



Viewpoint: PhD Abstract Publication in Empirical Software Engineering

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It recently became clear to me when reviewing a completed PhD dissertation that had involved extensive empirical data concerning defects in delivered software that the breadth and depth of the work is often difficult to judge based on the literature published at that time. This was because parts of the thesis were published in papers in different conferences and journals, and other parts of the work were yet to be published. Throughout the world there are many software engineering researchers in the process of completing their PhD write-up who have carried out substantial research using empirical techniques. It is also likely that the publication conventions of normal outlets do not provide a vehicle for the author to outline the breadth and depth of the entire research project. Consequently the work often appears in many pieces across a number of years in many different venues.

A new initiative which we have started in Empirical Software Engineering is to offer completing doctoral students the opportunity of publishing an abstract of their thesis in a venue which will bring the work to the attention of researchers and professionals. In this way, PhD's which have been either testing new theories or validating accepted software engineering principles using empirical techniques, will have a mechanism to communicate the extent of their work to a wide audience.

Future issues will have a regular section of the journal devoted to the publication of these abstracts. This is a technique that is used in other disciplines, and is seen as a significant benefit that the journal can provide to newer researchers.

From the perspective of the readers of the journal it is hoped that this initiative will allow them to view a summary of the very latest work, and to provide a mechanism whereby contact can be made with the new researcher. The abstract will also provide the overall context for the other individual papers that are published out of the thesis. The reader of a journal or conference paper often finds it difficult to place the reported work in context or to associate the paper with other papers by the same author. For example, it is often difficult to see whether the author's papers have all been dealing with the same or different data sets. It is hoped that this publication opportunity can resolve this issue as well.

Because the field of empirical software engineering is developing at a fast rate, there is, at times, different opinion concerning the type of work that falls in this category. Authors intending to submit are encouraged to look at previous issues of the journal for guidance on subject matter. A study of faults in industrial software that looks at their incidence and cause, for example, would be appropriate. So too would be laboratory experiments of the relationships between inspection performance and methods. However, a study of compiler

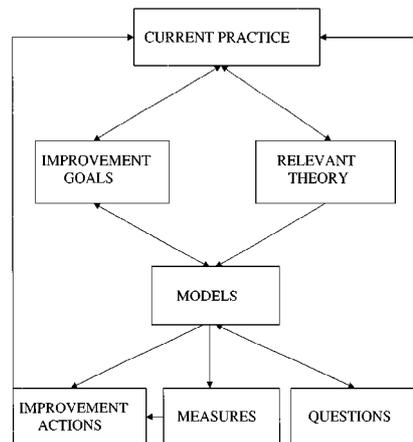


Figure. Relationships between theory, goals, improvement and measurement.

optimization may not fall in the area of research proposed for this initiative unless it is an empirical investigation. Perhaps one way of thinking about this issue is to consider the figure above. This figure shows interrelationships between theory, goals, improvement, and measurement. Many research projects in computer science and information technology could be described using this type of model. The important issue for us is the object of the research questions that derive from practice or theory. It is a narrower definition than computing in general.

These differences might be seen in the practice, the improvement goal, the theory, and/or the models. The issues of interest derive from the practice of software engineering or goals associated with that practice. Thus the relevant theory will reflect on practice in some way. The key is the relationship between the research questions and software engineering practice.

Authors may also wish to seek information concerning the objectives or style of publication from me on r.jeffery@unsw.edu.au. Authors are requested to use appropriate information from the instructions for authors, which appears in each issue of the journal when formatting their submission.

Authors should submit five copies of their final manuscript to Cheryl Knight, Empirical Software Engineering Editorial Office, Kluwer Academic Publishers, 101 Philip Drive, Norwell, MA, 02061. Telephone 617-871-6600, Fax 617-871-0449, Email Cheryl.Knight@wkap.com.

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