Basic communicating skills for young Researchers

Genius is 1 percent inspiration, but 99 percent perspiration.
Thomas Alva Edison

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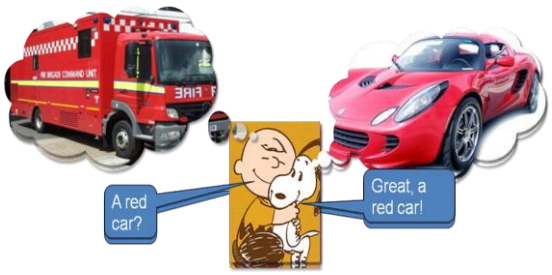
Efficient Communicating

Sender → Message → intended Recipient
Communication is the activity of conveying meaningful information.

Preparation is the key to success. The worst part of a difficult task is often the courage it takes to start. Start early! This will increase the time you have for planning. All efforts start with a small step.

Check your Audience.
With whom are you communicating?
What kind of existing knowledge can you assume?
What does the recipient need to know?
How will the recipient perceive your message?
Is your audience on your side or not?
Is there a potential for miscommunication/misunderstanding due to cultural or language barriers?



Set **SMART goals**:
Specific – **M**easurable – **A**ttainable – **R**elevant - **T**ime Bound

KISS – Keep it Short and Simple.
Figure out WHAT you really want to say and WHY.
Ensure you communicate captivating.
Do not waste your time and that of your reader/listener with irrelevant or trivial information.
Plan what you want to say exactly.
You are responsible that your message is clearly and concise received (like playing with a ball).
Choose words and body language wisely.

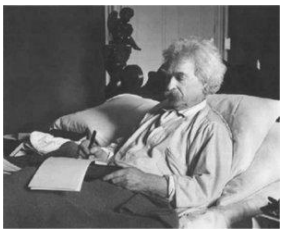
Feedback
How is your message received? Watch facial expressions, gestures, and posture of the person(s) you are communicating with to gain information if you get your message across. Ask questions.
Listen carefully (or read twice if it's an e-mail). Wait until you are able to give a thoughtful answer.

Strategic Thinking
Clarify and organize your thoughts about what is to be achieved.

Critical Success Factors:
Get to the heart of WHAT will be achieved and HOW you will achieve it.
Surround yourself by people with more experience and/or different expertise areas to gain a range of possible perspectives and advices.
Where do you want to be? / What do you want to achieve? / Where are you now? / How can you achieve your objective?

Can-do Attitude
See every failure as a learning opportunity.
If you never fail, you are not trying hard enough.

Go the extra mile
The willingness to deliver more and better with a positive mental attitude is the only true principle of success – make it your North Star.



Had I but more time,
I would have written less.
Mark Twain

Effective Writing

Get started
Put what you have to say in a logical sequence.
Write clear short coherent and persuasive sentences.
Use buzz words. Use active phrases.

Every written piece has a beginning, a middle and an end (Aristotle)
Introduction: General statement & Scope (i.e. you should look at an outcrop first before using a lens)
What – When – Where – Why – How
Bring your main message across at the start: Adopt a viewpoint, present an argument or hypothesis. Each sentence should sharpen your own focus and the general statement about your topic and should contain useful information or perspectives. Orient your audience to your own perspective on the subject.
The last sentence should be your final statement (the "take-home"-message).

Middle:
Make sure you keep observation (e.g. data) and interpretation separate.
Your data should be good for eternity.
Your interpretation may be strongly influenced by current thinking.

Ending (like in chess; the biggest challenge!):
Do not introduce new material in your conclusions!
A conclusion can only conclude from evidence already presented.
Look back over your statement/scope and your evidence paragraphs. What is the wider significance of what you have shown? Try to distil the 'essence' of your work into a short summary.
What is its deeper importance? What do you want every reader to remember?

A generally safe structure for abstracts and mainstream scientific papers is:
(1) What is this all about (the question or problem in general)?
(2) What are you going to do about it (How will you approach it / methodology)?
(3) What has your approach produced (describe data)?
(4) How do you interpret these results?
(5) How does this information help with your question/problem (1)?

Proofreading
Read aloud. Do you convince yourself and get exited about the content?
Double-check structure, form, spelling, grammar and punctuation. Does it flow? If not, it will feel unnatural. If yes, it will feel like a great story.

Consult "Elements of Style"
www.cs.vu.nl/~jms/doc/elos.pdf
Review your style; avoid jargon or slang. Check tone and attitude again and again all the time.

Feedback
Buddy-check comes first! Show to a peer or a junior researcher for commenting. Only after that, show it to your supervisor or superior. Nothing more frustrating than badly written pieces … You don't want to be one of those, do you?

A well written piece published at the right time can change history, it can change the way we think about a topic entirely.

Successful Presenting (Powerpoint)

Present your ideas in an organized and interesting way.
Structure: (1) beginning, (2) middle, (3) end
(1) Set the right expectations. Give a content overview (what is it all about?).
(2) Be goal-oriented, fact-based (data focused), engaging.
(3) Summarize your main points (the big message).

Powerpoint
Use available templates.
Smallest font size is 16. Animations only if they help to explain the content or create an impression.
Use pictures, charts, and diagrams whenever possible.

Performance
Know your material thoroughly. Practice and rehearse your talk. You are really performing like an actor on stage.
Watch documentaries to get inspired!
Prepare: e.g. What is the worst question you can imagine? How would you react?

Style
Look enthusiastic, confident, proud and be yourself. Enthusiasm is about 2/3rd of the secret.
Dress appropriately for the occasion (80% of communication is non-verbal – that includes clothes … consider a medical doctor without the white coat– not quite the same thing, isn't it?)

Nerves
It's not only you … remember, public speaking is the number one anxiety worldwide!
Remain calm. Appear relaxed, even if you feel nervous (use relaxation techniques, e.g. focus on breathing to bring your mind to the present, clap your hands to synchronise your brain, pull on the seat of your chair with one hand to get rid of excessive energy).

Voice
Speak slowly, pronounce clearly, and show emotions relating to your topic.
Speak to the person farthest away from you to ensure your voice is loud enough.
Potential icebreaker: Ask if everybody can hear you. Vary the tone of your voice and dramatize when appropriate.

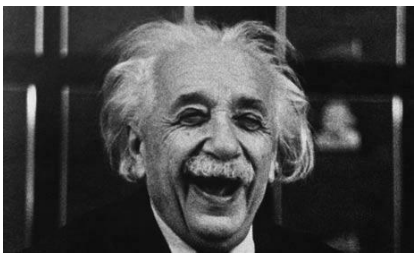
Body language
Standing, walking or moving about with appropriate hand gesture or facial expression is important. If you don't move, the audience will lose interest.
Maintain eye contact with your audience to make them feel involved (3s).

Rapport
Ask your audience rhetorical questions to keep them engaged. Answer them yourself in your conclusions.

Ooops
If you made an error, correct it, and continue. No need to apologize.

Timing
Short of time? Know what you can safely leave out. / Extra time? Know what could be effectively added (e.g. an anecdote, examples, analogies).
Pause. Allow yourself and your audience a little time to reflect and think (especially during the final question session). Terminate your presentation with an interesting remark or an appropriate punch line. Go easy on jokes. They can go wrong. Thank your audience.

Questions
Gain time by saying 'That's a very good question', 'Wow, this might take up an hour...'. If you cannot answer a question, suggest to meet later for a detailed discussion or just admit 'This is as yet unresolved, we are working on it.'



Imagination is more important than knowledge.
Knowledge is limited.
Imagination encircles the world.
Albert Einstein

Project Kick-off

Starting a project is crucial for scientific success and output. Like in chess, if your opening is poor, you will find it hard to fix it later in the game If you are exited about an observation or finding and would like to take it further, ask yourself the following questions:

Target Group:
☐ Is this of general interest or is it just me? Who is exited?
☐ Is the world not exited because they don't know about this, or because it has limited implications altogether?

Impact:
☐ Can it be published and how high can it be sold? Remember, journals with impact factor 3 or higher are the real stepping stones for an academic career.

Practialities:
☐ What will be needed to get there (fieldwork, analysis, modelling, man hours etc.)?
☐ Can samples be provided by a third party?
Remember, fieldwork is time and money intensive. The more groundwork available, the better the basis for more sophisticated approaches!

Competitor Analysis:
☐ Who else is on this topic (search online)?
Check your competitors carefully and see if you can seriously compete or only snap a cherry from their cake. How far can the idea be taken?
☐ Check how many citations papers on this or related topics get. Is the topic received well in the community or not?
Remember, papers below 20 citations after ca. 10 years were usually not worth the research funding. Of course for some exceptional ideas it takes time until they take off … (like plate tectonics).

Funding:
☐ Is there a budget available or do you need to apply for support?
Where can you apply (VR, KVA, FORMAS, KAWS, EC)?
☐ If money is secured, is it sufficient to see the project to the end or will you run out of steam at some point? Remember, half-finished projects are a mental burden, lock up resources and simply show that it wasn't all that important in the first place.
☐ Perform a SWOT-Analysis (Strenghts-Weaknesses-Opportunities-Threads) using all information gathered above.

If all boxes ticked and SWOT does not raise any serious concerns, push ahead.
There is no limit to fame and glory, but neither to oblivion. Move on the right path!

Life belongs to the living, and he who lives must be prepared for change.
Johann Wolfgang von Goethe

Standard Supply for Field Work

Fieldwork is expensive, hard work and potentially dangerous. Make sure you are well equipped and prepared for all eventualities. If you are not, then in the best case is that you loose valuable field time. In the worst case you are missing a vital thing at the worst possible moment.

√	**Equipment**
	Field book
	Pens (regular and colour)
	Permanent markers
	GPS
	Batteries for GPS
	Compass
	Maps
	Hand lens
	Sample bags (rough)
	Sample bags (small samples)
	Tape for samples
	Hammer
	Chisel
	Measuring tape
	Pen knife
	Camera
	First-aid-kit
	Signal vest
	Safety goggles/glasses
	Hard hat (?)
	Gas mask (?)

√	**Clothing and Personal gear**
	Mountain boots
	Rain coat / gear
	Solid long pants for fieldwork
	Backbag (approx. 40 liters)
	T-Shirts/shirts
	Jumpers/Fleece*
	Sun hat
	Wooley hat
	Gloves
	Sunglasses
	Lipbalm
	Painkiller
	Water bottle**
	Emergency high calory food
	Insect repellant

*

Irrespective of cold or warm climate destination, you **must** be prepared for both, hot and cold weather! At 3500 m a.s.l. it is very cold – even on Tenerife.

** You should always have a reserve of clean water with you to wash out potential injuries if need and provide those potentially dehydrated. Water is critical for survival!

Life is not easy for any of us.
But what of that?
We must have perseverance and above all confidence in ourselves.
We must believe that we are gifted for something and that this thing must be attained.
Marie Curie