APPLYING VALUE STREAM MAPPING IN MEASURING SOFTWARE TEAM PERFORMANCE THROUGH TASK MONITORING

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Abstrak

Memantau prestasi kumpulan adalah penting dalam kerja berkumpulan untuk memastikan kerjasama yang diberikan di antara ahli kumpulan adalah adil. Walau bagaimanapun , mengukur kecekapan kerja berpasukan dalam bidang pendidikan adalah sukar kerana teknik pengukuran yang sedia ada tidak mampu membuat ukuran dengan tepat. Objektif kajian ini adalah untukmengkaji bagaimana pendidik memantau dan mengukur prestasi kerja berpasukan dari segi kecekapan kumpulan dengan menggunakan teknik Value Stream Mapping (VSM). Teknik ini telah digunakan secara meluas terutamanya dalam industri kerana ia dapat mengukur kecekapan proses pembuatan dan menyediakan visual graf dengan tepat. Kajian ini terdiri daripada empat fasa. Fasa pertama memberi tumpuan kepada kajian isu-isu semasa dan teknik yang telah dikaji dalam kajian lepas . Fasa seterusnya memberi tumpuan kepada mereka bentuk Team Performance Task Monitoring (TPTM) dengan menggunakan teknik Value Stream Mapping (VSM). Fasa ini mengkaji dan menganalisis keperluan dan algoritma yang diperlukan untuk kajian fasa ini. Ia diikuti oleh satu kajian perintis yang menilai kesesuaian teknik yang dicadangkan dalam fasa ketiga. Akhir sekali, hasil kajian dan cadangan disediakan dalam fasa terakhir. Ia menyimpulkan bahawa teknik VSM adalah dapat membantu melihat kecekapan anggota pasukan dalam bidang pendidikan. Oleh itu, ia boleh membantu pelajar untuk meningkatkan prestasi mereka dalam tugasan yang akan datang. Ia juga dapat membantu pendidik untuk mengkaji semula tahap kesukaran dalam memberikan tugasan dan menyediakan pelan untuk memperbaiki kaedah pengajaran.

Keywords: Group Efficiency, Value Stream Mapping (VSM), Team Performance, Lean

Abstract

Monitoring team performance is crucial in group work to ensure equal contribution among team members. However, measuring the efficiency of the team members in educational field is difficult because the existing measurement techniques are difficult to be applied. Thus, a practical mechanism to monitor the group members' efficiency is highly needed. This study is intended to fill this gap by proposing a technique to measure the group efficiency using Value Stream Mapping (VSM).This technique was mainly used in industry because it is able to measure the efficiency of manufacturing process and visualize it. This study consists of four main phases, which are conceptual study, design Team Performance Task Monitoring (TPTM) Technique using Value Stream Mapping (VSM), evaluation of TPTM, and writing a report. A pilot study was carried out to assess the suitability of the applied technique. Finally, findings and recommendations for future research were discussed. It concluded that VSM technique is able to view the efficiency of team members in educational tasks. Thus, it can help students to improve their performance in their learning process. It also helps educators to review the level of difficulty in assigning assignment and prepare intervention plan to improve teaching methods.

Keywords: Group Efficiency, Value Stream Mapping (VSM), Team Performance, Lean

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CHAPTER ONE

INTRODUCTION

1.1 Overview of the Chapter

This chapter introduces the background of the study, research motivation, problem statement, research questions, and research objectives. The operational definition, research framework, research scope, significance of the research, and limitations of the research are also presented. The chapter ends with the outline of the thesis structure.

1.2 Background of the Study

Monitoring students' activity and performance are very important for educators to provide effective teaching and learning methods. This is to keep students involved in learning and to improve their understanding (Doctor & Iqbal, 2012). Currently, students are struggling with teamwork by using collaborative skills (Vivian, Falkner, & Falkner, 2013). One of the methods to minimize these issues is by monitoring students' task activity closely (Juan, Daradoumis, Faulin, & Xhafa, 2008). When the students' tasks can be monitored closely, educators can determine non-participating group members and balance distribution tasks and non-performing team members. In addition, it can help educators to identify the bottleneck area and thus improve team performance. The educators also face challenges in designing a course to meet current demand in software development. The course needs to provide guidelines for students, monitoring student processes for each task and the result, especially in large classes (Rong & Shao, 2012). Based on the above challenges, researchers are

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