Titel

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Abstract. TBD

Keywords: TBD

1 Introduction

motivation

2 Fundamental Principles

short introduction to EBSE,..

- **Evidence-based approach**: integrate all available research (evidence) in decision making process
- **Aim**: "EBSE aims to improve decision making related to software development and maintenance by integrating current best evidence from research with practical experience and human values." [1]
- **Five steps** of practising EBSE [3]:
  1. Ask an answerable question.
  2. Find the best evidence that answers that question.
  3. Critically appraise this evidence.
  4. Apply the evidence (and critical appraisal).
  5. Evaluate the performance in previous steps.

  → important tool: Systematic Literature Review (SLR)
- **SLR** [2]: identify and interpret all available literature regarding a research question → papers should be written for synthesis (TODO requirements for this, common mistakes/problems?)

3 Related Work

SEED, "a preliminary empirical investigation of the use of EBSE by undergraduate students"

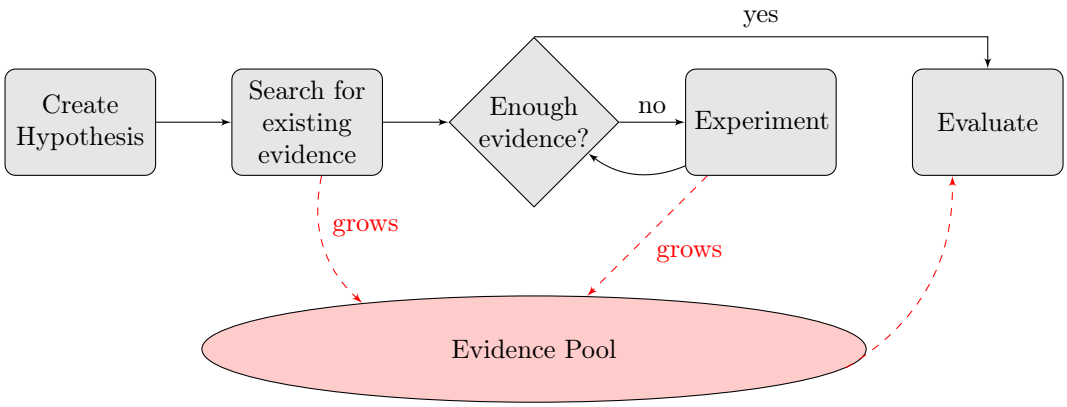
4 Our Approach/Guidelines

4.1 Setting up our design guidelines

The checklist (TODO name?) is meant to implicitly guide the user's approach to experimenting. By guiding the user, typical mistakes might be prevented. To create guidelines that help preventing typical users' mistakes, these mistakes first need to be identified. In this section, experiences and guidelines found in related work are discussed. The conclusions are used as basis for design of our guidelines. The first set of guidelines is based on the report of Rainer et al. [4]:

Observation	**Conclusion/Guideline**
"Students had problems constructing well-formulated EBSE questions." (p. 6)	Give examples for good questions to make sure the user understands a good question's scope of information. Also, explicitly list which building blocks should be contained in the question.
"Students used limited criteria for identifying the best or better evidence[...]" (p. 6)	Support decision-making to get a decision as unbiased and suited as possible. Since a decision's quality is highly dependent on the individual case, we only give a very general hint to the user. The idea is to sensitize the user to consciously prevent bias as good as possible.
"Students used a very limited number of search terms." (p. 6)	If users look for something very specific without knowing the technical term, search engines might yield better results when used with more detailed search terms. Also, synonyms or similar words might widen the search's scope to find more related work. Encourage more search terms by providing examples containing enough search terms.
"Students provided poor explanation in their reports of how their searches were conducted." (p. 7)	TODO
"Students varied in their use of the EBSE checklist." (p. 7)	Design the checklist in a way to support the user's workflow instead of hindering it. Keep it possibly simple and provide enough examples to make the user never guess an item's meaning.
"Some students critically appraise the technologies rather than the publications (evidence) on the technologies" (p. 7)	TODO Give a hint/indication?
"But we also think that the kinds of problems students were tackling [...] are not the kinds of problems researchers commonly investigate." (p. 8)	Scientific and practical evidence can have very different requirements regarding content and other aspects such as duration of evaluation. To limit this paper's scope, we focus on scientific evidence.

4.2 Workflow



TODO:
Add numbers to each node, explain each node
Missing node: "Make Decision" at the end?
Layout/Style/Color

4.3 Checklist

Question
Contains ***technology*** in a ***context*** showing an ***effect***. TODO Kitchenham Quote (practitioners)?
"Does pair programming in professional software development teams increases code quality?"

Hypothesis
Needs to contain a ***prediction*** and needs to be ***testable***.
"If you do x, then y will happen"

Experiment
Context

Dependent Variables
Variables that are ***measured*** during the study.

Independent Variables
Variables that are ***changed*** during the study.

Method
Lab-/Field study, number of participants, metrics, ...

Results
Experiment's outcome
No interpretation or conclusion!

Conclusion

Interpretation of experiment's results.
Verifying or Falsifying Hypothesis.
Scope of generalization.

5 Discussion

i just cleaned this mess up..

References

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