Can Scrum Be used to teach students more efficiently than traditional teaching methods in schools and higher education environments?

Topic:

My essay will be on whether SCRUM can be used as an effective medium to teach students in primary and higher education. I have chosen to write about this because teaching has changed from the traditional methods of learning to more active learning activities such as having students participate in activities rather than just having them listen to a lesson or lecture. SCRUM would be an effective way to do this, it can also be applied to lessons very easily. Where in SCRUM there are customers who can change their mind about a product such as in game development. In a school or university, the lecturer can take over this role to present challenges to pupils. This engages them and helps them to learn.

Paper 1

Title: The agility of agile methodology for teaching and learning activities

Citation: [1]

Abstract: “This paper presents the review of literatures that shows the contribution of the agile methodology towards teaching and learning environment at university level. Teaching and learning at university has since migrated from traditional learning to active learning methodology where students are expected to learn by doing rather than listening passively to lectures alone. The agile methodology naturally has promoted the active participation of team members during system development phases. The nature of agile development methodology has been identified as abundantly compatible and supportive towards active academic learning. Some literature have proposed ways of adopting agile into active learning to improve teaching and learning processes and have highlighted this method as a great success. With the review presented in this paper, we would like to highlight how efficient the agile concept is in tackling several situations in academic learning as shown by an interesting mapping of agile principles to the classroom environment. With that, we hope to bring more options to improve active teaching and learning delivery by adopting agile methodology. On the other hand, few papers have used the academic environment to measure the agile principles. By highlighting this, we offer options for the agile evaluation framework to consider academic environment as a tool to obtain the agile performance feedback.”

Web Link: <http://ieeexplore.ieee.org/document/6986024/>

Full Text Link: http://ieeexplore.ieee.org/document/6986024/?part=1

Comments:

Paper 2

Title: Teaching Agile Collaboration Skills in the Classroom

Citation: [2]

Abstract: “Agile methodologies like Scrum or Extreme Programming have come a long way over the last fifteen years. Recent quantitative studies show that many companies have successfully adopted agile methodologies. It was found that in agile software development, experience leads to collaboration. It could also be shown that successful professional agile teams tend to use more collaboration practices. In 2013, the new Computer Science studies at the University of Applied Sciences were started. For this, a new curriculum was developed. This paper presents and discusses the lectures, labs and educational software projects in the programming and software engineering modules. It is discussed how agile collaboration and collaboration practices can be taught in the classroom. For this, the setup and observations of an agile student project are presented and different online collaboration tools are discussed. It is argued that software engineering education benefits significantly from embracing the modern collaboration tools the Internet has made available.”

Web Link: http://ieeexplore.ieee.org/document/7474474/

Full Text Link: http://ieeexplore.ieee.org/xpls/icp.jsp?arnumber=7474474

Comments:

Paper 3

Title: How can Scrum be adapted to an academic environment?

Citation: [3]

Web Link: http://softwareengineering.stackexchange.com/questions/147573/how-can-scrum-be-adapted-to-an-academic-environment

Comments:

Paper 4

Title: A cross-program investigation of students' perceptions of agile methods

Citation: [4]

Abstract: “Research was conducted on using agile methods in software engineering education. This paper explores the perceptions of students from five different academic levels of agile practices. Information has been gathered through the collection of quantitative and qualitative data over three academic years, and analysis reveals student experiences, mainly positive but also some negative. Student opinions indicate the preference to continue to use agile practices at the workplace if allowed. A way these findings may potentially be extrapolated to the industrial settings is discussed. Finally, this report should encourage other academics considering adoption of agile methods in their computer science or software engineering curricula.”

Web Link: http://ieeexplore.ieee.org/document/1553593/

Full Text Link: http://ieeexplore.ieee.org/document/1553593/?part=1

Comments:

Paper 5

Title: Students' perceptions of Scrum practice

Citation: [5]

Abstract: “In order to prepare students for increasing use of agile methods in industry, teaching these methods is becoming an important part of the Software Engineering curricula. At the University of Ljubljana Scrum has been systematically taught since 2009 in the framework of the software engineering capstone course. The paper describes the course content and analyses results of the survey that was performed among students with the aim of identifying those practices that students perceive most important for the success of Scrum-based software projects. Students' opinions on 12 typical practices representing possible success factors are described and compared to opinions of professional developers in order to find out similarities and differences in their perceptions. Both groups of respondents identified team-work and communication among team members, as well as good communication with the Product Owner, most important. Students also stressed the importance of strict adherence to the notion of “done”, while professional developers ranked third Sprint Planning Meetings and maintenance of Sprint Backlog. Accuracy of user stories and velocity estimation was rated least important by both groups of respondents.”

Web Link: http://ieeexplore.ieee.org/document/6240822/

Full Text Link: http://ieeexplore.ieee.org/document/6240822/?part=1

Comments:

Paper 6

Title: Using Scrum to manage student projects

Citation: [6]

Abstract: “Project work may be included in any class, but it is fundamental to software engineering courses and senior-level capstone classes. Projects expose students to the practical problems of software development, and provide dynamic and unscripted learning opportunities. However, the very nature of projects creates additional challenges for instructors. Left to themselves, most student teams will descend into crisis mode, spending inordinate amounts of time on the project in the last week or two. Such an ending is inevitably unsatisfying for both the students and the instructor. Clearly, instructor intervention is required, but what kind of intervention is appropriate? For the past two years, this author, a certified Scrum master, has been using a modified version of Scrum as an effective form of intervention.”

Web Link: http://dl.acm.org/citation.cfm?id=1289295

Full Text Link:

Comments:

Paper 7

Title:

Citation:

Abstract:

Web Link:

Full Text Link:

Comments: