

FOR INSTRUCTORS: GAME MASTER & META-PERSPECTIVE

Competency goals, expected conflicts, observation, debrief, assessment

AUTHORS

Gesellschaft für Informatik

deRSE

Julian Dehne  

Florian Goth

Jan Phillip Thiele

Jan Linxweiler

Anna-Lena Lamprecht

Maja Toebs

AFFILIATIONS

Gesellschaft für Informatik

deRSE

This page is intended for the instructors / the game master only. It provides the meta-perspective on the role-play: *What should the students learn? Which conflicts are built in? What do I watch for while observing? How do I assess it?*

1. WHAT THIS IS ABOUT DIDACTICALLY

The role-play trains lateral leadership – leadership *on equal footing, without relying on hierarchical power, but on one's own effectiveness* (Toennes, *Moderne Mitarbeiterführung – Laterales Führen* (lateral leadership)). For Research Software Engineers this is the normal case: they coordinate software without being the researchers' superiors.

Lateral leadership rests on a triad and four competency fields:

TRIAD	VISIBLE IN THE GAME AS
Understanding	asking about interests, listening, switching perspective, clarifying goals/rules
Power	informational and expert power, access to contacts – <i>not</i> directives
Trust	acting predictably, promising only what can be kept

COMPETENCY FIELD (TOENNES)	GUIDING QUESTION FOR OBSERVATION
Power of personality	Does the RSE come across as credible, coherent, inspiring?
Power of language	Does she convince – or does she cajole/justify herself?
Power of conflict resolution	Are conflicts recognised early, addressed openly, resolved constructively?
Power of self-leadership & leading others	Does she prioritise herself <i>and</i> lead the others mindfully?

2. COMPETENCY GOALS & MAPPING TO THE RSE CURRICULUM

The competencies dock directly onto the seminar curriculum: conveying SE knowledge to developing researchers, leading / leading through non-computer-scientists, planning research software, as well as the orthogonal soft skills conflict resolution, work structuring, problem solving, lateral leadership.

COMPETENCY (LEARNING GOAL)	HOW IT IS BUILT IN THE GAME	ASSOCIATED EVENT
Eliciting & sharpening requirements	turning vague wishes into decidable criteria	E7, kickoff
Conveying SE knowledge in lay terms	explaining “why a data model first?” without lecturing	E2, E6

COMPETENCY (LEARNING GOAL)	HOW IT IS BUILT IN THE GAME	ASSOCIATED EVENT
Leading upward (expectation management)	“selling” Petra a realistic plan (reining in her over-optimism)	E2, E6
Mindful leading of others	guiding Tobi appropriately, taking Mara seriously	E3, E4
Prioritising under scarcity	weighing scope against time/resources	E1, E3, E4
Leading conflicts constructively	naming goal conflicts openly instead of avoiding them	E1, E5
Self-leadership	staying calm, not fleeing into over-promising	all
Involving stakeholders	integrating external interests instead of fending them off	E5

3. EXPECTED CONFLICTS (THE “DESIGNED BREAKING POINTS”)

These conflicts are built into the roles and events deliberately. They are the learning material – not disruptions to be prevented.

1. Sustainability vs. speed — Robin wants a data model first, Petra (out of enthusiasm) and Mara (out of deadline pressure) want something presentable quickly. (*Core conflict, E2/E3*)
2. Vague domain language vs. decidable specification — “similar classes”, “interesting patterns”. (*Kickoff, E7*)
3. Individual interest vs. shared platform — the urgent dissertation analysis eats up the roadmap. (*E3*)

4. Plan vs. reality — commitments made in the first fifteen minutes collide with a loss of resources and unplanned data-protection scope. (E1/E4)
5. Internal vs. external legitimacy — research logic vs. benefit for the partner school. (E5)
6. Build vs. buy — the project's very reason for existing is questioned; the RSE must demonstrate self-efficacy without becoming defensive. (E6)

4. HIDDEN INTERESTS & NEGOTIATION MATRIX (MASTER OVERVIEW)

For the game master only – the master key. This overview bundles *all* the secret briefings from the individual cards in one place. The students each know only their own card; they are meant to *negotiate out* the opposing interests during play. Keep this page closed during distribution.

THE OBJECT OF NEGOTIATION: THE SCARCE TIME BEFORE THE CONFERENCE

The real conflict is a distribution problem: before the conference (8 weeks), realistically only one or two larger results fit into the available development time – but four parties want their concern addressed first. Five topics are negotiated at the core:

#	NEGOTIABLE TOPIC	WHAT IT IS ABOUT
V1	Focus of the first weeks	data model · conference demo · Mara's export · school dashboard – <i>not everything fits</i>
V2	Conference commitment	What exactly is promised? (nothing / small interim result / large demo)
V3	Data protection / video anonymisation	blocks the video data – who does it, when?
V4	Resources	student-assistant hours (Tobi) · the <i>quiet budget reserve</i> that Petra offers of her own accord

#	NEGOTIABLE TOPIC	WHAT IT IS ABOUT
V5	School dashboard	build it yes/no, at what scope

WHO SECRETLY WANTS WHAT — ALL THE SECRETS AT A GLANCE

ROLE	SECRET PERSONAL GOAL (BESIDES THE SHARED SUCCESS)	“LINE” / DRIVING MOTIVE	TRUMP CARD / HIDDEN INFORMATION
1 · Robin (RSE)	a viable data model + <i>one</i> honest mini-plan; being taken seriously as a coordinator	commits to nothing that would lead to throwaway code / overload	is the only one who knows: only ONE big result fits before the conference
2 · Petra (PI)	show something honest at the conference – rather small & real than big & airy	<i>soft</i> line: never uses her authority; her risk is over-optimism (promising too much)	quiet budget reserve (student-assistant top-up / tool licence) – offers it of her own accord as soon as a credible plan is on the table
3 · Mara (Melis)	her own data export (deadline in 3 weeks)	otherwise turns <i>quietly uncooperative</i>	is the only one who knows the data semantics – no data model without her
4 · Tobi	not to look overwhelmed, keep the job	critical task on the critical path → breaks down (E4)	realistically manages only ~5 h/week (exams); already has a finished mini-script for Mara’s export

ROLE	SECRET PERSONAL GOAL (BESIDES THE SHARED SUCCESS)	“LINE” / DRIVING MOTIVE	TRUMP CARD / HIDDEN INFORMATION
5 · Sabine (Korter)	a simple dashboard for the school conference (in 3 weeks)	credibly threatens a school exit (major data loss)	can deliver 2 more classes + contacts if involved

CONFLICT MATRIX — WHO CLASHES WITH WHOM

Cells show *what* the two roles are in tension about (topic in parentheses):

AGAINST ↓ / ↑	PETRA	MARA	TOBI	SABINE
Robin	speed vs. sustainability – but goodwilled (V1/V2)	model first vs. my export first (V1)	task scoping vs. real capacity (V4)	roadmap vs. dashboard wish (V1/V5)
Petra	—	both want time “first”, but for different things (V1)	hopes for output Tobi cannot manage (V4)	research logic vs. school benefit (V5)
Mara		—	wants export → needs Tobi’s script/time (V1/V4)	competes for the same scarce dev time (V1)

AGAINST ↓ / ↑	PETRA	MARA	TOBI	SABINE
Tobi			—	(no direct conflict)

Core tension: four parties claim the same scarce development time (V1) for *something different in each case*. Played distributively (everyone insists on their own) it ends in outcome C or D (see §6). Played integratively, almost every “top goal” can be served – because the priorities lie *differently* and there are hidden resources.

THE INTEGRATIVE SOLUTION SPACE (ZOPA) — THE “GOOD” PACKAGE

There is a deal in which everyone gets their most important thing without the RSE promising the impossible. The RSE does not have to hit it exactly – but the closer, the more trust grows:

- Weeks 1–3: Mara documents the data semantics ⇌ Robin builds a clean partial dataset from it and delivers Mara’s export by week 3 (saves her deadline). → *partly solves V1, brings in Mara’s trump card, defuses the Robin↔Mara conflict*.
- Tobi’s script is used for the export; Tobi gets a small, supervised task that fits into ~5 h/week. → *V4, defuses E4 in advance*.
- Petra offers the budget reserve of her own accord (as soon as a credible conference path is shown): funds for a tool licence / student-assistant top-up make possible, by week 8, a small, real analysis on the clean partial dataset – the conference contribution. An abstract in 2 weeks describes the plan + first partial results. → *V2/V4*.
- Minimal read-only dashboard for Sabine’s classes (partly from Tobi’s script) + data-protection roadmap → Sabine gets her conference commitment, stays on board and brings 2 more classes. → *V3/V5, defuses E5*.

Result: the core data model stands, the conference is served, Mara’s deadline saved, the school retained, Tobi not burned out – nobody gets everything, everyone gets the most important thing. This is archetype A (§6).

As game master, dose it out: the hidden trump cards (Petra’s budget, Mara’s semantics, Tobi’s script, Sabine’s additional classes) are the keys that open the seemingly zero-sum conflict. If a group gets stuck, cue the appropriate event so that a trump card comes into play – e.g. E3 draws out Mara’s deadline, E4 forces honesty about capacity, E2/E6 give Petra the opportunity to make her support (up to and including the budget) visible.

5. OBSERVATION SHEET

One sheet per RSE player (or per group). Scale 1 (barely) – 4 (assured). The game master and the remaining participants are observers.

OBSERVATION POINT	POSITIVE INDICATOR	1–4
Understanding	asks open questions, summarises, switches perspective	☐
Requirements	makes the vague decidable (“What does <i>similar</i> mean?”)	☐
Power of language	convinces with arguments, does not cajole/justify herself	☐
Conflict resolution	addresses goal conflicts openly & early	☐
Expectation management	commits only to what is realistic; reins in Petra’s over-optimism	☐
Leading others	gives Tobi clear, fitting tasks; takes Mara’s concerns seriously	☐
Self-leadership	stays calm, structured, does not flee into over-promising	☐
Result	at the end there is a viable, prioritised mini-plan	☐

Short note fields: A moment of successful lateral leadership? · A missed lever (understanding/power/trust)? · A sentence that turned the group around?

6. POSSIBLE OUTCOMES

The set of results is deliberately limited – different groups should arrive at different, each defensible endings. Four archetypes:

- A — The viable compromise (*target state*): Robin prioritises openly, promises Petra a *small* presentable interim result for the conference (e.g. a clean partial dataset + an analysis), anchors the data model in parallel, and involves the school with a minimal dashboard. *Trust grows.*
- B — The over-promise: Robin gets swept up in Petra’s enthusiasm (or fuels it himself) and promises everything by the conference. Short-term applause, but the plan is unrealistic – useful in the debrief as a contrast (*trust is squandered later*). Instructive: Petra’s over-optimism is not curbed by limits from above – Robin must hold the realistic line himself.
- C — The technical blockade: Robin insists on “clean first, then results”, without picking up the others’ interests. The group does not feel heard; Petra stays friendly and supportive, but her enthusiasm runs into a void and a standstill sets in. (*Power without understanding.*)
- D — The unravelling: No clear focus, everyone pulls in a different direction, many open points. (*Leadership does not take place.*)

All four are legitimate game outcomes and provide debrief material. There is no “game over”.

7. SCHEDULE & TIMING

Based on the template “*First project lead*” ($\approx$ 100–110 min, scales well and can be split across two sessions). Plan generous time – negotiating and playing out the roles need room; overly tight rounds smother the very dynamic that is the point.

PHASE	CONTENT	TIME
Explanation & motivation	Why a role-play? Scenario & role overview (ideally distributed in advance)	10 min
Distribute roles by preference	students pick their person; hand out confidential cards	5 min

PHASE	CONTENT	TIME
Creative preparation	flesh out the persona (task at the bottom of each card), sharpen secret goals & red line, coordinate behaviours	20 min
Role-play	kickoff meeting incl. events (possibly 2 runs with role swap)	2 × 30 min
Reflection & debrief	see below	15–20 min

Distribute in advance (recommended): hand out the scenario and role overview a few days before the session so that students come prepared and can choose their role by preference (§Distribution). This shortens the preparation phase and raises engagement.

Role swap (recommended): the Robin players lead a *different* group than the one they prepared with. The game master is – like the other participants – an observer.

Materials: the confidential individual role cards (1 PDF/printout per person – nobody sees the others' cards), name tags with the first names (Robin, Petra, Mara, Tobi, Sabine) and printed event cards, flipchart/Miro for capturing results, this observation sheet (1 × per participant + 1 × trainer).

8. DEBRIEF (REFLECTION)

Facilitate in this order – *first experience, then patterns, then transfer*:

Experience

- At what point did you feel *like a leader* – and when not?
- Where did it get uncomfortable, and what did you do in that moment?

Patterns (lateral leadership)

- Which of the three levers – understanding, power, trust – did you use consciously? Which too little?
- Where did you slide from *convincing* into *cajoling/justifying*?
- When would you have been better off asking a question instead of giving an answer?

Conflict & role

- Which goal conflict was the hardest? How could you have framed it differently?
- To the “led” roles: What convinced you? What triggered resistance?

Transfer

- Where do you encounter this constellation in real everyday RSE work (domain RSE vs. infrastructure RSE, PI with a different background)?
- In what way does this go beyond general communication/management theory – what is *specific* about leading developing researchers?
- Which *one* thing will you take on for your next real project meeting?

9. VARIANTS

VARIANT: DOMAIN RSE VS. INFRASTRUCTURE RSE

Give two groups different RSE profiles to make the curricular relevance visible:

- Domain RSE (internal RSE): employed at the chair, knows educational research to some extent, but is deeply entangled in the group’s dependencies. *Closeness, but less distance-authority.*
- Infrastructure RSE (external RSE from an RSE centre): booked only by the day, high SE quality, but hardly any domain knowledge and no attachment. *Distance-authority, but less understanding.*

Compare in the debrief: *Which profile had it easier/harder at which event?*

FURTHER ADJUSTMENT SCREWS

- Change the domain: instead of educational research, e.g. a social-science panel study or a public-health register – structure and events stay the same.
- Difficulty level: set the secret behaviours mild/sharp; add E5–E7.
- Set a focus: aim one round only at *expectation management upward* (E2/E6), another only at *leading others within the team* (E3/E4).

Sources & reference: role/persona structure based on the existing RSE role-play (chemistry scenario); format “first project lead with triggered events” based on the template “*First project lead*”; competency model based on A. Toennes, *Moderne Mitarbeiterführung – Laterales Führen* (Understanding/Power/Trust; four competency fields). Debrief questions expanded from the workshop’s [reflexions-fragen.md](#).

