Developer Productivity and Support

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Many factors have a huge impact on developers productivity, such as interruptions (Meyer et al.), the extent of enthusiasm about the job, feedback about job performance, the tools and practices they use, etc (Murphy-Hill et al.). On top of these factors, (Bragdon et al.) proposed a prototype IDE with a novel user interface called bubbles, and then conduct qualitative user evaluation with 23 developers indicates its high potential of benefits. Though their purposes differ, all of these papers focus on the productivity of developers and conduct qualitative evaluations and have detailed feedback from developers.

(Meyer 2017) mainly focuses on the daily life of a developer, i.e what applications do they use, how fragmented is their work, and how the productivity changes. As its title indicates, it mainly focuses on the perceived (subjective) productivity. While (Murphy-Hill 2019) provide some objective aspects to contextualize the productivity measure, i.e. lines of code changed per unit time and the number of changes merged into the codebase. From my point of view, Though from the data they collected, these two measurements align and are in positive correlation, the use of objective measurement is a good tool to help us find hidden factors, such as the productivity changes after a relatively long context switch because developers may not feel or perceive such changes but objective measurement will. Expanding and divide such objective measurements into finer time granularity might be a good point for research. For example, we could use the lines of code that merged into the codebase multiplies the complex of such codes as a metric to evaluate the productivity. However, finding such metrics is not a simple construction and may need peer-review for the code complexity.

Another interesting point in these two paper is that (Murphy-Hill et al.) asked about gender, and claims prior work suggests gender is related to software engineering-relevant productivity factors (Beckwith et al.). A more concrete and specific study in professional developers might help us discover whether gender affect the productivity after context switch? Besides of this, the author claims more senior developers tend to rate themselves slightly less productive and this provides a strong rationale for them to control for seniority.

There is a need for something like Code Bubbles (Bragdon et al.). In this paper, the author introduced not only the architecture, interfaces of Code Bubbles, but also the quantitative analysis and evaluation. From my aspect, this work can be extended by using objective measurements to evaluate different IDEs. For example, inspired from (Meyer et al.), we could collect the number of key strokes and mouse clicks, activities of eyes movement etc. as metrics to compare different IDEs. This would be very promising and could provide some insights to leading IDE development companies.

References

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