

**ANALYSIS OF THE EFFECTIVENESS OF  
COLLABORATIVE E-LEARNING IN THE SRI LANKAN  
UNIVERSITY EDUCATION**

Ilhavanchi Kanaganayagam

(129066V)



University of Moratuwa, Sri Lanka.  
Electronic Theses & Dissertations  
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Degree of Master of Business Administration in Information Technology

Department of Computer Science and Engineering

University of Moratuwa  
Sri Lanka

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The Dissertation submitted in partial fulfilment of the requirements for the degree  
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Department of Computer Science & Engineering

University of Moratuwa  
Sri Lanka

March 2013

## **DECLARATION**

I hereby certify that this dissertation does not incorporate, without acknowledgment, any material previously submitted for a Degree or Diploma in any University and to the best of my knowledge and belief, it does not contain any material previously published or written by another person or myself except where due reference is made in the text. I also hereby give consent for my dissertation, if accepted, to be made available for photocopying and for interlibrary loans, and for the title and summary to be made available to outside organizations.

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Ilhavanchi Kanaganayagam  
MBA-IT/129066V



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The above candidate has carried out research for the Masters dissertation under my supervision. To best of my knowledge the above particulars are correct.

---

Dr. Shantha Fernando (Supervisor)  
Department of Computer Science and Engineering  
University of Moratuwa.

Date

## **ABSTRACT**

E-learning introduced new ways of learning using computer and internet, and is rapidly evolving with the development of technology. Learners can actively participate and collaborate in a learning process using either synchronous or asynchronous e-learning. Collaborative e-Learning (CeL) is an effective way of learning which also improves the processing skills, communication skills, and cognitive skills of the students.

As the first phase of this study, a literature review was done in the areas such as the usage and applications of CeL pedagogy approaches in the global and Sri Lankan context. Then, a preliminary study was conducted in the ten national universities where CeL pedagogy approached used in the academic curricula in a considerable manner. Study conducted with 30 students and 30 lecturers by interviews, phone calls and email. Interview results were analysed to identify the awareness of the effectiveness of CeL instructional models used in the Sri Lankan university education. Further, based on the literature review and the preliminary study analysis, by considering the available resources and relevant constraints of Sri Lankan universities, the definition of CeL in Sri Lankan context was defined and a framework was developed to analyse the effectiveness of CeL in Sri Lankan university education. Finally, based on the framework, the effectiveness of CeL in the Sri Lankan national university education was analysed as quantitative analysis by using SPSS Statistics tool. The modelled framework was validated by the final hypothesis analysis and the best predictors of ‘effectiveness of CeL’ were identified by the step-wise multiple regression analysis. Further, this thesis describes the discussion regarding the data analysis, conclusions derived from the findings and the recommendations to improve the effectiveness of CeL in Sri Lankan universities. Recommendations were considered for the students, lecturers and the administration of the universities.

The population for this research study is the lecturers, assistant lecturers, undergraduate students and post-graduate students of 15 Sri Lankan National universities where the CeL model is used in the academic curricula. Even though the final analysis was conducted among the national universities, due to the lack of usage of CeL pedagogy approaches in some universities and lack of response rate from some other universities, the final analysis was limited with three universities to maintain the reliability in the results. The three universities were, University of Moratuwa, University of Colombo and University of Peradeniya.

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K. Ilhavanchi

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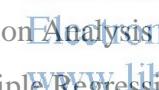
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## List of Abbreviations

CeL	- Collaborative e-Learning
TCL	- Traditional Classroom Lecturing
IT	- Information Technology
ICT	- Information and Communications Technology
CSCL	- Computer Supported Collaborative Learning
CSCW	- Computer Supported Cooperative Work
LMS	- Learning Management System
LCMS	- Learning Content Management System
SEL	- Social Emotional Learning
UCSC	- University of Colombo, School of Computing
JICA	- Japan International Cooperation Agency
CD-ROM	- Compact Disc Read-Only Memory
ZPD	- Zone of Proximal Development
eLQCC	- E-Learning Quality Certification Center
G.C.E. A/L	- General Certificate of Education, Advanced Level
UGC	- University Grants Commission
SPSS	- Statistical Package for Social Sciences



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