ANALYSIS OF SELF-ASSESSMENT SKILLS OF NOVICE SOFTWARE DEVELOPERS WORKING IN PROFESSIONAL SOFTWARE DEVELOPMENT INDUSTRY

Imdad Ahmad Mian

Enrollment No: 01-241161-006

Supervisor: Dr Raja M. Suleman

A thesis submitted to the Department of Software Engineering, Faculty of Engineering Sciences, Bahria University, Islamabad in the partial fulfillment for the requirements of a Masters degree in Software Engineering

March 2018

Abstract

Measuring and evaluating learner learning ability is always the focus of every person whose aim is to develop strategy and plans for their learners to improve learning process. There are different methods and tools to accomplish this task like classroom assessment, self-assessment through computer systems such as Intelligent Tutoring Systems (ITS) etc. One of these methods is assessment of metacognition. Metacognition has been defined as the capability to judge and monitor self-learning. On the basis of this judgment individual can suggest the changes required to improve their learning. Research has shown that learners who have the ability to monitor their cognitive skills are more proficient in managing their knowledge about some subject, by monitoring, developing and planning their activities. There has been a considerable research on the assessment of learner's metacognitive and self-assessment skills and abilities in the academic domain, but no study has been conducted to evaluate the mistakes which novice developers make because of underutilization of self-assessment abilities. The aim of this study is to assess the metacognitive skills and abilities of novice software developers working in the industry and to describe the consequences of awareness of metacognition on their performance. In this study we conducted an experiment with novice software developers and collected data using Devskiller and a self-assessment log to analyse their use of self-regulation skills. The study showed that when developers are asked to reflect upon their work, they become more informed about their habitual mistakes and using a self-assessment log helps them highlight their repetitive mistakes and experiences which allows them to improve their performance on future tasks.

Contents