



THE UNIVERSITY  
*of* EDINBURGH

# Large Group Teaching



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Clinical Educator Programme tutor

# Learning objectives

By the end of this session you should be able to:

1. Identify the factors that help enhance learning when lecturing to a large group
2. Explain the importance of 'connection', interactivity and repetition when giving a lecture
3. Consider how you might enhance the design of your lectures or presentations to optimise student learning

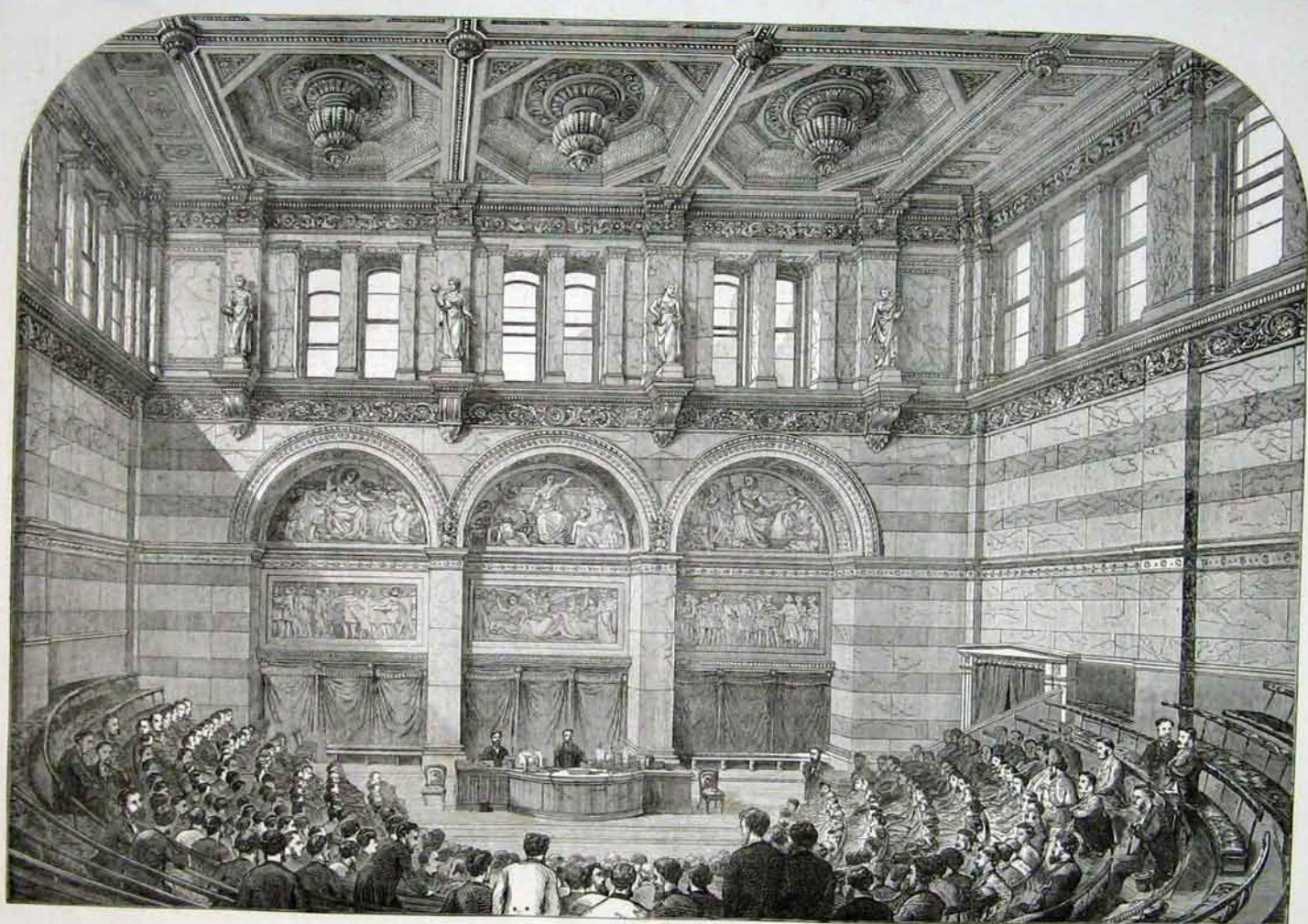
# Overview

Looking at what neuroscience and psychology tell us about how we process information

Considering how we can make practical use of this knowledge

Having a go at making our presentations better

# That was then...



THE LECTURE THEATRE, LONDON UNIVERSITY, BURLINGTON GARDENS.



This is now...



Why lecture when there  
are good libraries?

# Over to you...

In Pairs

Think of a lecture or presentation you have attended that was really good, or not so good.

What did you like, and not like, and why?

You have **2 minutes**.





Please focus on the next 7 slides

# Enhancing Learning in Lectures

Focus attention

Make encoding durable

Make representations easy to retrieve

Tap into emotion (carefully)

# Attention



Attention key to  
new learning

Sustained attention  
averages 20 minutes

Best if not divided

# Encoding

Needs prior knowledge

Helped by elaboration eg stories

Promoted by learners 'generating' material

Optimised by 'spacing' presented material

# Retrieval

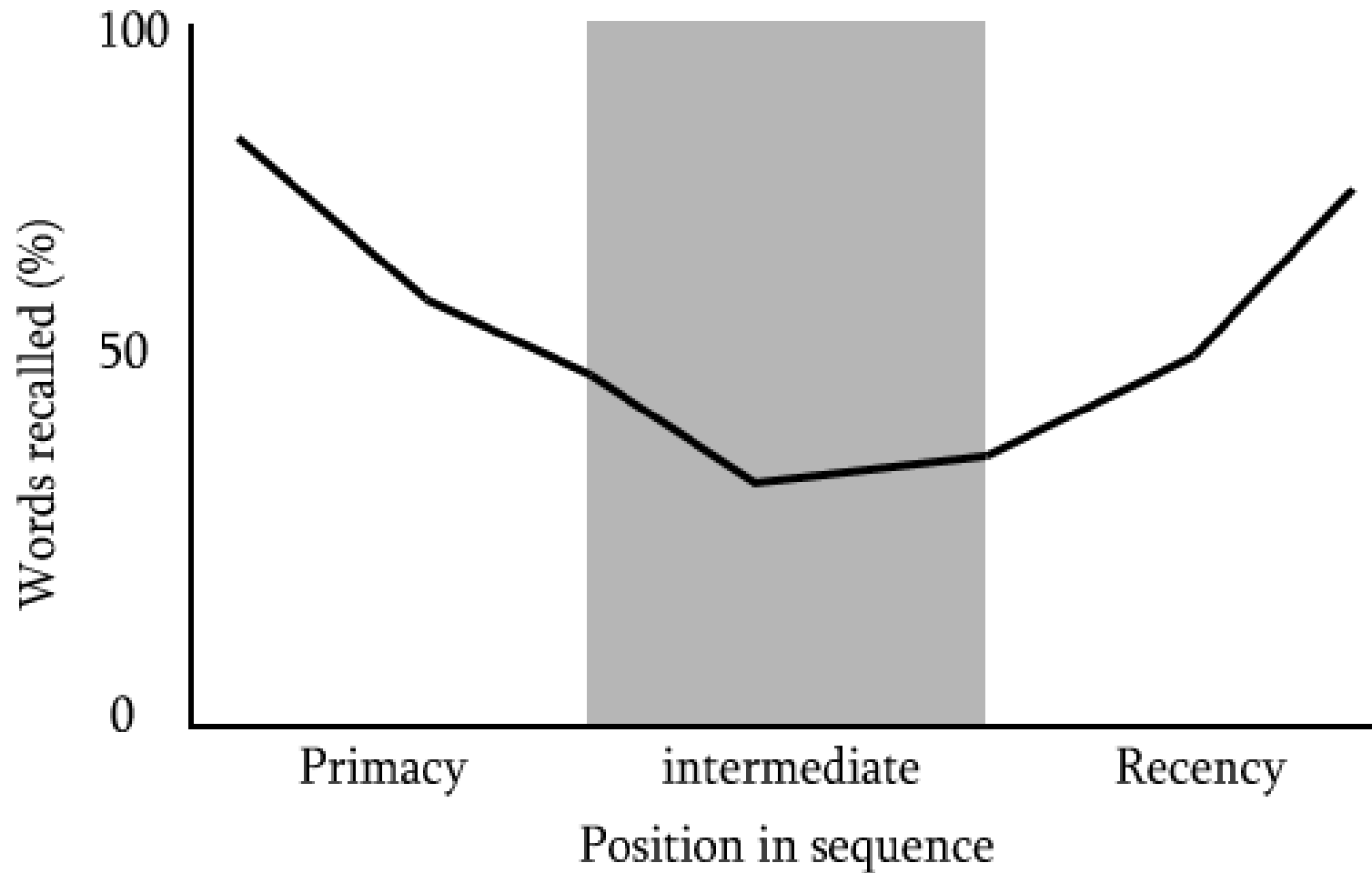
Information presented first and last is recalled best

Variable encoding enhances retrieval

Retrieval practice aids later recall and increases explicit awareness of knowledge



# Serial position effect



# Emotion

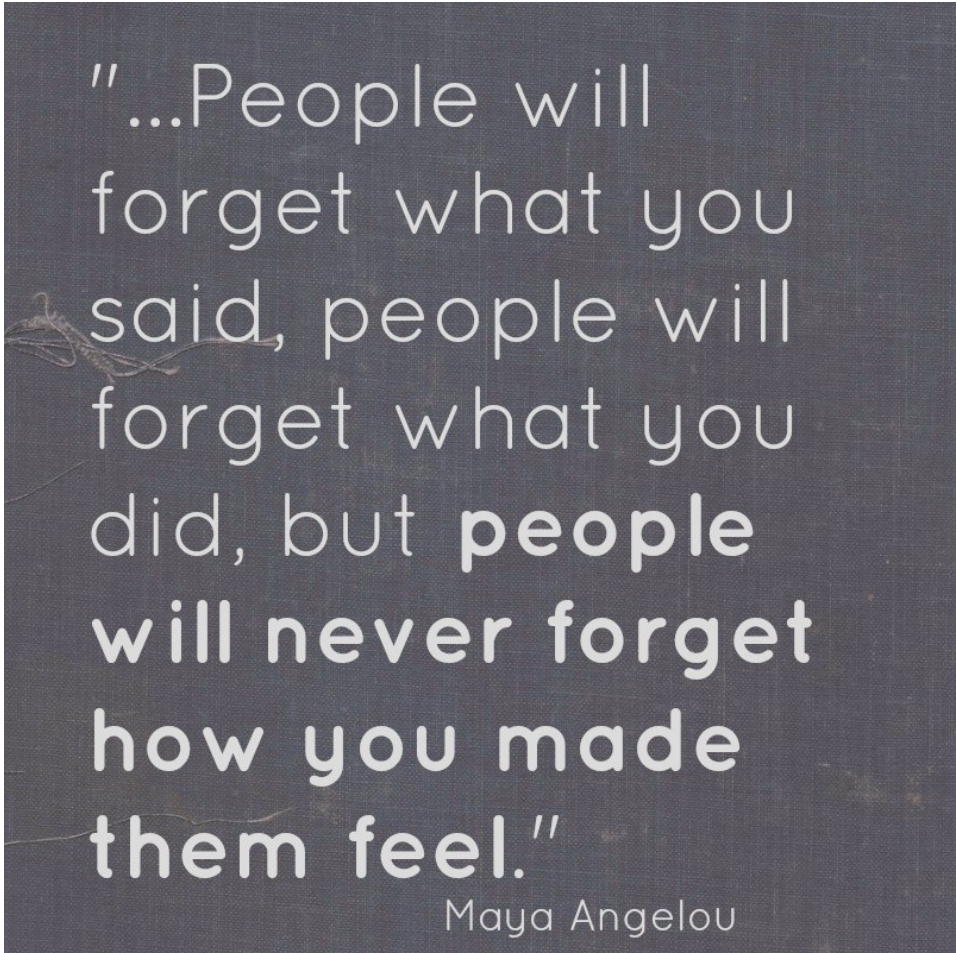
Complex impact upon all mental processes

Can powerfully enhance memory but not always

Intermediate level of arousal best

Verbal and non-verbal congruence important

# Emotional Connection



"...People will  
forget what you  
said, people will  
forget what you  
did, but **people**  
**will never forget**  
**how you made**  
**them feel."**

Maya Angelou

# Stop and write...

Individually:

Write down the key points you remember about 'enhancing learning'

You have **1 minute**

So what strategies can  
make the most of all this?



# Structure and signposts





The first and last five minutes form the two 'Golden Windows' ...

... so use them well

# Variety and simplicity

Change stimulus every 10 - 15 minutes

Use simple text and imagery

Vary your voice and pace

# Pause and Repeat



Pause for a few minutes 2-3 times during the hour

Repeat key points to reinforce and exploit 'spacing effect'

# Emotional Connection

Narrative style can  
work very well



Consider using your  
own **personal**  
**experience** or theirs



# Interaction

People generally remember...

20% of what they see

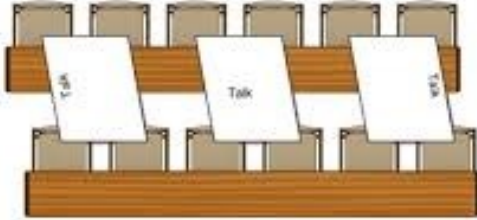
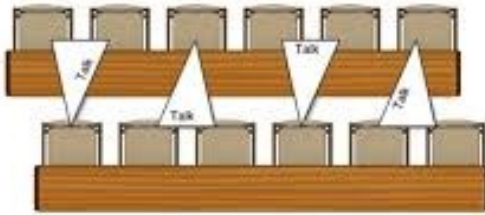
30% of what they see and hear

50% of what they discuss

75% of what they practice



# Methods to try



- Quiz or vote
- Buzz group
- Brainstorm
- 'Modified outline'

ideas  
thoughts

eureka

opinions

brainstorm

experiences

Leave them with a message

Presentations should have a planned ending



Summarise main points

Recap key questions  
posed /answered

‘Give home message’

# Stop and write...

Individually:

Write down all the strategies that you remember from the last few slides.

You have **1 minute**

Let's recap now  
... but from another perspective



# 7Es

- **Expertise**
- **Enthusiasm**
- **Explanations**
- **Examples**
- **Emphasis**
- **Entertainment**
- **Empathy**

And finally, a few things about  
PowerPoint

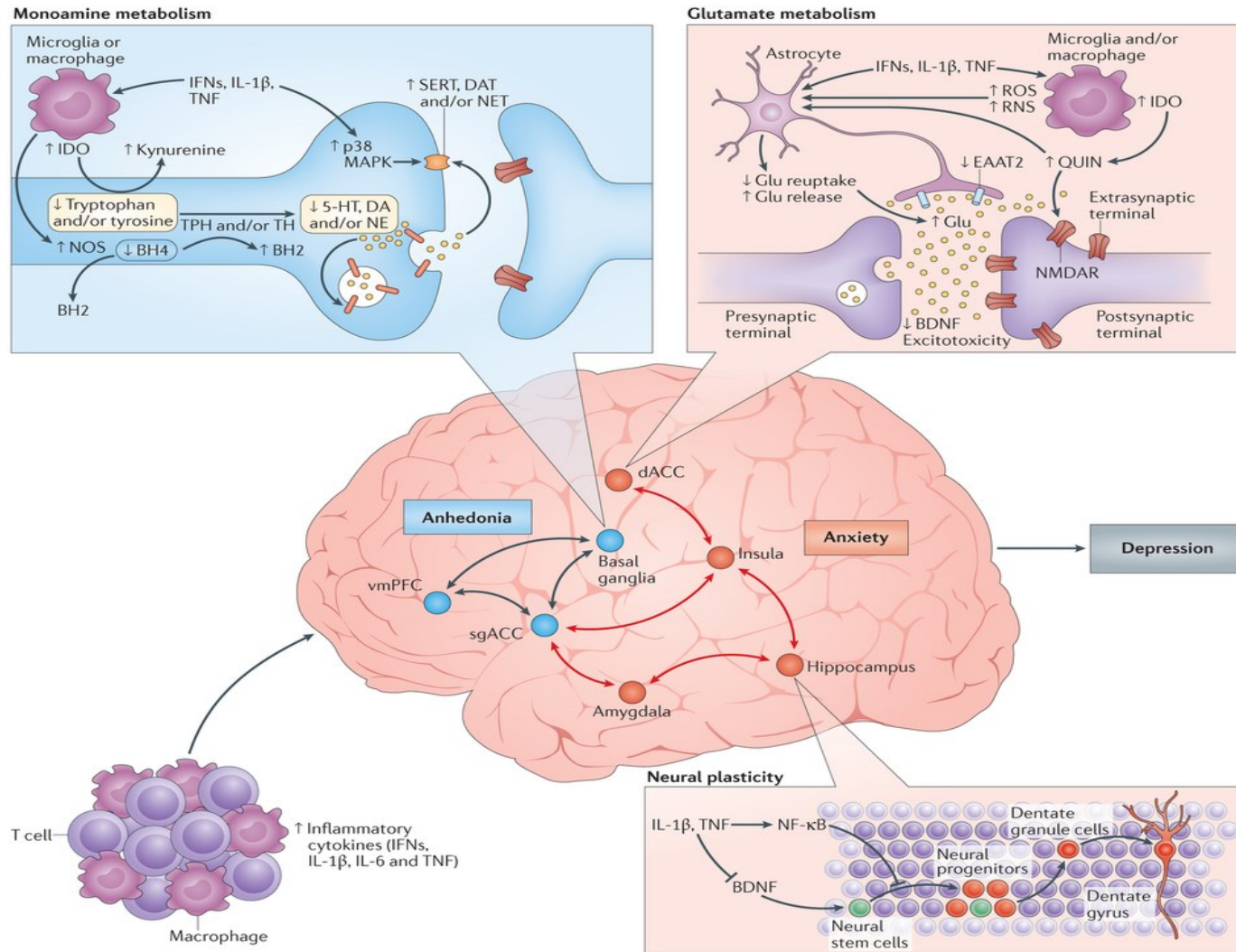
# PowerPoint ... friend or foe?

**Welcome to PowerPoint**

**Be prepared to be:**

- Informed
- Entertained
- Bored
- Embarrassed
- Depressed
- Amazed
- Dazzled
- Confused
- *All of the above?*

# Pictures: simplify or as handout



# Text size: 5–7 lines maximum

Neurotransmitter	Description and function	Notes
Acetylcholine (ACh)	A common neurotransmitter used in the spinal cord and motor neurons to stimulate muscle contractions. It's also used in the brain to regulate memory, sleeping, and dreaming.	Alzheimer's disease is associated with an undersupply of acetylcholine. Nicotine is an agonist that acts like acetylcholine.
Dopamine	Involved in movement, motivation, and emotion, Dopamine produces feelings of pleasure when released by the brain's reward system, and it's also involved in learning.	Schizophrenia is linked to increases in dopamine, whereas Parkinson's disease is linked to reductions in dopamine (and dopamine agonists may be used to treat it).
Endorphins	Released in response to behaviors such as vigorous exercise, orgasm, and eating spicy foods.	Endorphins are natural pain relievers. They are related to the compounds found in drugs such as opium, morphine, and heroin. The release of endorphins creates the runner's high that is experienced after intense physical exertion.
GABA (gamma-aminobutyric acid)	The major inhibitory neurotransmitter in the brain.	A lack of GABA can lead to involuntary motor actions, including tremors and seizures. Alcohol stimulates the release of GABA, which inhibits the nervous system and makes us feel drunk. Low levels of GABA can produce anxiety, and GABA agonists (tranquilizers) are used to reduce anxiety.
Glutamate	The most common neurotransmitter, it's released in more than 90% of the brain's synapses. Glutamate is found in the food additive MSG (monosodium glutamate).	Excess glutamate can cause overstimulation, migraines and seizures.
Serotonin	Involved in many functions, including mood, appetite, sleep, and aggression.	Low levels of serotonin are associated with depression, and some drugs designed to treat depression (known as selective serotonin reuptake inhibitors, or SSRIs) serve to prevent their reuptake.

Text colour: what do you think?

Black on white is clear

Blue works quite well

Yellow is invisible

Red is quite painful

Green is pleasant but soft

Background: can help emphasise

Yellow on blue is clear

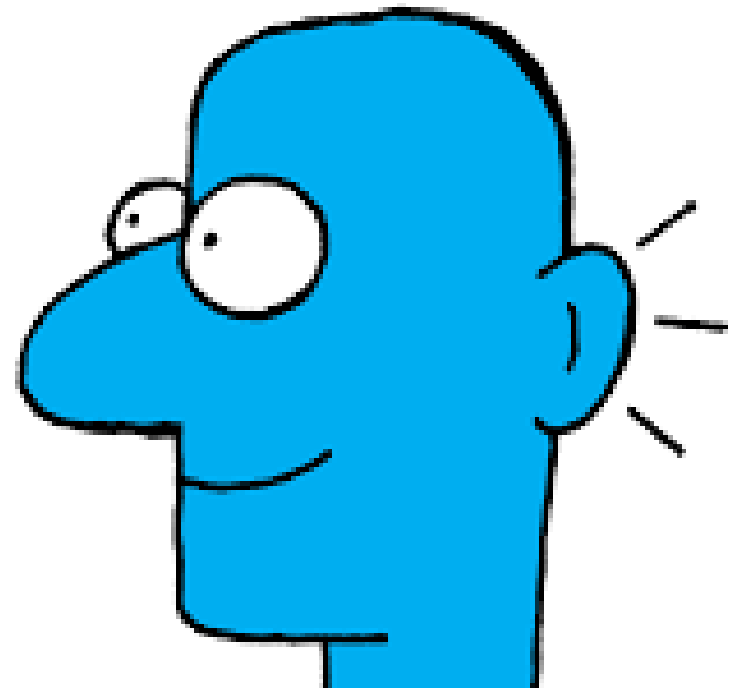
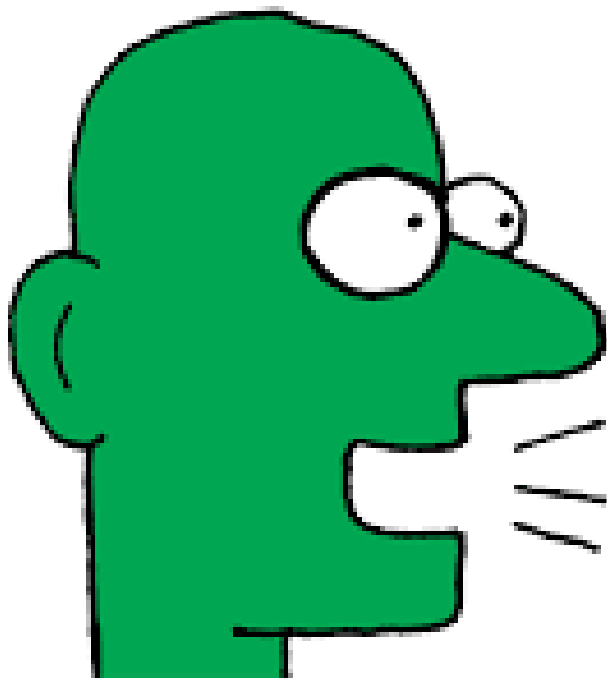
White on blue works too

Red is still painful

Green is less clear

Black is almost invisible

Over to you ...





# PowerPoint palettes: avoid

## Type 2 Diabetes Mellitus

- In type 2 DM (previously called adult-onset or non-insulin-dependent), insulin secretion is inadequate
- The disease generally develops in adults and becomes more common with age.
- Plasma glucose levels reach higher levels after eating in older than in younger adults, especially after high carbohydrate loads, and take longer to return to normal, in part because of increased accumulation of visceral and abdominal fat and decreased muscle mass.
- Type 2 DM is becoming increasingly common in children as childhood obesity has become epidemic: 40 to 50% of new-onset DM in children is now type 2

# Britain's favourite dish

Chinese stir-fry has now replaced chicken tikka masala as Britain's favourite dish, a new survey revealed today.

The simplistic Cantonese dish, typically full of fresh vegetables and noodles, is now the most frequently cooked meal in the UK.

One in five Brits now have it at least once a week, with over two-thirds saying a large part of its appeal is that it's far easier to prepare than traditional British cuisine, with the average stir-fry only taking a few minutes to throw together and cook in a wok.

# Britain's favourite dish



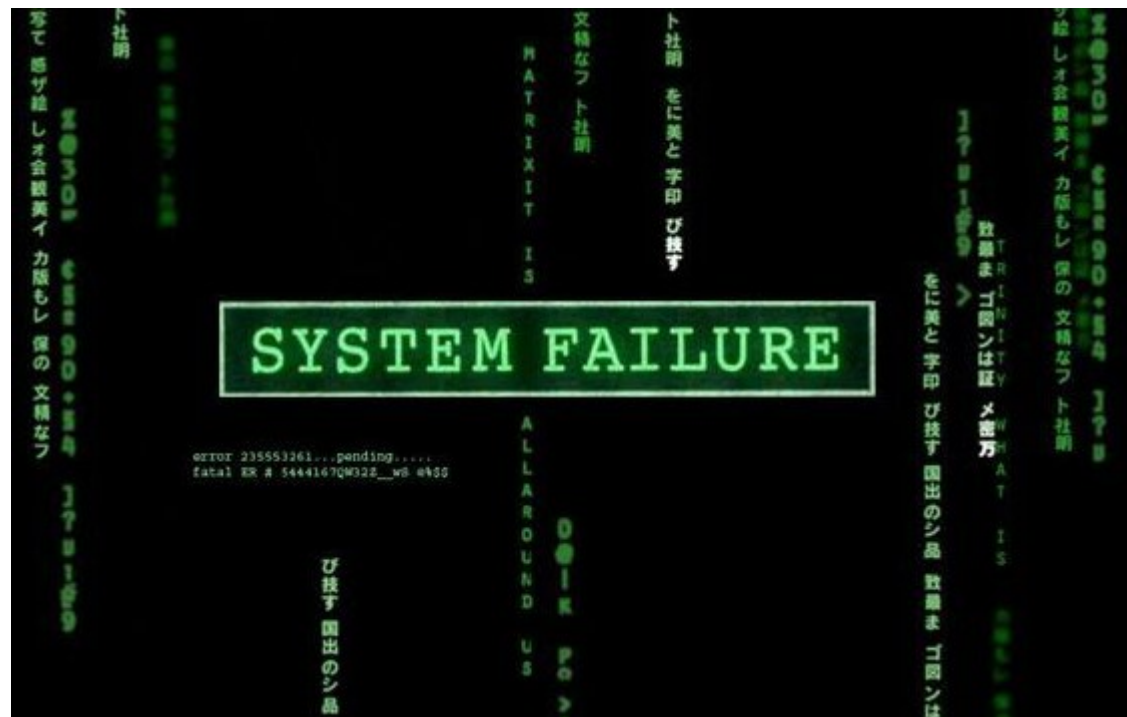
Chinese stir-fry has now replaced chicken tikka masala as Britain's favourite dish, a new survey revealed today.

**1 in 5.....**



Just because you CAN do it in PowerPoint  
doesn't mean that you SHOULD

# What would you do if the technology failed?



# And finally ...

Some tips on Powerpoint from Andy Bounds:  
'The Snowball Effect way to enjoy presentations'

<https://www.youtube.com/watch?v=WPcZ1N8QR4M>

# Over to you...

Individually:

Based on what you have learned, think about how you might improve your lecture. Could it be more interactive? Would you change your slides?

In pairs:

Share your ideas and make any changes you wish.

You have **30 minutes**

# 'Give home' messages

Focus on beginning and ending

Try to 'connect'

Include interaction

Ensure key points obvious

Make slides simple

Stop and recap often



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# You might also like...

Clinical Educator Programme  
“Planning and Evaluating  
Your Teaching”

Clinical Educator Programme  
“Small Group Teaching”



# References

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Le Hunte, B. and Golembiewski, J. A. (2014). Stories have the power to save us: a neurological framework for the imperative to tell stories. **Arts and Social Sciences Journal**. 5 (2), 73-76.

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# Large Group Teaching



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