Araştırma Yöntemleri ve Bilimsel Etik

Yrd. Doç. Dr. Z. Cihan TAYŞİ

1

Outline

- Before you start
- Structure
- Visual Aids
- More on Before you start

2

Before You Start

- Who are your audience and what do they know ?
- What equipment will you have ?
  - Powerpoint, Overhead projector, flip chart …
- Where is the talk ?
- How many people ?
- How long do you have ?
  - Conferences usually give you 15 minutes to talk, and 5 minutes for questions

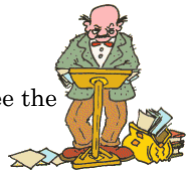
3

Before You Start

- **Dress smartly**
  - Don't let your appearance distract from what you are saying
- **Smile**
  - Don't hunch up and shuffle your feet. Have an upright posture. Try to appear confident and enthusiastic
- **Say hello and smile when you greet the audience**
- **Speak clearly**
  - firmly and confidently as this makes you sound in control. ***Don't speak too quickly***: you are likely to speed up and raise the pitch of your voice when nervous.
  - Give the audience time to absorb each point. Don't talk in a monotone the whole time.
  - Lift your head up and address your words to someone near the back of audience. If you think people at the back can't hear, ask them

4

Before You Start



- **Stand to one side** of the projector/flip chart, so the audience can see the material
- **Face and speak to your audience, not the screen.**
  - Inexperienced PowerPoint presenters have their backs to the audience most of the time!
- **Don't use too many slides**
- **Don't try to write too much**
  - Use note form and bullets rather than full sentences.
  - It is very hard for a member of the audience to read slides and listen simultaneously

5

Introduction

- **Welcome the audience.**
- **Say what your presentation will be about**
  - the aims and objectives.
  - Rationale and justification for study
- **The introduction should catch the attention.**
  - Perhaps a provocative statement or a humorous anecdote:
  - "Genetically-modified crops could save millions of people from starvation"

6

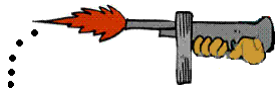
Sidetrack: A word about patents

- If you describe your '**invention**' to the public **before you have registered the patent**, it is considered public information, and therefore **will not be patented**!

7

Materials and Methods

- Show that your methods are supported by the literature and scientific principles
- Logical, step-by-step process for carrying out the experiment and collecting data
- Explain why you chose your experimental design and statistical analyses
- **Don't try to say pack too much content in** or you will talk non- stop trying to get all your content and the audience will switch off with information overload long before the end.
- Use graphics or anecdotes to add variety



8

Results and Discussion

- Briefly **summarise** your main points.
- Relate results to objectives
- Limit the number of data points and present them clearly
- Discuss points relating to
  - other research
  - practical or
  - scientific applications

9

Conclusions

- Reiterate the main points you want the audience to remember
- Show a list of conclusions and relate them back to your objectives
- **Answer any questions**.
- **Thank the audience** for listening. Look at the audience again, **smile** and slow down.
- **The end should be on a strong or positive note** – not tailing away to "..well that's all I've got to say so thank you very much for listening ladies and gentlemen".

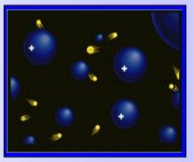
10

Visual Aids

- Professional
- Easy to read
- Not distracting
  - resist the temptation to include excessive moving images/noises etc

plasma the **fourth** state of matter

- As a gas gets increasingly hot, the bonds holding the gas molecule together eventually break
- The resulting substance contains charged particles – ions and electrons – but is overall neutral.
- This is a **plasma**.
- Because the particles are **charged** they respond to **electric fields**; because they are **charged** and **moving** they respond to **magnetic fields**



- $F = ma = q\,(E + v \times B)$
- It is in a plasma that fusion occurs – heat up deuterium/tritium gas sufficiently that the deuterons & tritons are moving so fast that they overcome their electrical repulsion.

11

Visual Aids

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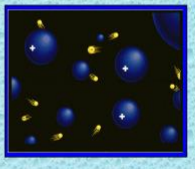

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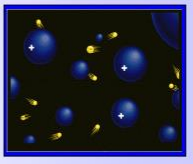

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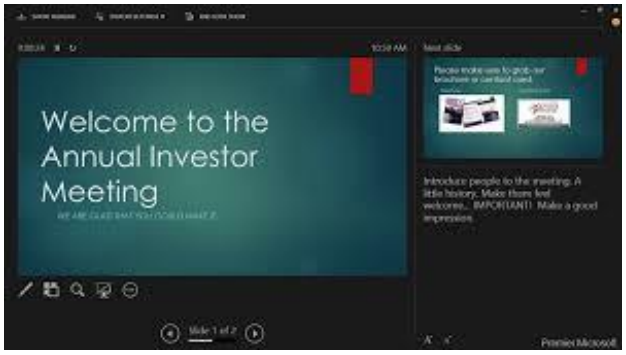
12

Keeping Track

- **Rely on PowerPoint screen ?**
- Notes on paper ?
- Cards ?
- Memory ?
- Script ?



13

Practise

- 3 times by **yourself**
- 2 times in front of **friends/colleagues**
- **1 more time than you think you need to**

14

Timing

- Allow ~1 minute per slide
- Time your rehearsals
- **REMEMBER**
  - no-one is so important that they should overrun

15

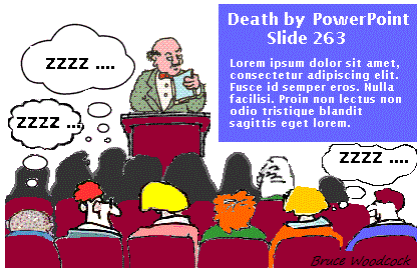
Non-native speakers of English

- Rehearse often, with a native speaker listening
- Record your presentation and listen for areas for improvement
- Structure your slides so that they can be understood **even if your words are not**
  - more images/diagrams

16

Body Language

- Face the audience
- Eye contact
- Look out for annoying mannerisms
- Dress appropriately
- Stand up straight
- Lift the head
- Project your voice



17

During the speech

- Volume
- Speed
- Articulation
- Eye contact
- Ends of sentences audible
- Monotony!

18

Nerves

- Intangible nervousness
  - accept the nerves and deal with the symptoms
- Tangible nerves
  - work hard to reduce the causes - preparation

19

Nerves

- Dry mouth – water
- Shaky hands – avoid laser pointer/papers
- Shallow breathing – take deep breaths
- Tense muscles – tighten and release
- **With practise, nerves make a better performance**

20

References

- https://www.kent.ac.uk/careers/presentationskills.htm
- Hilary M Jones, Scientific Conference Presentations