Review Request

You have already submitted your review. The review and the information about this request are shown below.

Your Review

Review 3	
Paper	192
Title	Estimation of Student's Programming Expertise
Authors	Eduard Kuric and Maria Bielikova
PC member	Auri Marcelo Rizzo Vincenzi
Reviewer	Marllos Prado <marllosprado@gmail.com>
Time	Jun 17, 14:15
Overall evaluation	**1**: (weak accept)
Reviewer's confidence	**3**: (medium)
Additional scores	
Nominate for best paper award	**1**: (No)
Review	
Review	This paper proposes metrics that are able to estimate the level of expertise of a developer and a way to compare and evaluate an automatic process for the comparison of metrics. The article as a whole is well written, it is assertive in the proposal description and easy to understand. The authors demonstrate good motivation for estimating the expertise of the developer. However, the first question I make relates to the context in which the study would be useful and where it was in fact assessed: considering the usefulness of estimating the expertise in the context of the industry, as shown in motivation and conclusions of the work, making the evaluation of proposed metrics through a controlled academic environment with participants who are still learning represents a strong threat to validity, particularly construct validity and external validity. The work speaks very little about these issues of validity and how it should be treated. A student-developer assessed in a controlled context, certainly has maturity, influences and reacts in a different way than a pro-developer would act in a real context. So, what is the representativeness of the study results if, in practice, the reality is different where these metrics are supposed to be used? It seems fairer to emphasize the advantages of these metrics for estimating the expertise in the academic environment (identifying students more likely to good apprenticeship positions, trainee programs, participation in research grants for example) and leave the generalization to when a case study (or even controlled) experiment is able to demonstrate similar results, applied with participants of the labor market and in a closer context to reality. Another issue which also does not seem clear is how to characterize what is the "expertise". Time, activity and complexity are very clear measures to be understood and are certainly related to expertise. But are they enough to measure the level of expertise? A flunker student may be fast, know how to build a solution in a few steps and less complex, into a problem he had experience previously, but have a much lower performance if the original problem is changed. That makes him an expert? Likewise, a good beginning student, acting with caution, curiosity or desiring to clearly express its ideas, explore various alternatives before reaching a final solution, detailing the solution more and taking longer to complete the task. That does not make him an expert? Other specific issues of the paper: In the introduction, I suggest replacing: 1:

	"...it has an impact on how quickly and successfully development task is solved" by "...it has an impact on how quickly and successfully development task is SUPPOSED TO BE solved" 2: "Despite the fact, that the various automated..." by "Despite the fact that various automated..." 3: "To ensure the assumptions we chose the academic environment...". by: "The study was carried in the academic environment with student participants...". In section ". 3 Methodology" I suggest: On the first topic, put that "It is negatively correlated with the time taken to perform a task of equal size AND COMPLEXITY" On the second topic, replace "perform them faster" by "perform in less steps" if that is what you mean. In section "4. Evaluation" instead of "2013/14" use "2013/2014" I would like you to explain better what is "penalize" in section 4. Which would be "penalties"? If the "penalty" influences outcome, what is a possible explanation for this? Finally, I question a clearer presentation of the planning and conduction of the experiment. The paper focuses on the results a lot, but considering the importance that future replications of the experiment would have in generalizing the results of this study, I believe it would be VERY important that scientific community have access to details of planning, conducting and data collected in the experiment. A package of the experiment could be made available in an online repository. This would be a valuable contribution of this work.
Confidential remarks for the program committee	

Submission Information

Submission 192	
Title	Estimation of Student’s Programming Expertise
Submission:	(Jul 01, 06:17 GMT)
Track	Short papers and posters track
Author keywords	expertise software metrics source code interaction data software development programming tasks
Abstract	Context: Despite the fact, that the various automated expertise metrics were proposed, we do not know which metrics most reliably capture/reflect expertise. Goal: To define metrics for estimation of developer's expertise based on programming tasks, to evaluate which of them most reliably capture expertise, and to propose and evaluate an automatic process to compare the metrics. Method: We define three expertise metrics with respects to such characteristics as spent time, performed activities and complexity of source code. We evaluate Spearman's correlation between our expertise metrics and students' score obtained after completion of a programming course with 251 students. Results: The best (very strong) correlation is between the metrics based on complexity of source code and the student's qualification points. Conclusions: Very strong but not perfect correlation is between our estimation of student's expertise and his/her score in the second third of the course. Approximately in the middle of the course we might be able to predict students' grades.
Submitted	May 25, 20:29 GMT
Last update	May 25, 20:29 GMT

Authors					
first name	last name	country	affiliation	Web page	corresponding?
Eduard	Kuric	Slovakia	Slovak University of Technology in Bratislava	http://www.fiit.stuba.sk/~kuric	✓
Maria	Bielikova	Slovakia	Slovak University of Technology in Bratislava	http://www.fiit.stuba.sk/~bielik/	✓

Emails

Below you will find the email exchange between you and Auri Marcelo Rizzo Vincenzi concerning this paper. All times are GMT.

Time: Jun 16, 13:47
Who: Auri Marcelo Rizzo Vincenzi->you
Subject: ESEM 2014 submission review request

Dear [*FIRST-NAME*],

I am a PC member of ESEM 2014. Could you please write
a review for me on the following paper submitted to ESEM 2014:

Number: [*NUMBER*]
Title: [*TITLE*]

The instructions on how to access the submission, accept or decline this review request, and submit your review can be found at the bottom of this letter.

I need to receive the review by ...

If you cannot review this paper, could you please suggest names and email addresses of 2-3 possible reviewers?

Best regards,
Auri Marcelo Rizzo Vincenzi <auri@inf.ufg.br>

Time: Jun 16, 14:43
Who: you->Auri Marcelo Rizzo Vincenzi
Subject: Your review request for ESEM 2014 submission 192

Ok!

Abs