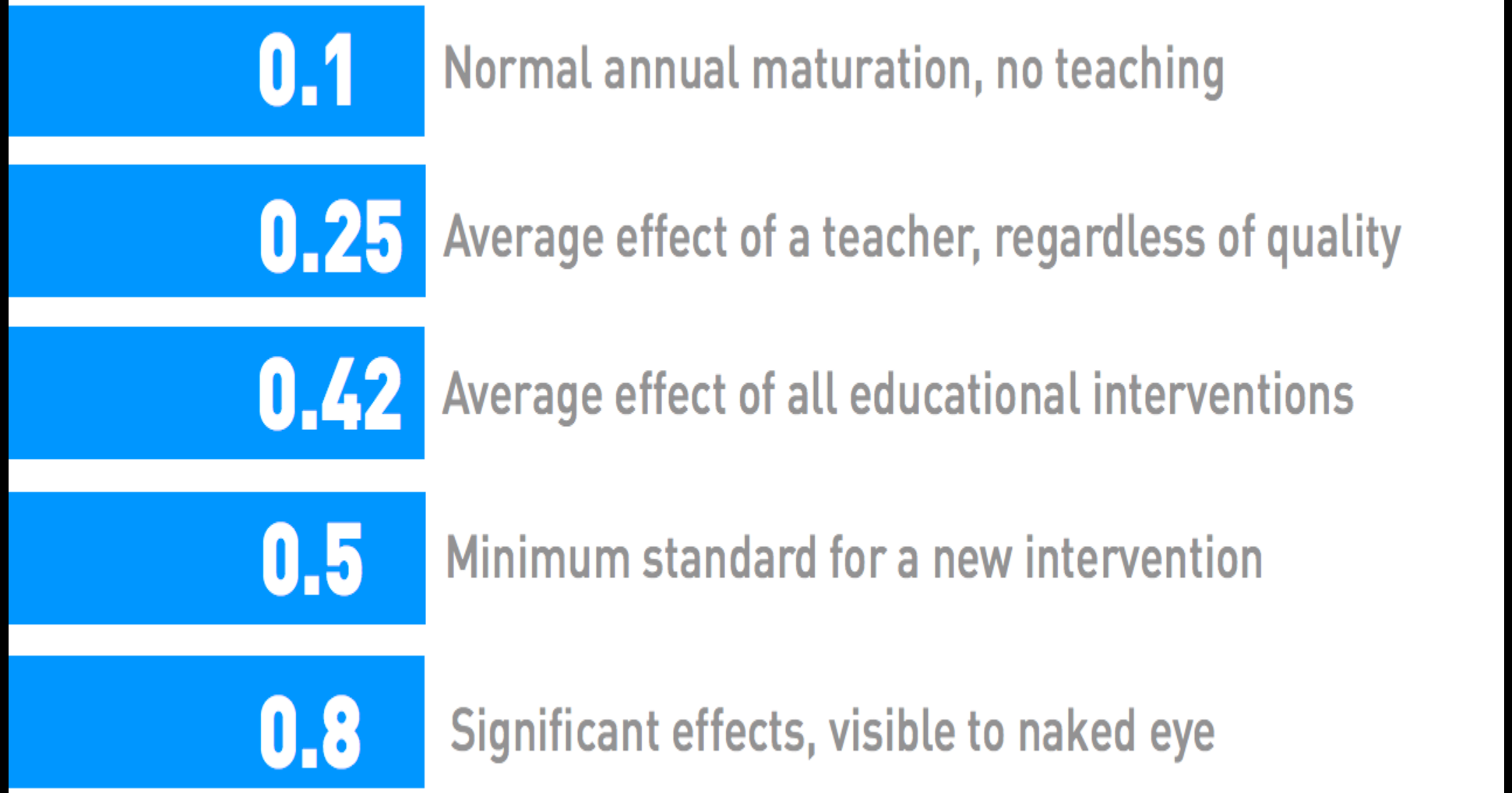
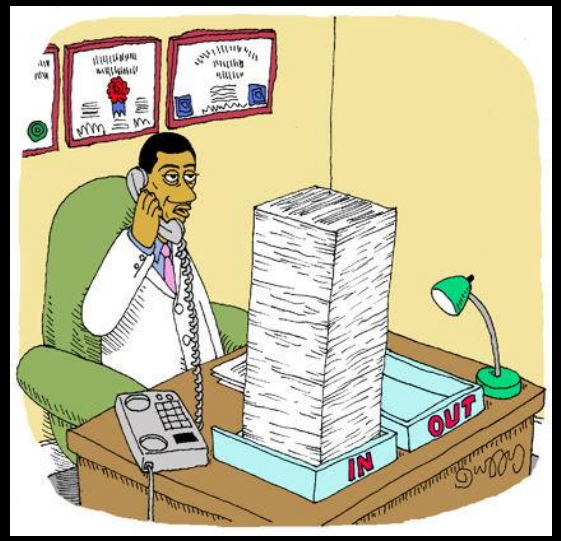
0.25 Average effect of a teacher, regardless of quality

0.1	Normal annual maturation, no teaching
0.25	Average effect of a teacher, regardless of quality
0.42	Average effect of all educational interventions

0.1	Normal annual maturation, no teaching
0.25	Average effect of a teacher, regardless of quality
0.42	Average effect of all educational interventions
0.5	Minimum standard for a new intervention



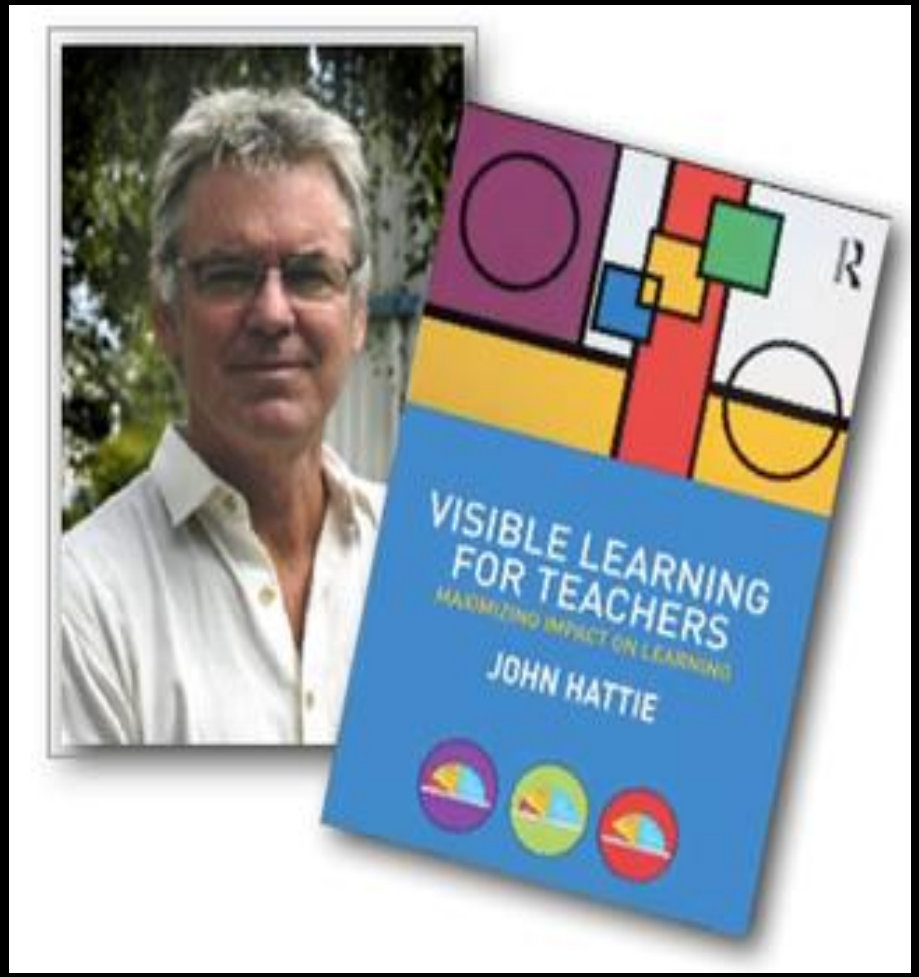
How can practitioners access the findings?

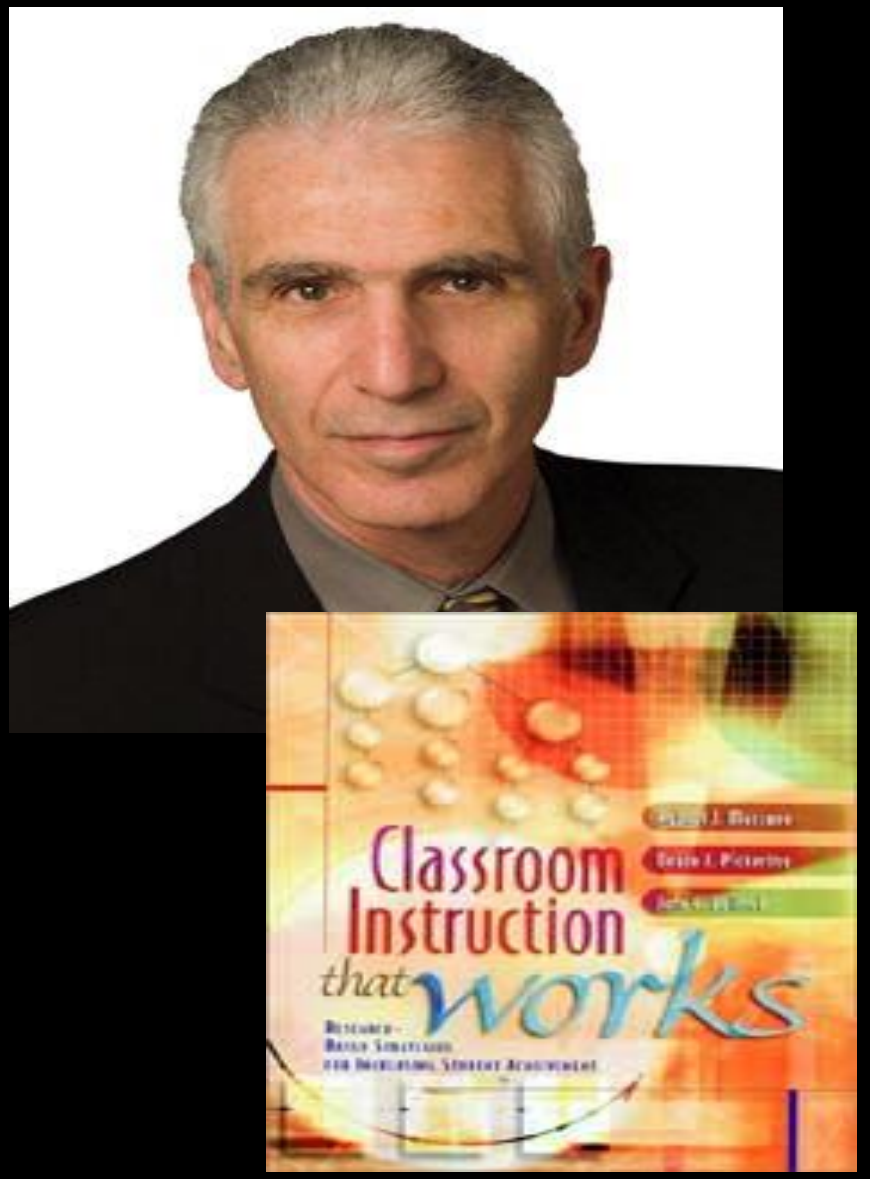


The greatest achievement of evidence-based approaches has been the development of systematic reviews and meta-analyses (aggregated studies).

These enable easier access to *what works.*

Two largest Meta Analysis of Teaching Techniques





- Write down ten teaching techniques you think would have the greatest effect on learning.

	Effect size	Top Ten effective Classroom Methods (From Marzano 2012)
1	1.60	Identifying similarities and differences, using similes & analogies
2	1.00	Summarizing and note-making
3	0.80	Developing a growth mindset
4	0.77	Repetition and practice
5	0.77	Non-linguistic representation (Graphical methods)
6	0.73	Cooperative learning
7	0.68	Goals and feedback
8	0.61	Generating and testing hypotheses
9	0.59	Activating prior knowledge
10	0.59	Advance organisers

Teaching strategies

3

John Hattie's effect size table

01	Direct Instruction	0.93

John Hattie's effect size table

01	Direct Instruction	0.93
02	Reciprocal Teaching	0.86

John Hattie's effect size table

01	Direct Instruction	0.93
02	Reciprocal Teaching	0.86
03	Feedback for Learning	0.81

John Hattie's effect size table

01	Direct Instruction	0.93
02	Reciprocal Teaching	0.86
03	Feedback for Learning	0.81
04	Strategy Training	0.80

John Hattie's effect size table

01	Direct Instruction	0.93
02	Reciprocal Teaching	0.86
03	Feedback for Learning	0.81
04	Strategy Training	0.80
05	Classroom Behaviour	0.71

John Hattie's effect size table

01	Direct Instruction	0.93
02	Reciprocal Teaching	0.86
03	Feedback for Learning	0.81
04	Strategy Training	0.80
05	Classroom Behaviour	0.71
06	Prior Achievement	0.71

John Hattie's effect size table

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02	Reciprocal Teaching	0.86
03	Feedback for Learning	0.81
04	Strategy Training	0.80
05	Classroom Behaviour	0.71
06	Prior Achievement	0.71
07	Phonological awareness	0.71

John Hattie's effect size table

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06	Prior Achievement	0.71
07	Phonological awareness	0.71
08	Home Environment	0.69

John Hattie's effect size table

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10	Cooperative Learning	0.59

Robert Marzano's effect size table

01	Similarities & Differences	1.32

Robert Marzano's effect size table

01	Similarities & Differences	1.32
02	Graphic Organisers	1.24

Robert Marzano's effect size table

01	Similarities & Differences	1.32
02	Graphic Organisers	1.24
03	Challenging Goals	1.13

Robert Marzano's effect size table

01	Similarities & Differences	1.32
02	Graphic Organisers	1.24
03	Challenging Goals	1.13
04	Feedback for Learning	0.99

Robert Marzano's effect size table

01	Similarities & Differences	1.32
02	Graphic Organisers	1.24
03	Challenging Goals	1.13
04	Feedback for Learning	0.99
05	Note Making	0.89

Robert Marzano's effect size table

01	Similarities & Differences	1.32
02	Graphic Organisers	1.24
03	Challenging Goals	1.13
04	Feedback for Learning	0.99
05	Note Making	0.89
06	Relevant Recall Questions	0.79

Robert Marzano's effect size table

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03	Challenging Goals	1.13
04	Feedback for Learning	0.99
05	Note Making	0.89
06	Relevant Recall Questions	0.79
07	Manipulatives	0.71

Robert Marzano's effect size table

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Robert Marzano's effect size table

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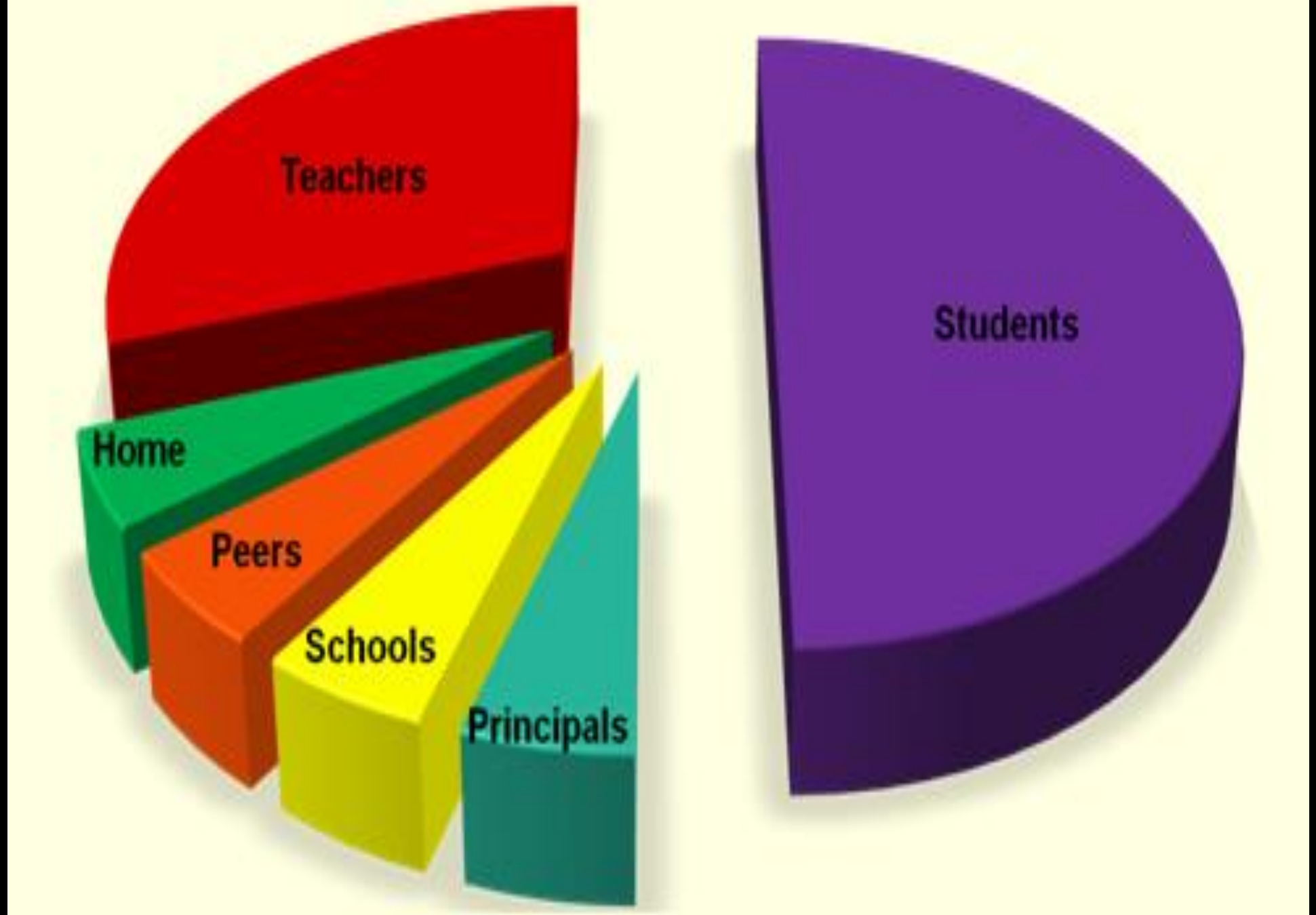
“Reviews of research on in-service staff training show that training often does not change teaching”

Why ?

Joyce & Showers 2002

Timperley *et al* 2007

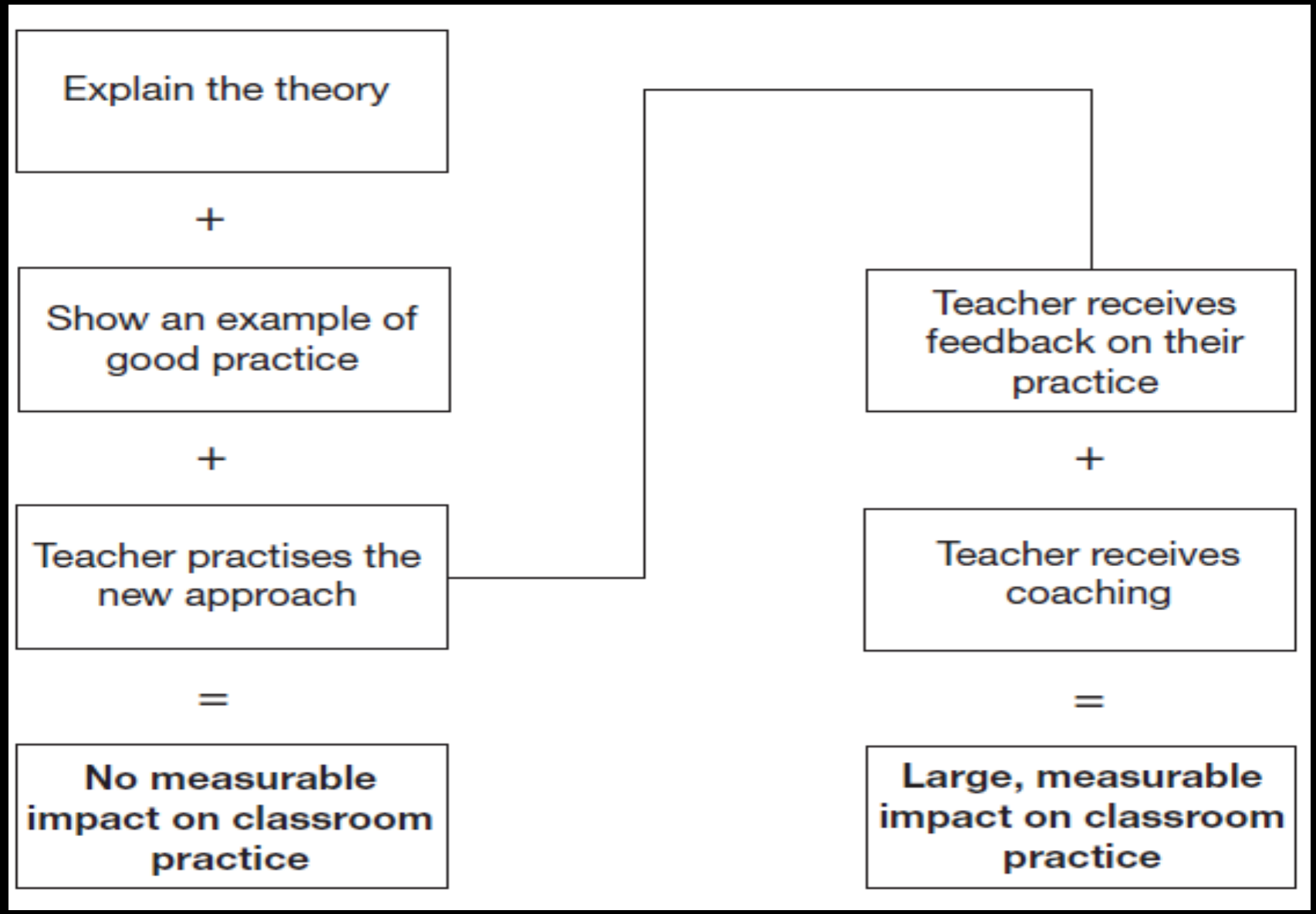

Teachers
Home
Peers
Schools
Principals
Students

- **Some teachers, even though they find the training inspiring, do not try the new approach.**

- **Other teachers will experiment but get dispirited if it doesn’t work well the first time.**

- **People see the disadvantages of a new approach much more clearly than (the disadvantages) of their usual practice, and all but the most intrepid minority soon retreat back into their comfort zone.**

Joyce & Showers / Timperley *et al*



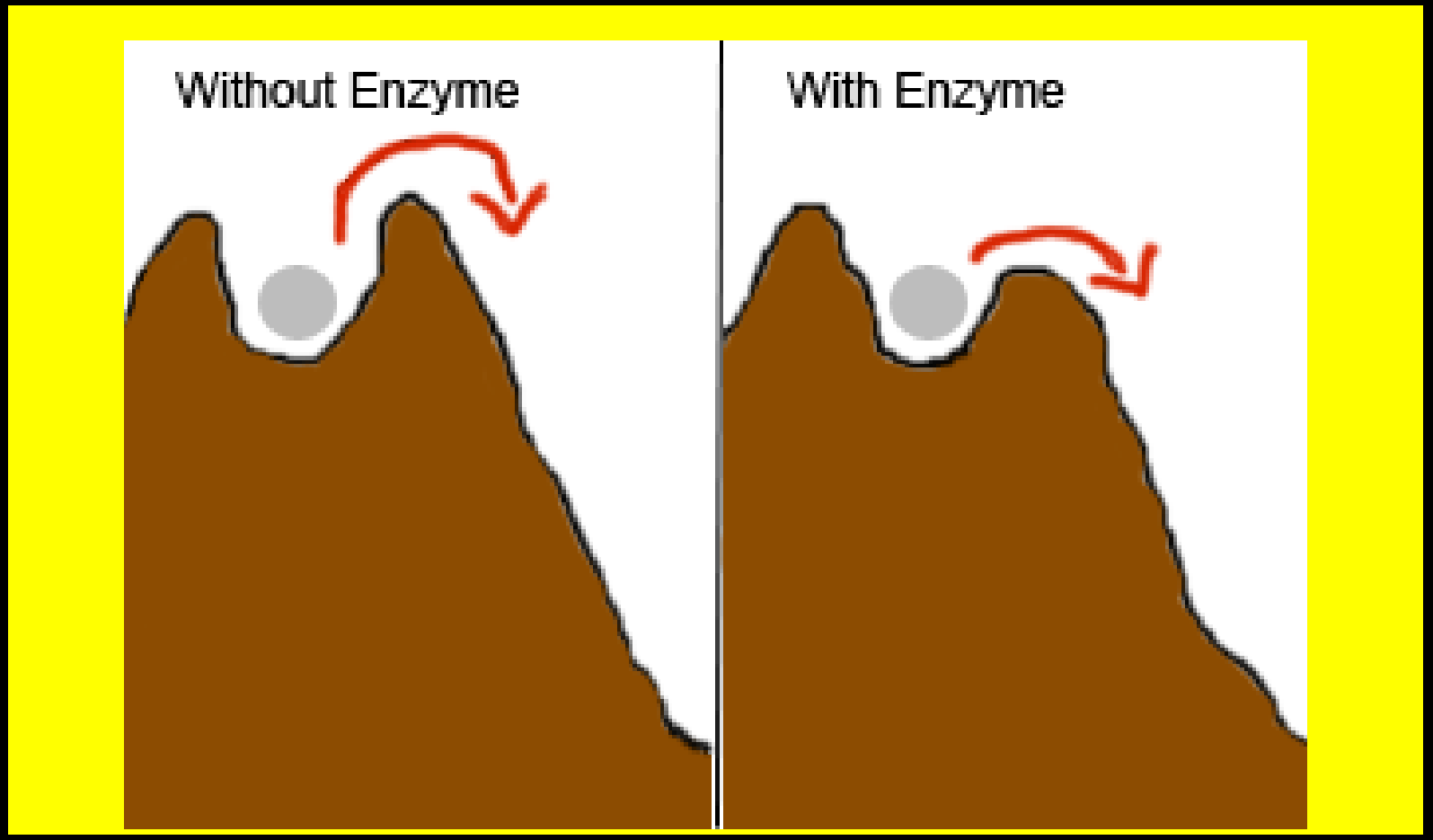
Making it Happen: five steps to improve teaching….

Explore ➡ Experiment ➡ Improve ➡ Share & celebrate ➡ Embed

- Teaching has more effect on achievement than any other factor
- To raise achievement we must change how we teach
- Only teachers can change teaching
- Changing teaching is itself a learning process
- Learning requires support, practice, and feedback
- This is hard, we need to do it together, and learn from each other.

**“If you do what you've always done,
you'll get what you've always gotten.”**

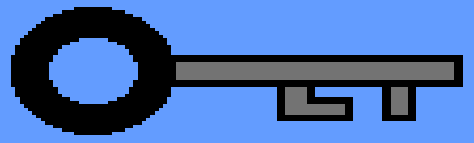
Tony Robbins


Without Enzyme
With Enzyme

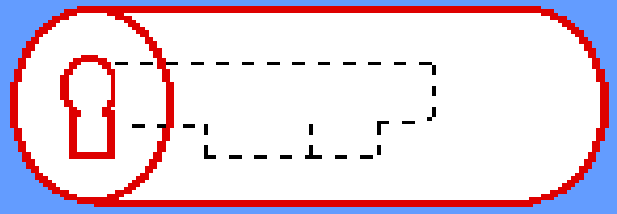
Enzyme

- "A chemical reaction without an enzyme is like a drive over a mountain. The enzyme bores a tunnel through it so that passage is far quicker and takes much less energy."

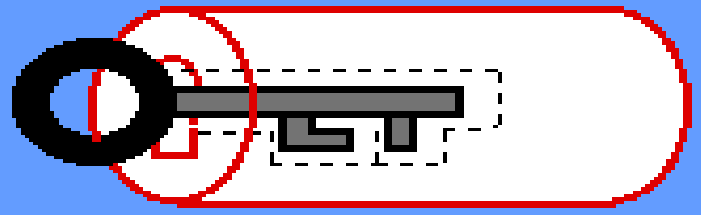
Lock and Key Analogy



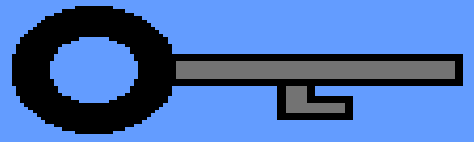
key = substrate



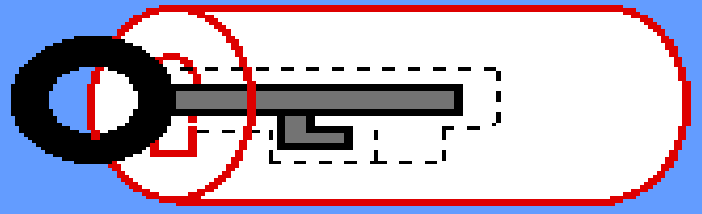
lock = enzyme



correct fit,
will react



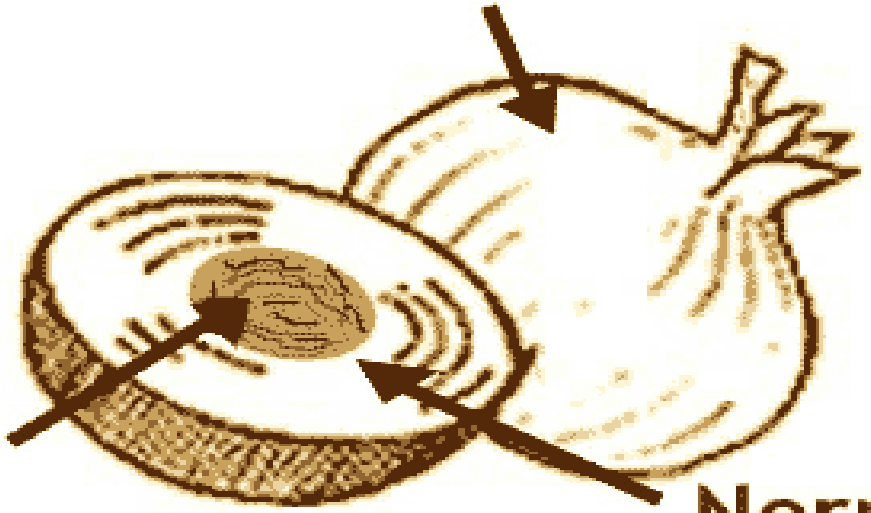
incorrect substrate



no reaction

CULTURE IS LIKE AN ONION– MANY LAYERS

Visual Cultural Differences



Language

Housing

Food

Clothes

Norms and Values

greetings

bow, shake hands

Key Beliefs

Not so visible but has an effect on determing behaviour at a more superficial level

Analogy: Cell and Office