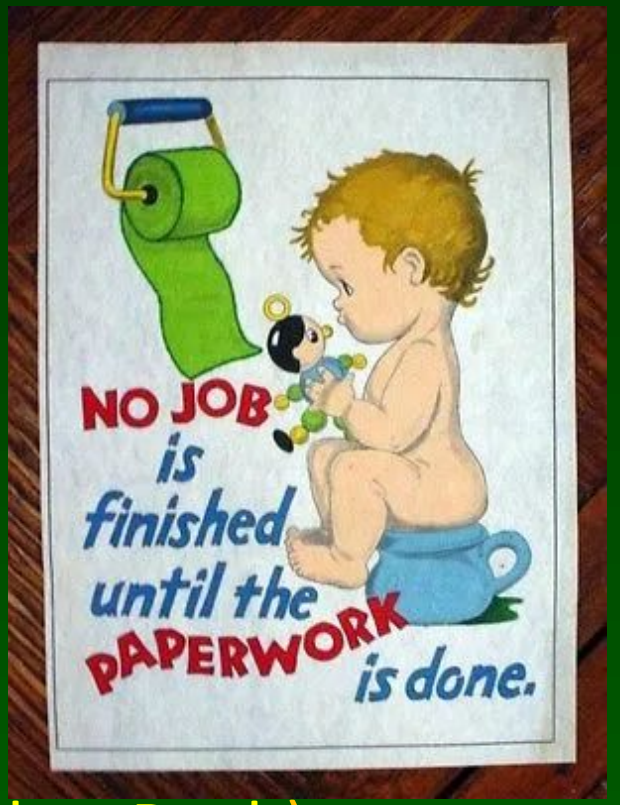
The art of communication and popularization of science

How to give interesting talks
and prepare good popular presentations.

Doctoral School of Exact and Natural Sciences, Nicolaus Copernicus Uni.



Włodzisław Duch (Google: Wlodzislaw Duch)

Dept. of Informatics, Faculty of Physics, Astronomy & Informatics, Neurocognitive Laboratory, Center for Modern Interdisciplinary Technologies, Nicolaus Copernicus University

Practical info

- Name: The art of communication and popularization of science.
- Organization: Doctoral School of Exact and Natural Sciences,
  Nicolaus Copernicus University.
- Time and place: ?? Wednesday, 12:00-13:30, COK-S1, Grudziądzka 5.
- First meeting: ??.01.2023, then 4 more times.
- Form: 10 hours, tutorial type lectures + recommendation of open courses, web sites + discussion of your presentations.
- Evaluation: your presentations of short popular talk or poster.

- Lecturer info:
  Włodzisław Duch, search Google: Wlodzislaw Duch for many talks on AI, lecture notes, papers, Flipboard news on science, AI, brain hacking, evolution, education etc. and some photo/music.

What is it about

Goals:

- to help you make better presentations,
- analyze good and bad examples of presentations,
- find interesting tools,
- learn from the errors of others (as well as your own).

Organization of this tutorial.

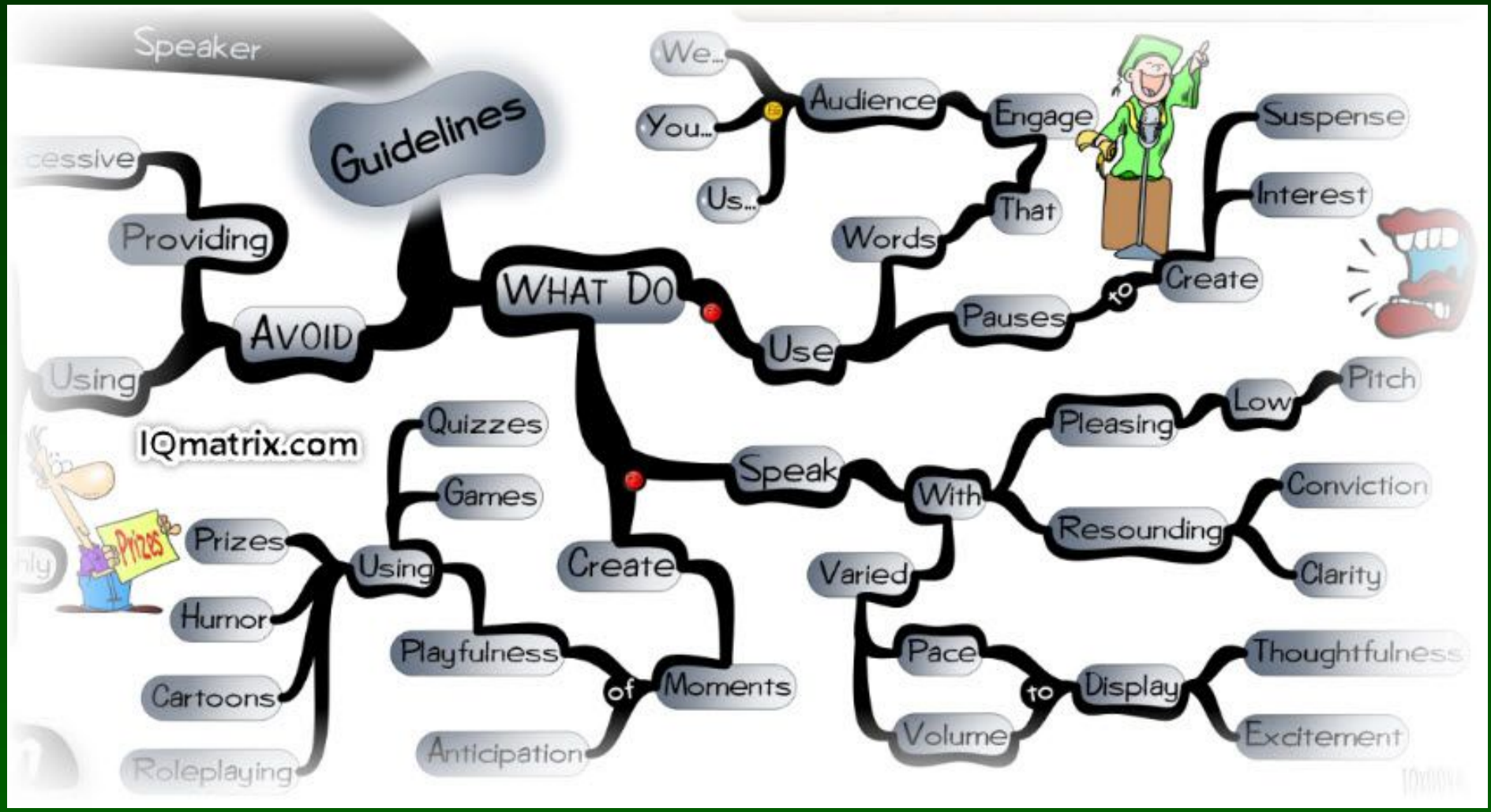
1. General intro.
2. Pointers to relevant sources of information. Mostly homework, following the links provided here and whatever you will find yourself.
3. What makes good/bad scientific presentation: main points.
4. Evaluation/discussion of best presentations/posters you can find.
5. Your short presentations that we all will discuss and assess.

1) Who has made poster presentation?
2) Who gave oral conference presentation?
3) Who gave popular presentation?

Literature

- Science Communication Events in Europe: EUSEA White Book
- Scientific presentations, a cheat sheet: Naturejobs Blog advices
- A David Letterman-like countdown to the 10 biggest pitfalls in scientific presentations, from Naturejobs Blog
- How to give a dynamic scientific presentation: Elsevier Connect advice
- Tips for giving a successful scientific presentation: Cell Mentor advice
- The Art of Science Communication Summer course, ASMB, STEM
- The science of visual data communication, Franconeri et al. 2021
- S. Kosslyn, Better PP quick fixes, and PowerPoint presentation flaws and failures.
- Look for more in the Internet! Lectures, discussions, https://www.canva.com/learn/best-infographics/best infographics, presentations of posters and short oral talks on popular and scientific subjects.
  Some interesting articles/videos, like advice of Patrick Winston, late MIT professor, are linked to my Filpboard-Education.

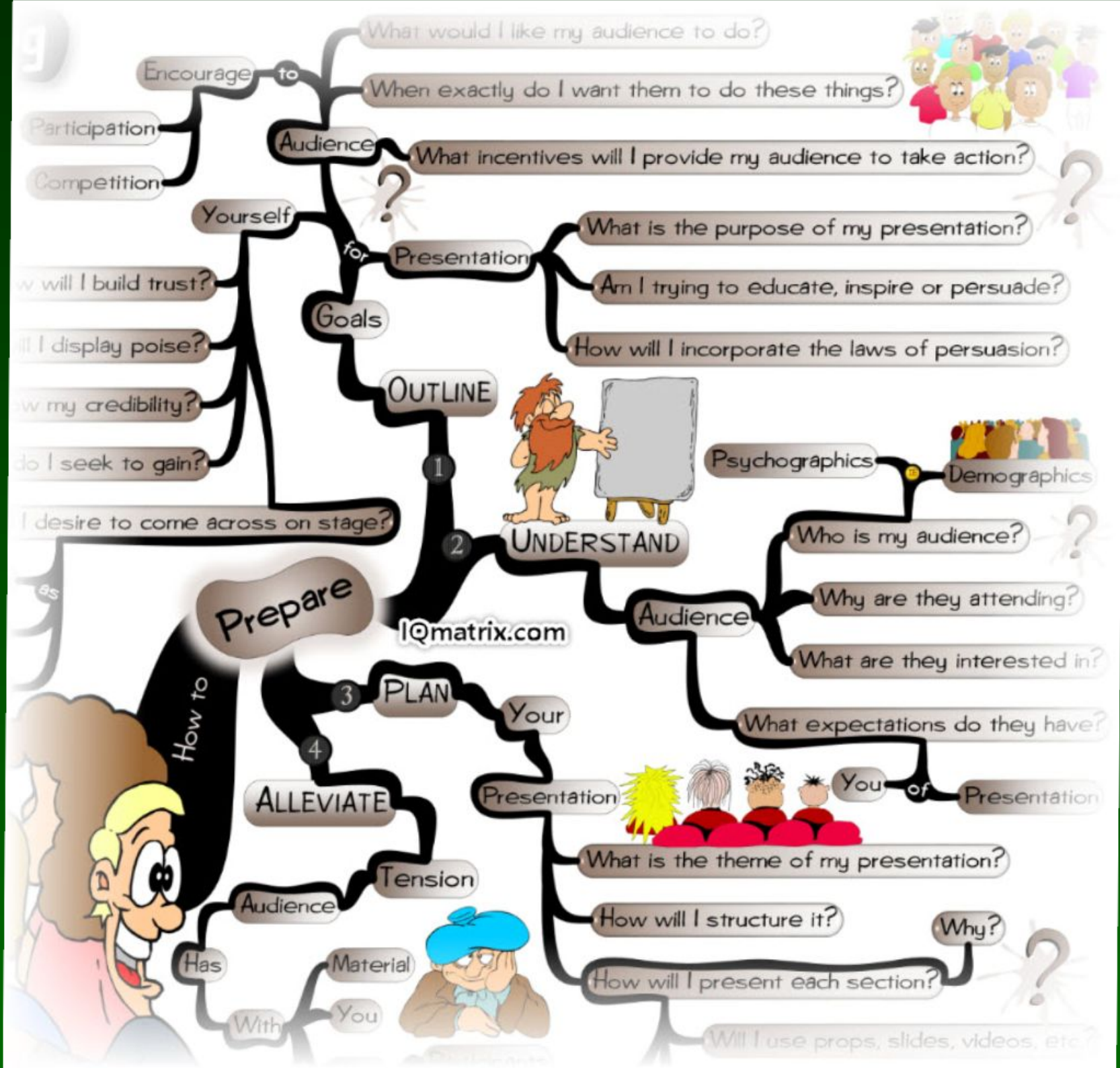
Mindmaps: what to do

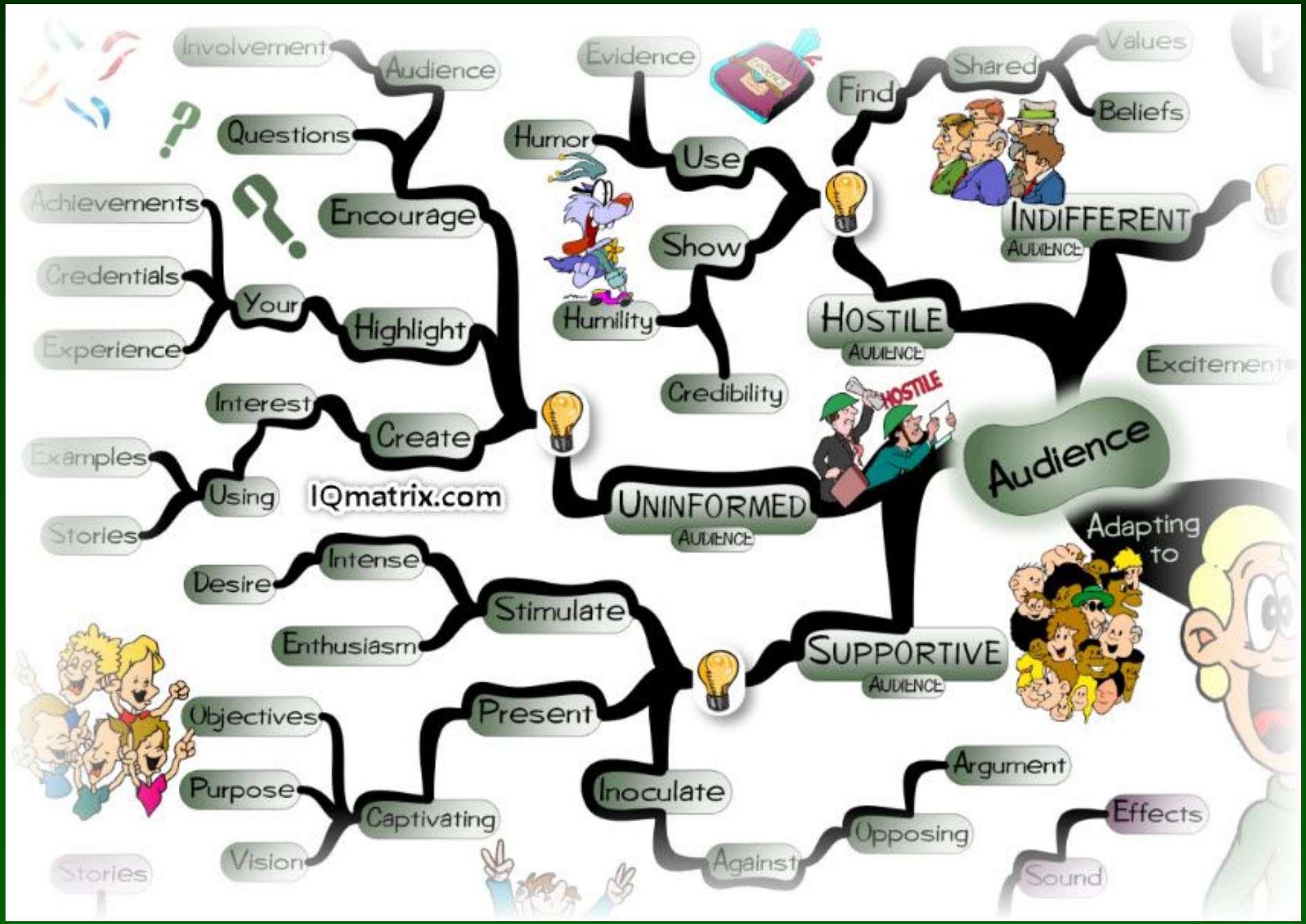


Adam Siciński: https://blog.iqmatrix.com/public-speaking

Adam Siciński

Mindmaps: preparation of good talk.





Mindmaps: various types of audience. Adam Siciński.

Seminar BINGO!

To play, simply print out this bingo sheet and attend a departmental seminar.

Mark over each square that occurs throughout the course of the lecture.

The first one to form a straight line (or all four corners) must yell out to win!

SEMINAR BINGO

Speaker bashes previous work	Repeated use of "um…"	Speaker sucks up to host professor	Host Professor falls asleep	Speaker wastes 5 minutes explaining outline
Laptop malfunction	Work ties in to Cancer/HIV or War on Terror	"…et al."	You're the only one in your lab that bothered to show up	Blatant typo
Entire slide filled with equations	"The data *clearly* shows…"	FREE Speaker runs out of time	Use of Powerpoint template with blue background	References Advisor (past or present)
There's a Grad Student wearing same clothes as yesterday	Bitter Post-doc asks question	"That's an interesting question"	"Beyond the scope of this work"	Master's student bobs head fighting sleep
Speaker forgets to thank collaborators	Cell phone goes off	You've no idea what's going on	"Future work will…"	Results conveniently show improvement

JORGE CHAM © 2007

Management Lesson

Never start a project unless all resources are available

Presentation tools

- Apple Keynote for iOS.
- MS Powerpoint, many independent templates/apps.
- Google Slides
- LibreOffice Impress, similar to Powerpoint, almost perfect MS integration
- Prezi Present, Video, Design: 350 mln presentaitons.
  Example: Understanding the Teenage Brain.
  Example: Brain Bounce. My presentation:
  Most interesting developments in neuroscience.
- Beautiful AI business oriented slide design (with confabulating AI).
- Slidebean AI-powered online all-purpose presentation tools, pitch decks.
- Infograpify, for nice infographics, example: decision trees.
- Visme, Create anything, Presentations, Documents, Videos, Data graphs.
- Popular LetPub Webinars including PP presentations.

AI Tools

In 2023 many AI tools for writing, graphics and presentations appeared.

- Futurepedia, largest list of AI tools, has presentation tools.
- AI Tool Master ListTome, storytelling and slide creation.
- Chatbase: Create your Chatbot GPT
- Canva presentations and posters.
- Play.ht: text to voice generator.
- Summarizers | Consensus tool | Elicit tool | You.com GPT |
- Microsoft Designer
- AI research tools Uizard: AI designs. Slidebean MagicSlides GPT
- Beautiful.ai, slide generator; SlidesAI for Google slides/PPT
- Obsidian writing tool

Top 10 tips

From Ramona J. Smith, Toastmasters 2018 World Champion of Public Speaking

1 Be yourself: people relate to and connect with authenticity.

2 Prepare, practice and perfect: get rid of ‘ums’ and ‘you know’.

3 Describe what you’re telling us: use vivid words to help paint a picture.

4 Vocal variety: change up tone, volume, pitch to keep the audience engaged.

5 Study the greats: watch what really great speakers do.

6 Get feedback: a practice audience can help you get the bugs out.

7 Appearance: if you look good, you’ll feel good, which will help you give a great speech.

8 Pauses: they give the audience time to think, and help them engage.

9 Body language: use gestures and make use of the space to help deliver your message.

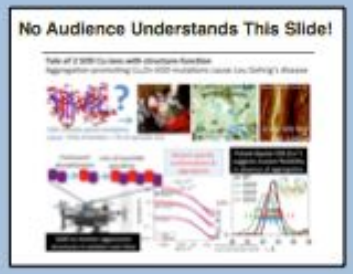
10 Be confident: use your face, body language and stance to own the stage.

No Bad Slides.com

Scientific Presentations for All Audiences
Group courses, lectures, individual tutoring

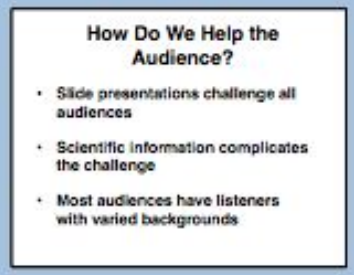
The problem

Incomprehensible individual slides and and no compelling overall narrative



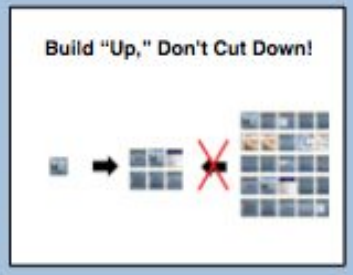
The question

How can the audience overcome the inherent challenges in understanding a presentation?



The solution

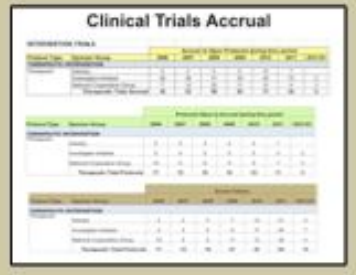
Figure out the one minute (or one slide) version of and add detail and evidence given the available time and audience capability



The presenter must deal with…

and

…and convert hopeless slides into effective visuals



Blue column: summarize the problem statement, the overarching question, and the overarching solution.
Gray bar: details about the challenges.

10 biggest pitfalls

1) Rushing through all your slides, no matter what
2) Not leaving time for discussion
3) Not doing dry runs
4) Not understanding what can (and can't) be achieved
5) Using journal article graphics
6) Trying to surprise the audience
7) Failing to develop insightful visualizations
8) Not understanding how hard it is to gauge your audience
9) Failing to put yourself in the audience's shoes
10) And the #1 mistake is: thinking a collection of slides is enough.

See David Rubenson and his NoBadSlides project.

Next steps

Please explore my links and read some advice, look at various tools.
Let me know if you find some interesting tools for presentation.

However, as Xunzi (340 - 245 BC), a Confucian scholar wrote:

"What I hear, I forget. What I see, I remember. What I do, I understand."

Second meeting: please find the best presentation/poster that you really like, we will look at that, try to criticize and learn from it.

At each of the 4 following meeting we will have time for about 4 presentations.
You will show us some slides for a talk or a poster, and we will try to find weak and strong points, discuss how to improve it.

This will be the basis to grade it.

Schedule of the presentations: who has some forthcoming presentation?

I may show you now one of my presentation and we will try to criticize it.
List of my presentations. Let's choose one.

Literature in EN/PL

- Kosslyn S/ (2007) Clear and to the Point. 8 Psychological Principles for Compelling PowerPoint Presentations. OUP, 235 p.
- Wasylczyk P. (2020) Prezentacje naukowe. Praktyczny poradnik dla studentów, doktorantów i nie tylko. PWN
- Osica N., Niedzicki W. (2017) Sztuka promocji nauki. Praktyczny poradnik dla naukowców. OPI - PIB, Warszawa.
- Niedzicki W. (2010) Sztuka prezentacji w nauce, biznesie, polityce, Wydawnictwo Poltext.
- Młyniec W., Ufnalska S. (2005) Scientific communication, czyli jak pisać i prezentować prace naukowe, Sorus, Poznań.
- Żabicki P. i Giżycka E. (2013) Promosaurus. Poradnik promocji nauki, UJ Kraków. www.cittru.uj.edu.pl/promosaurus