

PhD-supervision

tools

- Expectations
- Awareness of roles
- Evaluation – e.g. summing up the points
- Black board meeting
- Plans – activity and time (incl. teaching and courses)
- Reflection on the progress, learning and meetings

Contracts

Why: create common expectations and clear agreements

Content could be:

- meetings - responsibility and frequency
- the preparation of the meetings
- mutual expectations
- supervisors objectives for the period?
- PhD students objectives?
- Areas of responsibility in relation to content
- areas of response to the Aworking papers@ during the period:

period:

- language
- structure
- details
- methods
 - contacts
 - guaranty for passing....
 - Etc.

Facilitator interventions

- Summarizing
- mirroring
- asking open-ended questions
- use why, how, what, where
- dynamic list of questions
- feedback as "thinking loudly"
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learning journal

- Reflektion on individual learning
- Primary a written private room for reflection
- Akkumulating material
- Tool for awareness and change

How learning journals

- Diary
- log
- dialogue journal
- reflektive journaler (practice and reflection)

Focus in the journal

- Understanding of concepts
- difficulties in writing
- development of cooperative skills
- how to start and end tasks
- concentration problems
- general learning

Problems

- Takes time
- to get started after a pause
- to write about "critical" aspects
- difficulties in progression -
- "boring to write"
- uncertain toward content and form
- difficult to learn writing

Individual learning style

- How would you characterize the way you learn and research?
- What do you think is your greatest strength as a learner and a researcher?
- What do you think is your greatest weakness?

Resources for supervision

- What experiences have you had that may help the PhD students to learn efficient?
- What experiences can you draw on to provide examples and specific problems for the student to learn from?

Personal communication and learning style

Two ways in which people tends to perceive the world (Jung)

- Sensing – involves observing, gathering data through senses.
- Intuition – involves indirect perception by way of unconscious speculation, imagination

Everyone uses both functions but most people tend to favor one over the other

Personal communication and learning style

Two ways in which people tends to approach learning and communication (Myers – Briggs)

- Sensors like facts, data and experimentation
- Intuitors prefer principles and theories
- Sensors like solving problems by standard methods and dislike 'surprises'
- Intuitors like innovation and dislike repetition
- Sensors are patient with details but do not like complications
- Intuitors are bored by details and welcome complications

Personal communication and learning style

- Sensors are good at memorizing facts
- Intuitors are good at grasping new concepts
- Sensors are careful but may be slow
- Intuitors are quick but may be careless

Important:

Intuitors are more comfortable with symbols than are sensors. Since words are symbols, translating them into what they represent comes naturally to intuitors and is a struggle for sensors

Personal communication and learning style

Three categories of receiving information:

1. Visual: sights, pictures, diagrams, symbols
 2. Auditory: sounds, words
 3. Kinesthetic: feelings, tastes, smells
- Visual learners remember best what they see. If something is simply said they will probably forget
 - Auditory learners remember much of what they hear and more of what they hear and then say. They get a lot out of discussion. Prefer verbal explanation to visual demonstration, and learn.

Personal communication and learning style

inductive – deductive

Induction is a reasoning progression from particulars (observations, measurements, data) to generalities (governing rules, laws, theories)

Deduction proceeds in the opposite direction.

Personal communication and learning style

Active – reflective individuals

The mental processes by which perceived information is converted into knowledge can be grouped into two categories:

- Active experimentation
- Reflective observation
- Active individuals feel more comfortable with active experimentation, and conversely for reflective individuals
- Active individuals do not learn much in situations that require them to be passive. Work well in groups. Tend to be experimentalists.
- Reflective individuals do not learn in situations that provide no opportunities to think about the information. Work better by themselves. Tend to be theoreticians.

Personal communication and learning style

Sequential and global individuals

Sequential learners follow linear reasoning processes when solving problems. Can work when they understand it partially or superficially. May be strong in convergent thinking. Learn best when material is presented in a steady progression of complexity and difficulty

Global learners make intuitive leaps and may be unable to explain how they came up with solutions. May be strong in divergent thinking and synthesis. Learn better by jumping directly to more complex and difficult material

Personal communication and learning style

Learning style of most engineering students and teaching styles of most engineering professors are incompatible in several dimensions

Many engineering students are visual, sensing, inductive and active – and some of the most creative students are global

Most engineering education is auditory, abstract (intuitive), deductive, passive and sequential