# Exercise 1:
# Project Kick-Off **&** Presentation Techniques

## a) Rhetorical Disposition

Rhetoric is the art of discourse. The aim is to improve your capability to inform, persuade, or motivate a particular audience in a specific situation. To practice this you are to make a short speech (3-4 min) where you argue for a certain standpoint. The goal is to convince your listeners and make them agree with you. The speech shall be constructed using the classical rhetoric model consisting of:

*Exordium* – create positive interest and give pre-understanding
*Narratio* – provide necessary background information, and convey motivation, e.g. problem
*Propositio* – clear presentation of your standpoint
*Argumentatio* – present arguments for and against your standpoint
*Peroratio* – summarise or pose your concluding point

Do the following (individually):

1. Decide your thesis (*Propositio*)
2. Identify your arguments and select the strongest one(s). Consider which would be your opponent's strongest argument and how you can address these. Understanding the opposing views increases the listeners' confidence in you. (*Argumentatio*)
3. Decide what you want to achieve with your speech, reflection or action? Shape the end accordingly (*Peroratio*)
4. Consider what background information is needed to embrace your argumentation (*Narratio*)
5. How can you open up to create a positive interest? (*Exordium*)

Make the speech to a fellow student who then provides feedback and suggestions for improvements, e.g. how catching was the opening, how clear were the arguments, was background information sufficient, how was the speech concluded?

Suggested proposition (thesis):

1. Provide free broadband for all citizens
2. Introduce taxes on sweets and unhealthy snacks.
3. Introduce programming as mandatory subject for all school children.
4. Ban smoking all together
5. Introduce 6-hour working days for everyone
6. We should extend the number of nuclear power plants in Sweden
7. *Your own*

## b) Structuring: Top-Down Writing and Section Moves & Steps

In technical writing the information is commonly provided top-down using standard structures or moves to clearly convey and motivate the research and its findings. Top-down writing style entails first presenting the higher level (e.g. improving software development) and then providing the details (e.g. improved requirements communication through involving more roles in the requirements reviews).

Certain patterns, or moves and steps, are commonly used in scientific writing. For example, for Introduction sections the following main moves exist:

**I-Move 1: Establish the territory**
Purpose: to connect the investigated problem to an area (territory) of common ground and the related work in that area. Compare to *Exordium* and *Narratio*.
Common steps:

- Describe the area and motivate its central importance.
- Claim unsolved problems (territorial lack).
- Provide background that will help audience understand the problem and appreciate its importance.
- Describe previous related research.

**I-Move 2: Establish the niche**
Purpose: to show the need for your work into an aspect of the area (the niche). Compare to *Narratio*.
Common step:

- Describe lacks, inadequacies, limitations, failures in previous work or knowledge. (Indicating gap/need/niche.)

**I-Move 3: Occupy the niche**
Purpose: to present your work as a response to the need established in I-Move 2.
Common step:

- Present main/important objectives of your work
- Present the most important novel outcomes
- Describe the scope of your investigation/work
- Mention important means and methods. (How was the work performed?)
- Present the structure of the rest of the article, i.e. orientation for reading.

Do the following, in pairs:

1. **Identify the niche of your work (I-Move 2).** What is the problem you want to solve? What is the lack of knowledge that you want to fill? Write a few sentences to express this.
2. Consider which **area within which the niche resides (I-Move 1)** and which level this area should be define at; very high-level (e.g. software engineering) or closer to the problem at hand (e.g. project management, tools for SPM)? Write opening sentences for the first step of I-Move 1 and one bullet point per remaining step. Place this before your previous sentences. (Leave related research for now.)
3. Consider **how to "occupy the niche" (I-Move 3)**, i.e. what are your main objectives, what is the outcome you expect, what is your scope and main methods? Draft one bullet per step of I-Move 3 to occupy the niche and place this after your previous text. You now have an initial outline for your introduction section.

Swap your text with another pair. Read through their outline and identify their territory and niche. Discuss similarities and differences, e.g. is the opening interest grabbing and easily relatable, what the area selected at the same level, how was the problem described, is sufficient background information outlined, do you expect the same type of outcome.

## Example: Top-Down writing and Introduction Moves

| THE ROLE OF DISTANCES IN REQUIREMENTS COMMUNICATION: A CASE STUDY by E. Bjarnason and H. Sharp | |
|---|---|
| Developing software is a knowledge intense activity where requirements communication plays a vital role in producing a successful product [8][21][32][38]. The customer requirements and expectations need to be communicated to and correctly understood by the development project members [38]. | I-Move 1: Describe the area and motivate its centrality, i.e. requirements communication within software development |
| Failure to do so increases the risk of producing a different product from the one the customer expects and can also increase the time and the effort required to achieve the desired product quality [8]. The interaction and communication between individuals and teams plays a vital role in coordinating and aligning the various project activities towards the same goal [8][44], i.e. to produce a software product that matches the customers' requirements. | I-Move 1: Describe and motivate problem, i.e. lack of communication leading to weak software and increased development costs. |
| Testing activities ensure that the released software matches the requirements and the customer expectations. However, this requires alignment of the RE and the testing activities in which human-to-human communication plays a vital role [10]. | I-Move 2: Establishing the niche, i.e. the role of communication in coordinating requirements and testing activities. |
| This communication can also be facilitated by software artefacts [24]. The structure and quality of these artefacts then influence the alignment between RE and testing [10]. Methods for mapping and improving communication paths by considering the requirements flow have been used to identify issues such as bottlenecks and missing communication between key roles [68]. Requirements communication has also been researched using social network analysis thereby identifying communication patterns and roles vital for effective requirements-driven collaboration within software development [49][50]. | I-Move 2: Previous work in the niche |
| We propose that distances are important factors that affect the quality and effectiveness of the *requirements communication*, and thus the coordination of requirements throughout a development project from requirements definition to testing. In our previous work we have identified an empirically-based theory of distances that states that the effort required to coordinate a project is affected by distances [12]. The proposed theory includes a set of *requirements engineering (RE) distances* for the alignment of RE and Testing (RET) activities. This set includes distances between people, e.g. geographical and cognitive, and between artefacts, e.g. semantic. | I-Move 3: Occupy the niche with authors' work, i.e. the role of distances in requirements communication (compare with title) |

## c) Goal-Question-Metrics (GQM)

GQM is an approach to software metrics promoted by Victor Basili [P1]. GQM is a method that drives the identification of relevant metrics by using business goals to drive the definition of measurements. The method consists of the following three levels:

- **Conceptual level (Goal)** A goal is defined relative a particular environment for a variety of reasons, e.g. to improve product quality, process efficiency etc. Examples for your course project could be to *manage complex dependencies between multiple project activities*, *efficient use of resources over multiple projects*.
- **Operational level (Question)** A set of questions is used to define models of the object of study and then focuses on that object to characterize the assessment or achievement of a specific goal. For example, "What kind of dependencies between activities are supported?", "How many other activities can one activity be related to?", "How easy is it to manage a large number of related activities?". Another example could be, "How many projects can a resource pool be shared between?", "How easy is it to gain an overview of resource conflicts?", "Can resource conflicts be resolved by automatic rescheduling?"
- **Quantitative level (Metric)** A set of metrics, based on the models, is associated with every question in order to answer it in a measurable way. For example,
    a. "Which of the following dependencies can be noted between activities? Scale: {before, after, finish-to-finish, finish-to-start, etc}
    b. "The maximum number of activities that can be related to one activity. Scale: integer."
    c. "How well are resource conflicts resolved through automatic rescheduling? Scale: {Not at all, To some degree, Fairly well, Very well, Excellently}

In pairs start drafting the evaluation framework for activity planning by using GQM. Do the following:

1. Define 1-2 goals for tool support for activity planning. Hint: Think about how the case projects perform activity planning.
2. Generate questions that define those goals as completely as possible in a quantifiable way.
3. Specify the measures (including scales) needed to be collected to answer those questions. Consider how to measure these in your evaluation.
4. Consider how to include quality aspects, as specific goals, as questions & measurements?