Chapter 16

Impact of Human Interaction in Agile-Oriented Content Delivery in Learning Environments

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ABSTRACT

In this chapter, a linear process model is proposed for outcome-based education. Then an agile-based approach is presented that aims to integrate the Instruction design and student assessment to improve the quality of design and delivery. An agile process model suitable for virtual learning environments is proposed. The agile project management artifacts that include a content story, test plan, etc. are being used in the education domain. There is a need for human interaction in the teaching and learning process to improve the outcomes. The feedback generated after the student assessment process will help in improving the process of content designing and delivery in subsequent increments. The proposed agile model for the virtual learning environment is adapted for a graduate course offering. Based on the continuous assessments and feedbacks, various instructional methods are used for the delivery of the course. The results show that there is an improvement in student’s grades, learning outcomes, and there is a considerable reduction in failures and dropout rates.

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INTRODUCTION

Learning is a means of acquiring knowledge and ethical values. The major actors of the education system are the learner and the Instructor. Taxonomy of the delivery mechanisms depends on the geographical location of the teacher and the learner. The teaching method adopted in a classroom is known as face-face teaching. The primary goal of the education system is to ensure that learners gain the required outcomes. Virtual learning has become a vital element of the digital world because of its ubiquitous nature. Content can be accessed anywhere, anytime, anyplace, and from any device. The primary preamble for e-learning today is whatever is the technology used; learning is a vital element. E-Learning generally takes place in a real-time environment. It can be synchronous, asynchronous, or blended. Blended learning is supposed to be effective in the majority of courses.

Irrespective of the learning adopted, the content design and delivery have to follow a well-defined process. Several e-learning processes are available in the literature. Most of the e-learning processes are plan driven in nature where each phase is defined and frozen. The changes to the content design and delivery are not possible during development, or it requires a majority of rework. There are some agile approaches proposed, but it doesn’t give the incremental feedback for the design and delivery of e-content.

According to Sharp & Lang (2018), there is a potential of agile methods to improve the teaching and learning process. Further, there is a need for systematic research on the use of agile methods for course development. Chun’s (2004), ATLM uses agile methods for the successful delivery of technical courses. There is a need for a generic agile framework for the content delivery mechanism. D’Souza & Rodrigues (2015) presents extreme pedagogy approach to improve student learning continuously. However, there is a need to define a process satisfying these principles in learning environments.

In this chapter, the authors propose linear and agile based approaches for outcome-based education. Motivated by Agile based software development (Schawber-2001), this chapter presents templates for stories and test planning. This chapter also introduces the Agile-based process model relevant to the virtual learning environment as the traditional agile method can’t be directly applicable to the e-learning environments.

This chapter also presents a simulation of an agile model for virtual learning by changing the delivery methods based on the continuous feedback from the learners. It is to note that student performance improved from one increment to another. The analysis of learners feedback states that it increased their confidence as the course progressed. Incorporating this model may drastically reduce the dropout rate if it is used in the asynchronous mode of learning and helps to transform a passive learner to an independent learner.

The remaining part of this chapter contains the following sections. The second section specifies various approaches used in eLearning for managing quality. The third section introduces to instructional methods and assessment mechanisms. The fourth section describes the linear and agile based process models for outcome-based education. This section also presents an agile model for the virtual learning environment. This section introduces, content story template and the testing templates relevant to content delivery methods for outcome-based education. The authors also address Content and change management processes. The fifth section specifies the results achieved by realizing the agile model for the virtual learning environment, and the final section presents the conclusion and future directions.
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