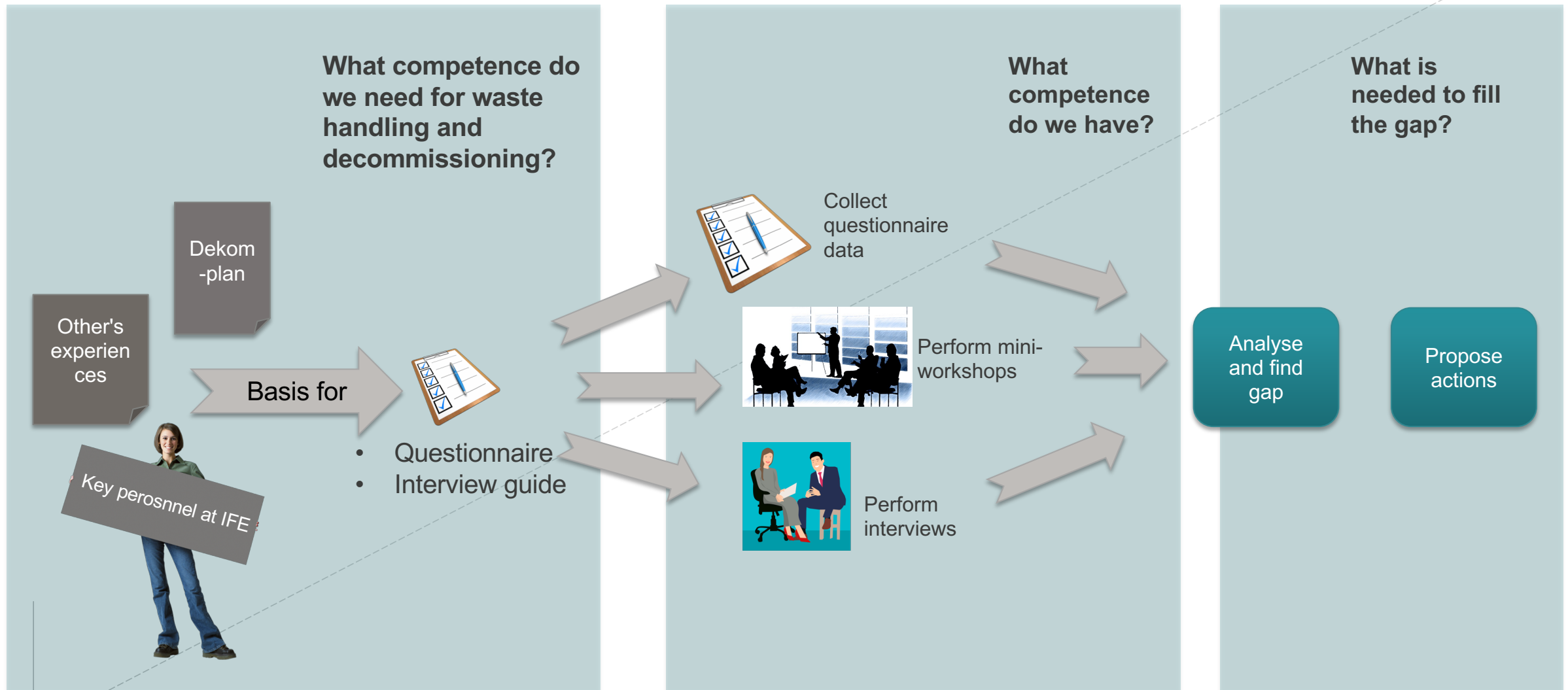


Competence mapping and workforce planning for decommissioning at IFE

Grete Rindahl, Espen Nystad

Competence mapping: Approach



Competence needs for decommissioning

Can reuse competences from operation:

- Radiation protection
- Engineering
- Analysis / characterisation
- Maintenance
- Waste handling
- Chemistry
- Decontamination
- Specialists (workshop, design etc.)
- Knowledge of systems, structures and components

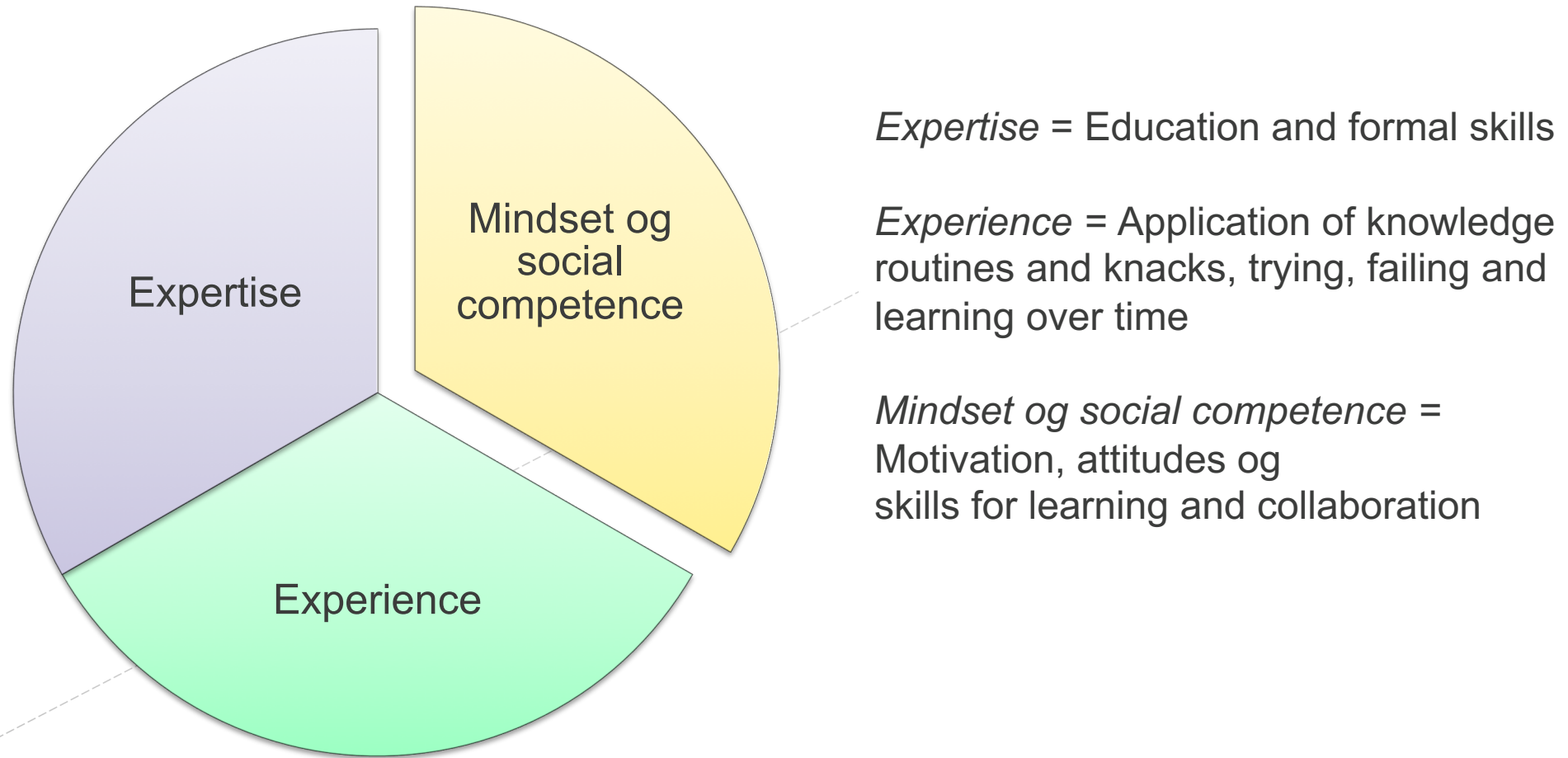
New competences that are needed:

- More advanced characterization
- Dismantling
- Demolition
- Decontamination (additional techniques)
- Waste management (additional techniques and concerns)
- Robotics and remote handling

Change in focus for decommissioning

- Unique, new and non-routine tasks
- Less predictable environment
- Changed radiological and industrial risks
- Project orientation
- Flexible work teams
- Risk assessment
- Waste production / categorisation and minimization

Competence for decommissioning



«Formal» knowledge

- Easiest to measure – on a diploma or possible to test
- Discipline knowledge, like mechanics or health physics
- Other professional knowledge and competencies
 - Documenting planned and executed work tasks
 - Knowledge on relevant rules and procedures
 - Measures, e.g. Safe Job Analysis – how and when to perform, what to contribute

Experience

- Partly hidden competency
 - May count the years in a position, more demanding to identify and quantify actual
 - People tend not to remember all: Their experience becomes inherent
- Focus on this in questionnaires and interviews

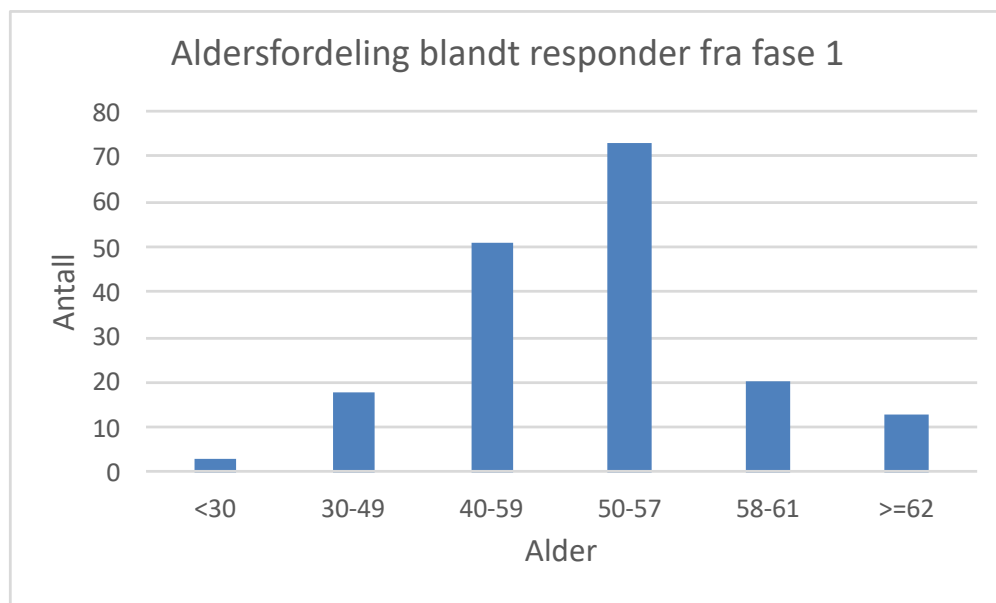
Mindset

- A hidden aspect of competence that is forever changing
 - Learning and collaboration skills may well be evaluated
 - Motivation and attitudes will depend on the situation
- Concern about factors influencing on motivation and mindset
 - Security
 - Predictability
 - Wellbeing
 - Trust in management and colleagues

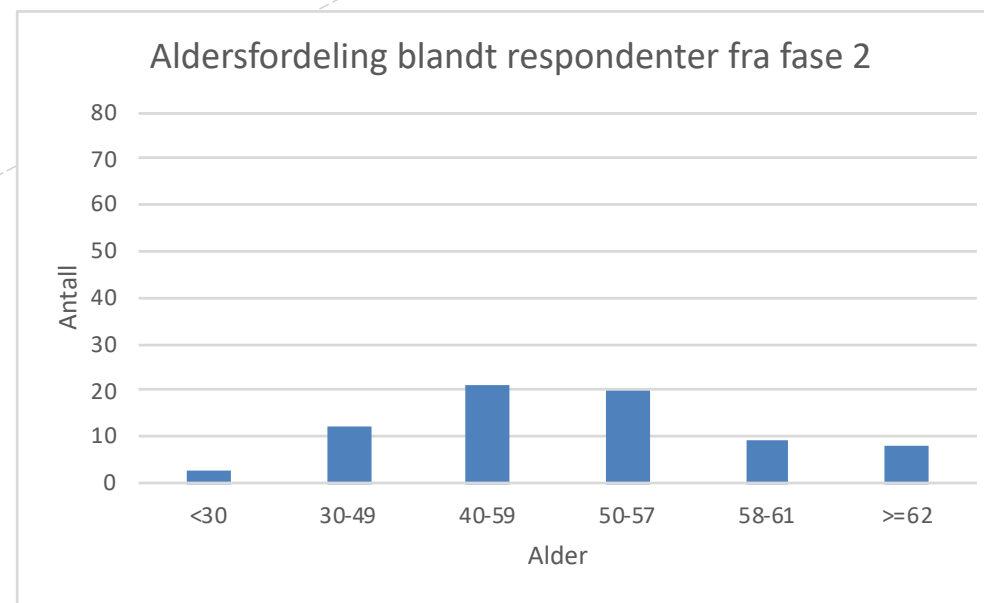
Main findings

- High base competence, and subjects report on ability and willingness to learn.
- Some disciplines have too few people with high competence, especially when age is taken into account, and it is urgent to transfer competence and experience.
 - Health physics and radiation protection
 - Characterisation
 - Planning, project management and traceability
 - Waste management
- Within some areas new competence and experience needs to be built. E.g. Advanced decontamination and characterisation methods.
- The exact competence required can not be clarified before decisions are made on questions like waste minimisation, end state etc.
- At the present stage, the main issue is to secure the base competence upon which we can build new required skills.

Age distribution








Sektorer: NFS, HMS (VERN/RP), REAK, ATOM








Sektorer: STAN, ADM (IED), DS

Performing functions

De-fueling	Dismantling	Decontamination	Waste processing and handling	Engineering support
 Operators, handling	 Operators, electro, mechanic	 Operators, rad. protection, engineers	 Operators, handling/mechanic	 Adm. staff, operators, rad. prot., engineers

Supporting and preparing functions

Engineering / maintenance	Analysis / characterization	Radiation protection	Specialists	Safety support
 Engineers, senior skilled workers	 Researchers / engineers/ lab/teknikere	 Researches, rad. protection	 Workshop,, design, electro ++	 Safety staff, researchers, operational staff

Decision-making functions

 Line leaders



Capacity and/or competence within these functions must be strengthened immediately to secure redundancy. Competence transfer is urgent in certain areas.



Capacity and/or competence within these functions must be strengthened before decommissioning








Capacity and basic competence within these functions are so far satisfactory. General competence building is needed in the transition to new tasks within decommissioning.






Calibration

- Same main findings, but some adjustments
- Main focus in calibration has been Halden
- In addition to calibration, we have also added data from a larger part of the organisation in the second phase of the project

Performing functions

De-fueling	Dismantling	Decontamination	Waste processing and handling	Engineering support
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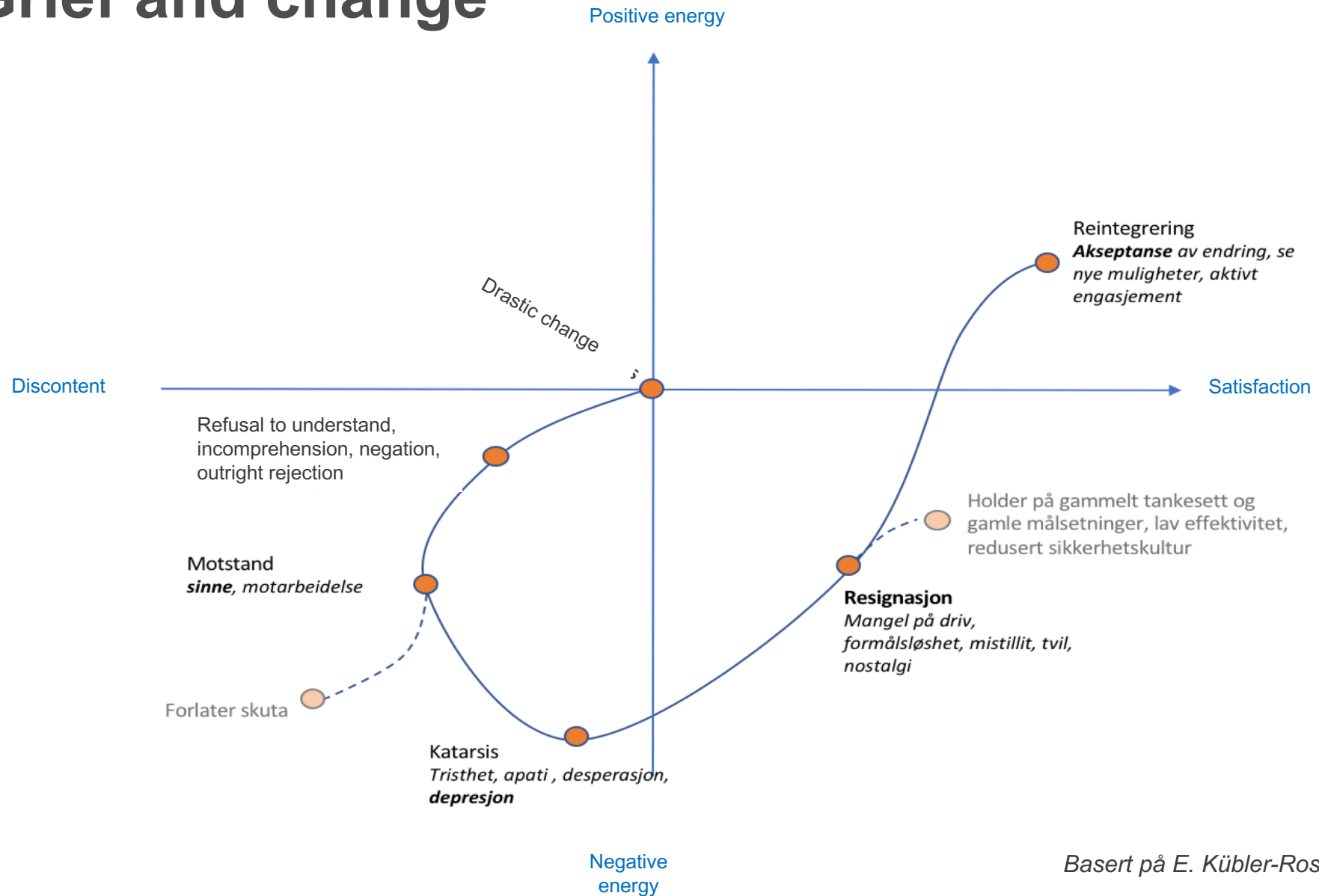


Capacity and basic competence within these functions are so far satisfactory. General competence building is needed in the transition to new tasks within decommissioning.

Safety

- All disciplines put focus on radiation safety and score well on safety focus
- There is however a need for more experience and knowledge of documenting safety
 - «Working safely is my concern, reporting on safety is somebody else's problem»
 - Traceability
 - Mutual learning
- As for all organisations moving into decommissioning, focus on industrial safety and HSE under changing conditions needs to be increased

Grief and change



One proposed action from competence mapping project:

Individual development plans

- Leader and employee together (with expert support where needed) sit down and outline a short plan, typically containing:
 - Work tasks that will be continued
 - New types of work tasks that are expected in future, and a plan for how the employee can prepare for these
 - New challenges and responsibilities that the employee would like to target.
- Such plans will contain many uncertainties, as several preconditions for future work tasks still are not established
 - Waste management and minimisation, levels of decontamination, regulations and guidelines etc.
 - Addressing such uncertainties, and identifying points in time where these will be discussed again will still reduce insecurity and frustration

Next steps

- Building and maintaining competence development plans
 - On the job training
 - Courses
 - Workshops
 - Visits and hands-on experience
- Put in place routines for regular reassessment of competence
- Continue to work on decommissioning leadership and motivational factors
 - Involvement
 - Communication
 - Predictability
 - Job security
- Calibrate data for the rest of the organisation