Engenharia de Software Experimental
Alguns artigos interessantes

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Tipos de artigos em engenharia de software

- Software engineering article types: An analysis of the literature; M. Montesi e P. Lago, Journal of Systems and Software, Vol. 81, 2008.

Table 1
Overview of the types of articles

III.A.	Publishable papers: general
III.B.	Extended versions of conference papers
III.C.	Empirical research reports
	III.C.(1) Observational studies
	III.C.(2) Case studies
	III.C.(3) Field studies
	III.C.(4) Experimental papers
	III.C.(5) Meta-analyses
III.D.	Experience papers
III.E.	Theoretical papers
III.F.	Tutorial articles
III.G.	Surveys
III.H.	Short papers
III.I.	Papers oriented towards practice
	III.I.(1) Educational papers
	III.I.(2) "How to"/ tool report papers
	III.I.(3) Application papers
III.I.	Opinion papers

Empirical research reports
  – Empirical research includes different research strategies such as case studies, experimental research, or qualitative research
  – Clear and comprehensive guidelines on how to write a proper empirical research paper are not yet available
  – The experimental context is considered important for all types of empirical research
  – Empirical research is increasing in SE

Observational studies:
  – Observational studies include all empirical research strategies that impose little control over the developmental process
  – Contextual factors, such as the type of industry in which the products are used, or the experience and skills of software staff, affect the utility and generality of the results

Case studies:
  – Case studies' most distinguishing feature is their descriptive character
  – It is difficult to distinguish case studies from experience reports or first-hand experience reports
  – The environment of the research is especially important to evaluate case studies
  – They allow for different data collection procedures, including controlled experiments
  – Their major advantage is that they reflect real world situations
  – Some authors argue that, for this reason, they can communicate better to practitioners

Field studies:
  – Neither the function of field studies nor their difference from case studies is clear in most sources

Experimental papers:
  – The terms "experiment" and "experimentation" are often used improperly in SE
  – Many researchers complain about the lack of standardization regarding collection measures for experimental research
  – Some also argue that current SE experimental research is insufficiently representative of industrial settings
  – It is particularly difficult to carry out true experimentation in SE real settings

- On the Success of Empirical Studies in the International Conference on Software Engineering (ICSE); C. Zanier, G. Melnik, F. Maurer, ICSE, 2006.

Table 1: Study Type Parameters

Controlled Experiment	
	All of the following exist: Random assignment of treatments to subjects. Large sample size (>10 participants). Hypotheses formulated. Independent variable selected. Random sampling. [1]
Quasi Experiment	
	One or more of points in Controlled Experiment are missing. [3]
Case Study	
	All of the following exist: Research question stated. Propositions stated. Unit(s) of analysis stated. Logic linking the data to propositions stated. Criteria for interpreting the findings provided. Performed in a 'real world' situation [26]
Exploratory Case Study	
	One or more of points in Case Study are missing.[26]

Experience Report

All of the following exist: Retrospective. No propositions (generally). Does not necessarily answer how or why. Often includes lessons learned. [17]

Meta-Analysis

Study incorporates results from previous similar studies in the analysis. [9]

Example Application

Authors describing an application and provide an example to assist in the description, but the example is "used to validate" or "evaluate" as far as the authors suggest. [21]

Survey

Structured or unstructured questions given to participants. [16]

Discussion

Provided some qualitative, textual, opinion-oriented evaluation. E.g. compare and contrast, oral discussion of advantages and disadvantages.

Artigos do CBSoft/SBES

- An empirical assessment on the use of execution traces in software maintenance. Raquel Fialho, Marcelo Maia (UFU)

- Analyzing Refactoring on Software Repositories. Gustavo Soares, Bruno Catão, Catuxe Varjão, Solon Aguiar, Rohit Gheyi, Tiago Massoni (UFCG).