



**Utrecht
University**

Oral Presentations

Resource modules for MSc students in Earth Sciences
Departments of Earth Science and Physical Geography
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1 Introduction

In this resource module you will find presentation guidelines on how to prepare, present, and reflect on your presentations, as well as improve your body-language. It describes how you prepare for the audiences you may encounter during the master program. There are some tips and tricks to help improve your presentation skills during your study by reflecting on your own performance.

Presenting is an important way of communicating your work to an audience.

There are many different presentation styles to choose from, which are linked to the setting and target audience. Giving your presentation your own personal touch keeps your audience interested and often makes your presentation more memorable.

Tip: Grab an old presentation while you are reading through this module and see whether your preparation was sufficient. Ask yourself, “Does my presentation match the target audience? Is my core message clear?”. Feel free to skip to the sections of the module you feel you need.

2 Preparation

Good preparation is key to a good presentation. It will minimize any nerves, gives you confidence and the feeling of being in-control whilst presenting.

We’ve broken up the steps of preparing for you below. Try to follow them in this order. At the end of this section you will find some examples of how the audience, core message, structure, and presentation format are connected.

2.1 Audience and setting

The first step is to **identify your target audience**. To whom you present, as well as the setting you find yourself, affects your core message (chapter 2.2) and the structure of your presentation (chapter 2.3). Ask yourself:

- What related knowledge does the audience have prior to the presentation?

Learning outcomes

At the end of this **module** you will be able to:

- Prepare a scientific presentation efficiently
- Successfully deliver your presentation with confidence and in a professional manner
- Reflect on your strengths and weaknesses

Learning outcomes

At the end of this chapter you will be able to:

- Cater to your audience
- Identify your core message
- Structure your presentation
- Make understandable and attractive slides

- What does the audience expect from the presentation?
- How can they use my ideas and results in their own work?
- How large will the audience be?

Also, it is important to know in what **setting** you are going to present. Things to keep in mind:

- How long your presentation needs to be
- Will you be the only one presenting?
- The size of the room and its services; i.e. the size of the screen, whether there is a blackboard/whiteboard present that you can use to make sketches and/or notes etc.

Different types of academic presentations include:

2.1.1 Presenting research updates to supervisors/staff

In this situation you are addressing a person/group that is (relatively) familiar with the content you are going to present. In general, they will have an excellent understanding of scientific research in the Earth Sciences and potentially even in the specific field you are working in. You can therefore keep the introduction short. Results and discussion can be more extensive. If necessary you could briefly address the pros and cons of your methods, or how the results are dependent on the methods (e.g. some flaws in the data are due to the methodology; it is very common in Earth Sciences to highlight and discuss flaws in methodology/results). Try to fill your discussion section with questions and interpret your results, further discussion will happen during the questions.

2.1.2 (Guest) lecture

In a lecture you are presenting with the purpose of teaching. Here the focus will be on **bringing across information** rather than the process of a specific research. Use as many schematic figures as possible to explain mechanisms. Since you are teaching your audience, it is even more important to see if the audience is following your narrative. Introduce the general topic and progress through your content gradually. Plan a break in your lecture in advance.

2.1.3 Presenting at a scientific conference or symposium

Conferences have a very large number of talks and lectures, so try to keep your presentation accessible. Try to get one message across very well, since after a long day of talks it is difficult to remember many details. Therefore, try to **stick to one research question**, and lead up to it with clear, straightforward arguments with only the data and analysis techniques you absolutely need. This will also help you shorten the presentation enough for a conference talk. After your presentation you can always elaborate (during questions or a personal conversation) if someone wants to know more.

A tip is to mention how your talk connects to the presentations before or after you. This showcases competence and vision on the topic, and it emphasizes the link between your core message and the broader theme the audience came to participate in. Of course, this only works if your talks are related to the same research area.

2.1.4 Peers (in courses or during MSc thesis talk)

The overlap of prior general knowledge between you and your peers will be very large, however you will have more specific knowledge of your specific research topic. This might result in a much smaller introduction or elaborate definitions of specific jargon. Focus mainly on topic-specific processes. It may be possible to compare new mechanisms to everyday examples, and provide useful analogies for complicated concepts. Do not hesitate to mention when there is something you do not know. Try to discuss your results and pose explanations for them, but remember to make a clear distinction between research-based theories and your own hypothetical reasoning.

2.1.5 Talks for the general public

Science communication is a field in and of itself, so it is particularly important to prepare and practice. In this case you cannot assume that your audience has a broad background knowledge in Earth Sciences. Even more so, they will not be familiar with the specific jargon we use in this field. Everyday examples or analogies can help to make your content more accessible. Make sure you are taking your time, introducing concepts fully before moving on. Someone outside of geosciences most likely will not see the connection between the geological processes that seem straightforward to you. Keep concepts separated, and engage your audience by explaining the connections.

2.2 Core message

A presentation should always be built up around a core message or central idea that you want to bring across. This should be around two sentences and should ideally be a **condensed version of your conclusions**. If you're brainstorming on paper, write these down clearly at the top. In Bold. Underlined. Whatever makes them pop.

Based on the arguments you provide, your audience should be able to infer the final conclusions on their own, with your guidance. Make sure your presentation **builds to your core message** in a logical, gradual way. Starting with your eventual conclusions in place allows you to build your arguments gradually and logically without any illogical detours.

Keep in mind that your audience can only absorb small amounts of information at a time, so **keep your arguments short** and to the point. More about this in the next section.

Now that you have a rough idea of the prior knowledge of your audience, your core message, and the timeframe you have to bring it across, you can move on to structuring your presentation.

2.3 Structure / narrative

Often, the general structure of your presentation follows that of a scientific article. A useful tip in preparing a structure for your presentation, before making any slides, is to **write a rough draft of your research** in a similar way to writing a report or a thesis. Depending on the length of your presentation, this rough brainstorm should be between one or two pages.

Organise your thoughts and structure the content into sections (see below). Depending on your chosen core message and target audience, some sections will require more emphasis, while others will need much less detail than an article.

Be critical of how much detail you should go into. One of the most important yet challenging aspects of preparation is **being selective**. Ask yourself what your audience really should know. *Less is more*. For example, if a certain project involved a method applied to more than one case, select one case to present. Do not try to convey all the stages you went through while doing the actual research.

2.3.1 Introduction

What is the purpose of your research? Your presentation should start with an explanation as to why you performed the experiments/ran the data/designed the model/read the papers. What scientific knowledge was missing in the academic world that you want to contribute to? This is known as your research question. Put this on your **title slide**.

Typically, a **content slide** is not necessary. An extensive description of the structure of your presentation costs you valuable time and is redundant since most conference talks (and thus the type you'll probably be giving in your classes) follow the same structure. In the unlikely case that you follow an unorthodox structure, or when your audience is not familiar with scientific talks, you can outline the structure of your talk, but keep it short.

The main purpose of your introduction is to articulate the **research question(s)**. One way of opening your presentation and keeping it interactive is by asking your audience how much they already know about your research topic and using that to build the **necessary background** your audience needs to understand your research question.

Another tip is to use a physical experiment or an anecdote to showcase why the topic fascinates you. Ideally, your introduction grabs the attention of the audience. Keep the theory easy to follow (depending on your target audience) and elaborate into more specific detail-oriented theory very gradually.

Use these questions as a guide when deciding what to say and what not to say:

- Why is your presentation relevant to your audience?
- What do they need to know in order to understand the next section of your presentation, e.g. the results?
- What do you want them to take away from the intro? This brings us back to the core message. At this stage you can phrase the core message as a working hypothesis.

Pose some sub-questions which should directly follow from the research question, hypothesis, and background you just outlined. The answers to these sub-questions would ideally require explanation using the next section of your presentation; the results. Let's keep that momentum!

2.3.2 Methods, observations, and results

General conference talks or class presentations **do not need** a methods section at all, unless you are focusing specifically on that aspect of research.

Your results section will contain observations, experiments, and/or quantitative data. In the case of a literature review, you can compare the results sections of different papers here. **Keep interpretations out of this section**, similarly to writing a report or paper. Technicalities like mathematical equations are too specific and should not be covered unless they are absolutely crucial. This might feel wrong since you have typically spent a great deal of time on this, but it is generally accepted given the fact that you will otherwise lose a large part of your audience fairly early on.

Remember, if certain aspects of your research require more detailed explanations, such as specific methods or detailed result comparisons, you can always introduce them shortly, describe them in general terms, and **come back to them in the questions** after your presentation is complete. You can even add some slides after your final “Questions” slide so you are fully prepared for any related questions, or if you have time left over.

The results section needs to be **as visual as possible** (see the *Visualisation* module). Focus on the observations and results that are **relevant to your core message**. Use figures and graphs to steer your audience into forming the same conclusions as you without explicitly having to voice them (yet). This approach keeps the audience more invested in your storyline and helps to make your presentation more memorable. You might even make this section interactive by getting the audience actively involved in the logical build-up of your results, but it may take some practice before you are comfortable doing this. Nevertheless, remember to stay away from any interpretations in this section.

2.3.3 Discussion and outline of future research

Now is the time to present the interpretations of your observations and results, and how these contribute to the general understanding of your (research) topic. Here is where you show how your findings provide insight into the research question and hypothesis. Again, stick to the arguments that are relevant to your research and build towards your core message(s). This could mean comparing your results to those of similar publications, but there is no need to compare all your results to literature unless it matches with your hypothesis and core message.

Try not to bring up many new sources at this stage. Continue with sources that you had already mentioned in the introduction, which probably showcased a knowledge gap. Go back to these sources and show how this gap is filled with your new findings.

At the end of this section the audience should be able to draw your conclusions clearly from all the information you have provided up to this point. For extra emphasis, include a **conclusions slide** with the most important points of your presentation and how they led to your core message(s).

2.3.4 Questions

Now the debate begins! If you have attended any conferences or symposia you will have noticed that a very wide variety of questions can be asked by many people of different scientific backgrounds. This section can get fairly heated, especially if the research is new and/or controversial.

Always make time in your presentation to answer questions from the audience. Most conference talks are structured in a way that allocates 12 minutes to present, followed by 3 minutes for questions. You can also allocate time *during* your presentation after important sections for this, which is especially useful in longer presentations or lectures to make sure everyone is still following your story. Questions are often a good indicator of the level of understanding amongst the audience.

Have a look over your slides. What kind of questions would you ask if you were to attend this presentation? Anticipating questions allows you to **prepare useful slides ahead of time** and can help with nerves. At the end of the presentation you may include the extra slides containing more in-depth information regarding certain methodology and results that were too specific for the presentation narrative.

It is also useful to identify the controversial or complicated aspects of your presentation and try to place yourself in the position of the audience. **Practicing with a friend or classmate** can help to see your presentation from another perspective and provide some examples of possible questions.

Of course, you can never be fully prepared for all questions. A useful trick to deal with nerves and to buy yourself some thinking time is to rephrase a question that is posed by a member of the audience. Moreover, by rephrasing the question you can confirm if you and the rest of the audience understood the question properly.

Based on their questions, you can use this experience to reflect on which parts of your presentation went well and which ones deserve more attention in the future. Furthermore, the audience may give ideas for new research questions to work on. For presentations on research projects, like a thesis, it is better to present before the very end of the project, so that you can use the questions asked during the presentation to inspire or improve your thesis/report/article.

2.4 Presentation format

Organise and design your slides in such a way that they are your guide while presenting. A given slide should prompt you as a speaker with what you meant to explain. If, while practicing, you notice that you tend to skip something in your text, add something to the slide to remind you.

There are many different slide designs to choose from. Keep it simple and professional, but more importantly: keep it consistent throughout your presentation. If you are presenting at an important event on behalf of the university, please see the [UU site](#) for the corporate template (“huisstijl”). Programs that are often used for making presentations are PowerPoint, Keynote, Prezi, Poster, etc.

2.4.1 Images/pictures

Images are a very powerful tool to enhance the narrative of your presentation and attract the attention of your audience. For example, pictures of your field site or work environment

at the beginning of your presentation can spark the imagination of your audience or allow the opportunity for an anecdote that promotes a relaxed, informal atmosphere. Pictures also enhance the overall aesthetic of your presentation and make it pleasing to watch.

A valuable tip is to use a picture as your **title slide** by making it darker and using white font colour for your title (see *Figure 1*). Using these as sectional title slides can help ease into the different sections mentioned above, but be careful not to make your presentation too much like a book with chapters as this can slow down your momentum.

Useful links for images:

- beeldbank.uu.nl
- unsplash.com
- pixabay.com
- istockphoto.com
- geologypics.com

The best practice is to use your own pictures of course, if they are relevant to your presentation.

Things to keep in mind when using pictures in your presentation:

- What is the function of the picture?
- What is depicted on the picture?
 - Field pictures showing processes or rock formations need to contain relevant information that can be easily seen. Highlight the important details in necessary with lines or shapes.
 - Background pictures should be calm without too many colours.
- Does it support the narrative?

Images should never distract the audience from the story you are telling. For example, low resolution pictures often annoy the audience and distract from the presentation. At the same time, the images must be large enough for the audience to see them properly. See if you can **run through your presentation** in a comparable setting as the one you will be in when finally presenting, so you can check if your figures are legible.

2.4.2 Figures

As mentioned before, your results section should be as visual as possible. Tables and graphs can give the audience a clear overview of any quantitative data you acquired. Make sure your audience can understand them independently of your spoken words. For example, graphs always need axes titles and, if necessary, a legend that explains all the symbology used (see *Figure 2*). When you first mention a graph or figure always start with **describing the axes**. As before, make sure your figures are clear (not too cluttered) and legible for people in the back of the room as well.

A useful way to make figures and graphs scalable while keeping them high quality is to use **vector figures** (see *Visualisation* module). These figures can be exported with different font sizes while the graphics and illustrations remain sharp. In this way you can ensure you maintain high resolution regardless of the size of the image.

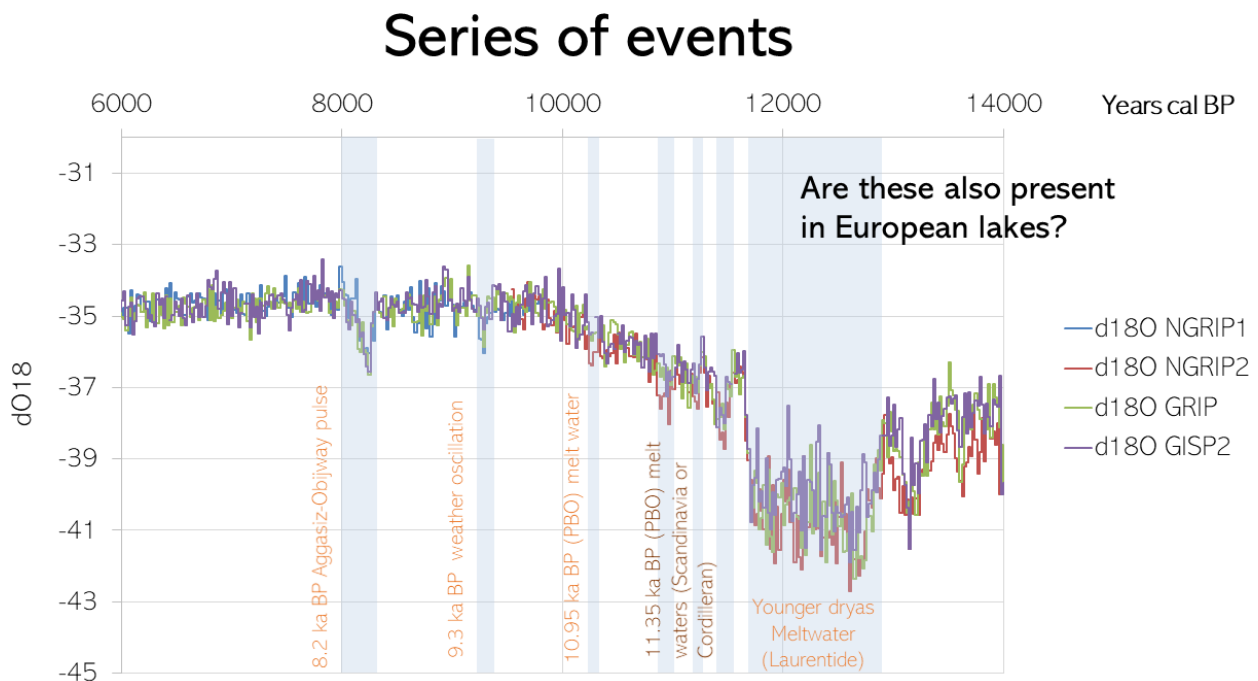


Fig. 2: Example of a self-made graph (based on data of Rasmussen *et al.* 2007) with highlighted sections and non-generic excel settings. An example of a follow-up question to introduce the next slide is also given. Slide and graph: Stan Schouten

2.4.3 Text

Even though visual representation of information is preferable, text is still necessary for clarification, prompts, and summaries (see *Figure 3*).

Tips:

- Use calm colours and fonts that don't clash with your background
- Keep it simple and minimal. As a rule of thumb: use only 6 words per line and not more than 6 lines per slide.
- One slide per idea/message. This way the audience can follow what you are saying and what is written on the slide at the same time.

What does event
strat tell us?

Runoff related proxy

- Hydrologic pause moment?
- Build-up release
- Effect via vegetation
- Direct freezing of lake
- Differences between layers
- Storminess

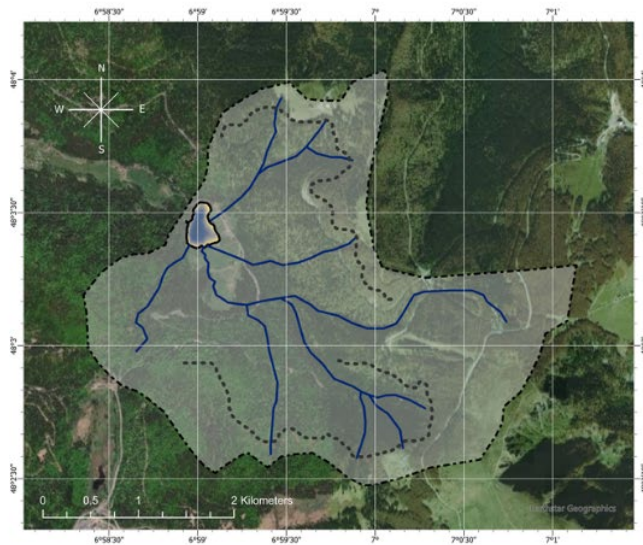


Fig.2: Example slide with listed text kept to a minimum. Only key words are used. Illustration to the right is focal point. Slide and figure: Stan Schouten

2.4.4 References

For any information you have borrowed or used that is not your own work (model, theory, picture, figure, or quotation etc.) you need to acknowledge your sources. There are two ways to do this: either **put the reference on the slide**, or if that clutters your slides too much, in the **bibliography on the last slide**. For the latter, follow the APA-style (see the [UU Library website](#)). Also, remember to indicate when you use your own personal photographs.

2.5 Practice

Once all the preparation and structuring is over and you feel your presentation is ready, it's time to practice it a few times. Below is a list of methods you can use to polish your performance. For body-language and vocal tips, see Chapter 3.

- **Time yourself.** Manage the time you need per slide and for the whole presentation. It is very important to respect the time allotted for your presentation since exceeding the given time affects broader schedules (e.g. a lecture or a conference).
- **Record yourself.**
- **Practice with a small group** of people you know. Think housemates, family, friends, classmates. This helps build confidence, enhance the natural flow of your narrative, and can highlight sections that still need a bit of editing.
 - You may need to adjust your slides a few times to make the presentation run more smoothly. This is an interactive process between preparing and polishing your slides, so make sure you have enough time for this section!
- **Practice with a larger audience.** You can try creating a study group with classmates with the same assignments so you can get internal feedback on your presentation style as well as content.
- **Write down key words** if you find you need prompts but refrain from reading whole sentences from a paper while presenting.

3 Stage presence

Everyone is nervous when they present. The more often you practice and the more presentations you give, the better it goes. Stage-fright can still happen to seasoned professionals, so don't worry if those nerves never really go away. The trick is to get comfortable quickly after you begin your presentation.

Learning outcomes

At the end of this chapter you will be able to:

- Use correct presenting techniques
- Adapt your voice and body-language to successfully deliver an oral presentation

If you want a nice ice-breaker to you can say: *“Before we begin, I’d like to know what you already know about **topic**”* or if your audience has received preparatory reading beforehand, *“Are there any questions (on the reading) before I start?”* the latter being especially relevant when the audience has read up for your presentation.

For tips on presenting online, please see UU’s [Online presentation tips](#).

3.1 Use of voice

Harnessing your voice effectively can greatly improve your stage presence and keep the attention of the audience throughout the presentation.

- Take a few **deep breaths** before you begin. Breathe in through the nose and support through your stomach (diaphragm). This releases tension in your throat and shoulders and automatically relaxes and lowers your voice.

- Keep your voice **dynamic**. Use speed and tone to add emphasis to important sentences. Be aware that monotonous speeches are very difficult to follow for longer periods of time.
- Pay attention to your **volume**. Be careful not to shout or strain your voice, or to whisper. Tip: Imagine you are speaking solely to the people sitting at the back of the room. Support your voice by flexing your core (stomach) muscles.
- **Articulate** your words, don't mumble. Look up difficult pronunciations before you begin, so you don't stumble over tricky words or concepts.
- **Slow down**. Take breaks in between points, gather your thoughts. Nerves often translate into speaking too fast; pauses allow the audience to digest the information.
- Filler words and sounds, like "uhm" are perfectly natural and give you a chance to slow down and think. The more you present and the more you practice the less you'll have to search for words. Be careful that you don't use them too often though, as that might give the impression of being unprepared.

This is a lot to be aware of all at the same time. It can be very difficult to change things like your voice tone, while also trying to focus on the content of your presentation. Awareness is the first step, change comes later. This is another reason why practicing is so important; if you are more comfortable speaking after a few test runs, you can focus on the content and vice versa.

3.2 Body language

A lot of non-verbal communication is going on during your presentation. Your body language speaks volumes, and it can be very helpful to **record yourself** to see if you move in ways you aren't aware of. Here are a few tips on how to present in a calm, professional manner:

- Place both your feet slightly spread solidly on the ground. Keep your back straight, your head high.
- **Look at your audience**. If you find this difficult you can pick a few people as focal points and alternate between them. Don't look at your notes too much and keep your glances to the monitor or the projection screen short and regular rather than long. Try not to read directly off the screen.
- Hand gestures are often used to guide the focus of your audience to certain areas of the screen or emphasise your point. Keep your motions **relaxed** and bring your hands back to a "rest position" in front or next to your body, or even behind your back. You can change the position of your hands continuously during a presentation, but make sure your hand gestures do not distract from the message you want to bring across.
 - Gestures like fiddling with your clothes and hair are very distracting for the audience. If you find this challenging, can always use a stress ball or a sensory fidget, but preferably one without sound or light.
- Try not to walk around too much. You can occasionally switch to different sides of the screen, and move closer or further away, but too much movement is distracting. If you tend to walk around a lot, be careful not to pace in front of the screen. It can help to confine yourself to an imaginary square on the floor.

- **Maintaining eye-contact** is not always easy, but when another person is speaking, don't look anywhere other than the screen, the presenter, or the audience. The audience will follow your line of sight, looking away frequently can come across as disinterested.
- Giving a neat and professional presentation also relies on a **clean, professional appearance**. In Earth sciences it is not customary to dress in formal attire (like a suit) for a class presentation, or even for some research conferences. However, you can only make a good first impression once. It costs very little extra effort to look the part.

4 Reflection / feedback

The development of your presentation skills doesn't end after the presentation is over. Looking at our own presentations in hindsight can help us become better speakers in the future. As such, it is important to reflect on our own performances and identify what went well and what could be improved upon. Incorporating reflection into our presentation habits will not only boost self-confidence but prompt us to be more thoughtful in their creation¹.

Learning outcomes

At the end of this chapter you will be able to:

- Reflect on giving your presentation

Give yourself a while after presenting to relax, clear your mind, and enjoy the experience. Time provides perspective, allowing you to give yourself (and receive) proper constructive feedback. Try to listen to the feedback given to you by your peers with an open mind. Remember, they are trying to help you become a better researcher and presenter. Try not to get defensive or to take comments personally but see them as suggestions for improvement.

This includes feedback from yourself. "You are your own worst critic" is a well-known phrase. Here are some constructive questions to ask yourself²:

- What did I do well?
- What could I improve on?
- If I were in the audience, what impression would I have?
- What would I do differently next time?

By critically reviewing our own performances we can more easily identify which techniques helped us to get our points across. You may want to keep a journal or keep these entries in a singular word document. Use these findings to help you prepare your next presentation. Overtime, reflecting on our performances will teach us personal pitfalls to avoid and remind us of techniques we've found comfort and success with.

For a more extensive overview of self-reflection methods, see the *Self-Regulated Learning module*, Chapter 4.

5 References and other useful resources

¹ [De Grez, L.](#), Valcke, M., & Roozen, I. (2009). The impact of goal orientation, self-reflection and personal characteristics on the acquisition of oral presentation skills. *European journal of psychology of education*, 24(3), 293-306.

² [Pantalone, M.](#) (2015). *Success Talks: Conversations with Everyday Leaders* [E-book]. Australian eBook Publisher, 1925271897, 9781925271898.

Why are presentations so important in academia?

[Good presentation skills benefit careers — and science \(nature.com\)](#)

UU-sources:

- [Four principles for making a good presentation \(powerpoint/keynote\)](#) Presenting tips from Sociale Geografie en Planologie
- [UU home study guide](#)
- Advice on how to write your presentation (the preparation): [Basic structure and editing guide](#)
- Different structure styles for a presentation: [Structuring guide w links to youtube examples](#)

Videos on how to make a presentation:

https://digitalmedia.sheffield.ac.uk/media/1_ubg5qwqn

Other additional resources:

[Nature Education - Delivering your presentation](#)

[Reynolds, G. \(2011\). Presentation Zen: Simple ideas on presentation design and delivery. New Riders.](#)