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SRI LANKA

STUDY ON USE OF INFORMATION AND COMMUNICATION TECHNOLOGIES (ICTS) IN TEACHING AND LEARNING PROCESS AT TECHNICAL COLLEGES

MASTER OF SCIENCE DEGREE IN OPERATIONAL RESEARCH
DEPARTMENT OF MATHEMATICS
FACULTY OF ENGINEERING

H.R.W.P.GUNATHILAKE

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DISSERTATION

SUBMITTED BY

H.R.W.P.GUNATHILAKE

SUPERVISED BY

PROF.G.T.F.DE SILVA

University of Moratuwa, Sri Lanka.
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AND

DR. M.INDRALINGAM

FOR THE PARTIAL FULFILLMENT OF
THE REQUIREMENT FOR THE AWARD OF
MASTER OF SCIENCE DEGREE IN OPERATIONAL RESEARCH

DEPARTMENT OF MATHEMATICS
FACULTY OF ENGINEERING
UNIVERSIYT OF MORATUWA
SRI LANKA

NOVEMBER 2004

TO

MY PARENTS

TEACHERS

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AND

LECTURERS

DECLARATION

I certify that this dissertation does not incorporate any material previously submitted for any 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 or orally communicated by another person except where due reference made in this text.

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To the best of our knowledge above particulars are correct.

UOM Verified Signature

Prof. G.T F De Silva
Supervisor
Department of Mathematics
Faculty of Engineering
University of Moratuwa
Sri Lanka

.....

Dr. M.Indralingam
Supervisor
Department of Mathematics
Faculty of Engineering
University of Moratuwa
Sri Lanka

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ABBREVIATIONS

OHP	Over Head Projector
MCQ	Multiple Choice Questions
CAD	Computer Aided Drafting
A/L	Advanced Level
A	Agree
ADB	Asian Development Bank
CPSC	Colombo Plan Staff College for Technical Co-operation
CD - ROMS	Compact Discs Read Only Memory
CAA	Computer Assisted Assessment
CAL	Computer Assisted Learning
CAI	Computer Assisted Training
CAT	Computer Assisted Training
CBI	Computer Based Instructions
CBL	Computer Based Learning
CBT	Computer Based Training
CMI	Computer Managed Instructions
CML	Computer Managed Learning
CMT	Computer Managed Training
CAI	Computer Assisted Instruction
CAV	Constant Angular Velocity
DA	Disagree
ICT	Information and Communication Technology
IT	Information Technology
ISD	Institute for Studies in Education
ISD	Instructional Systems Design
ILS	Integrated Learning Systems
ISTE	International Society of Technology in Education's
JICA	Japan International Co-operation Agency
LA	Little Agree
NCAT	National Certificate in Accounting Technicians
NCCA	National Certificate in Computer Applications
NCDA	National Certificate in Draughtsmanship Apprenticeship
NCIT	National Certificate in Industrial Technicians
OMR	Optical Mark Reader
SA	Strongly Agree
SD	Strongly Disagree
WWW	World Wide Web

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ABSTRACT

Technical education system produces technical manpower of different competency profiles. The pass outs mainly work in industrial, business and training institutions. Some students become entrepreneurs by setting up their own enterprise. The courses offered by the technical colleges need to be market driven. The teaching and learning process is the core function of the technical colleges. In the modern world that changes rapidly with the evolution of new technologies, the ways of training should be modernized with the emerging trends of ICT. So this study aims to ascertain the ***use of ICT for the teaching and learning process at technical colleges***.

The objectives of this study are:

- To study the present level of using ICT for teaching and learning process at technical colleges.
- Identify the activities of the teaching learning and process that ICT can be used and the ways in which ICT can be incorporated into these activities.
- To identify the advantages of using ICT over the existing methods used for the teaching and learning process.
- To identify the difficulties in using ICT for teaching and learning process at technical colleges and to propose suitable solutions to overcome these difficulties.

The study was carried out mainly through questionnaire survey and interviews to achieve the above objectives. It provided the opportunity to identify the present status of using ICT for the teaching and learning process. It also helped to identify the future trends in technical education through ICT.

The major two problems identified are the lack of resources and the lack of competence of academic staff members in using ICT for the teaching and learning process. The two suggestions forwarded are to initiate instructional resource centers and to introduce pedagogical license on ICT usage to encourage the academic staff on using ICT for teaching and learning.

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The major future trends ICT usages are on interactive technical education programs on Internet and World Wide Web. The need for using new technologies in technical education with the potential of ICT such as web based learning and e-learning are identified as the ways of providing the technical education to a larger target group than present traditional methods.

Finally this study provided the opportunity to come up with recommendations which will be useful for enhancing the teaching and learning process by integrating ICT. This study aimed at only one function of technical colleges; its leaching and learning process. Therefore further studies should be carried out on the ways of using ICT for other functions at technical colleges such as administrative, quality assurance, career guidance and student counseling, social marketing, curriculum development, student evaluation etc. It will be much helpful to provide market driven technical education for the youngsters of our nation to meet the challenges in the twenty first century.

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