Improving e-learning Programs with Six Sigma

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Abstract: We introduce a Six-Sigma based methodology designed and developed to improve the quality in the organization and implementation of VRTUOSI, a pioneer virtual exchange program between five European universities. We describe its structure and web implementation, as well as its application to improve our European E-learning programs and our online Master in Decision Systems Engineering (MDSE), emphasizing its positive effects on internationalization.

Keywords: On-line teaching, E-learning, Postgraduate, Quality Improvement, Six-Sigma

1   Introduction

Since the academic year 2010/11, we have implemented the VRTUOSI project http://www.vrtuosi.com for postgraduate students from European universities, within the Virtual Campus methodological framework of the EU Lifelong Learning Programme (LLP) http://ec.europa.eu/education/index en.htm. One of our major aims has been to provide a high quality program, since quality is an important issue within the European educational framework, as only outstanding programs will benefit from European and national funds and will call attention of a larger number of students, ensuring their survival in a very competitive environment. In this regard, we provide details of the design, development and implementation of a Six-Sigma based methodology to assess the quality in our Master degrees (Chua, 2004; Cullen et al., 2003; Harry and Schroeder, 2000). This quality management system was first implemented in our Master in Decision Systems Engineering during the five-year period 2005–2010, and it has been adapted to monitor the launching of the first edition of our VRTUOSI program.

Six-Sigma incorporates basic principles and techniques used in Business, Statistics, and Engineering. These three elements form the core part of our methodology. Six-Sigma improves the process performance, decreases variation and maintains a consistent quality of the process' output. This leads to better results and an improvement of students and stakeholders' satisfaction. The main objective of our implemented methodology is to assure the quality of the exchange

scheme, and identify potential enhancements for future editions of the implemented virtual Master and the developed courses.

The structure of the paper is as follows. Section 2 introduces the basic theoretical guidelines of the Six-Sigma based methodology we have followed in our master degrees programmes. Following, Section 3 shows how our Six-Sigma based management system can be used in practice to improve the quality of our teaching standards. Section 4 gives some practical advices for the implementation of similar programmes, and Section 5 ends up with some discussion.

Acknowledgements

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