Where do we stand in Requirements Engineering Improvement Today?

First Results from a Mapping Study

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Notion of RE quality and its improvement

RE “Best Practice” Norm

Assess/Benchmark
Serves as Orientation
Adopt

RE reference model

Socio-economic context
Goals, expectations...

Steer

RE improvement principles

1. Solution orientation
   (Also: “normative”, “prescriptive”)

2. Problem orientation
   (Also: “Inductive”)

Paradigms (simplified)

A. Activity orientation
B. Artefact orientation
Paradigms and principles
The ugly truth remains...

Problem:
• Little knowledge about the
  • state of the art in Requirements Engineering improvement approaches
  • state of empirical evidence

Objectives: Explore the publication space
Weapon of choice: Systematic mapping study
RE improvement today
Research questions

RQ1. Of what type is the research?

RQ2. Which process improvement phases are considered?

RQ3. What paradigms do the publications focus on?

RQ4. Are the underlying principles of normative or of problem-driven nature?
Study design

Overview

RQ1. Of what type is the research?
RQ2. Which process improvement phases are considered?
RQ3. What paradigms do the publications focus on?
RQ4. Are the underlying principles of normative or of problem-driven nature?
Study design
Voting procedure

RQ1. Of what type is the research?
RQ2. Which process improvement phases are considered?
RQ3. What paradigms do the publications focus on?
RQ4. Are the underlying principles of normative or of problem-driven nature?

Agreement level
1st stage: 53.4 % (31/58)
2nd stage: 72.4 % (42/58)
3rd stage: 86.2 % (50/58)
4th stage: 100 % (58/58)
RQ1. Of what type is the research?
RQ2. Which process improvement phases are considered?
RQ3. What paradigms do the publications focus on?
RQ4. Are the underlying principles of normative or of problem-driven nature?
**RE improvement**

**Conclusions**

- “Healthy” distribution of approaches with many concepts
- Most papers focus on activity-based and normative approaches
  - Focus on assessment against activity-based best practice norms
  - Triggered by “best practice movement”?  
  - Little known about benefits and limitations of
    - available improvement principles
    - available paradigms
What now?

- First indicators for reluctance against activity-based normative REPI*

„I am not convinced of the benefits of external standards.“

» How (and why) to improve RE in a
  » holistic manner
  » problem-driven
  » artefact-based

… manner?

* http://re-survey.org
Future research

- Explore principles of artefact-based and problem-driven REPI
- Determine reliable measurements of improvement success
- Evaluate improvement principles in comparative manner
You are cordially invited to join us!

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Thank you!