

A GUIDE TO
NEW ACADEMIA
LEARNING INNOVATION



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

NALI

A GUIDE TO

**NEW ACADEMIA
LEARNING INNOVATION**

**Professor Dr. Rose Alinda Alias
Professor Dr. Baharuddin Aris**

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Baharuddin Aris

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FOREWORD

UTM Deputy Vice Chancellor (Academic & International)

Assalamualaikum and Greetings!

I am thankful that with the grace of our creator the Almighty Allah SWT and through the cooperation of dedicated lecturers with UTMLead, this New Academia Learning Innovation (NALI) Guide Book was completed in time for the launch of the International University Carnival on eLearning (IUCEL) 2016 in UTM on 20th September 2016. Many requests were made for a book that guides instructors on implementation of the New Academia Learning Innovation (NALI) model ever since we introduced it in 2013 in the "Akademia Baru Inovasi Pembelajaran" book. The whole idea of modern instruction is based on this as learning emphasis shifts more and more from the all-knowing instructor perspective to student-centred learning towards nurturing an entrepreneurial academia. This guideline is UTM's contribution to the Scholarship of Teaching and Learning as an invaluable resource based on UTM's NALI implementation and research. Instructors should find this book useful to support their continuous efforts in improving learning. The book is a step in realising goals of UTM towards producing holistic, entrepreneurial and balanced graduates who hold the keys to a brighter future for the nation.

The diligent contribution of many authors and the editorial board members in making the dream of this first edition a reality is very much appreciated. I hope that this book will guide instructors in transforming their learning and teaching practices towards an era of 21st century learning.

Wishing all of you continuous success in your learning and teaching endeavours!

Professor Dr. Rose Alinda Alias

Deputy Vice Chancellor (Academic & International)

Universiti Teknologi Malaysia (UTM)

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LIST OF ACRONYMS

BLOSSOMS – Blended Learning Open Source Science or Math Studies

CEO – Chief Executive Officer

CGCC – Centre for General Courses and Co-Curriculum

CICT – Centre of Information and Communication Technology

CT – Concept Test

CTL – Centre for Teaching & Learning

GLC – Government-Linked Company

IBS – International Business School

ICC – Innovation & Commercialisation Centre

IT – Information Technology

LMS – Learning Management System

MIT – Massachusetts Institute of Technology

NGO – Non-Governmental Organization

OBE – Outcome Based Education

OCW – Open Courseware

OCWC – Open Courseware Consortium

OER – Open Educational Resources

PI – Peer Instruction

SBL – Scenario Based Learning

SCL – Student-Centered Learning

SL – Service Learning

CHAPTER 1: NALI MODEL

Centre for Teaching and Learning (CTL), UTMLead has been given a great responsibility to carry out initiatives under the New Academia Learning Innovation (NALI). NALI emphasises the concept of entrepreneurship. By entrepreneurship, we refer to the context of learning that is more productive, creative and innovative (Zaini, 2012). Figure 1.1 shows the model of NALI. There are two modes under NALI - Pedagogy/ Andragogy and Digital Resources, all of which contains 15 projects.

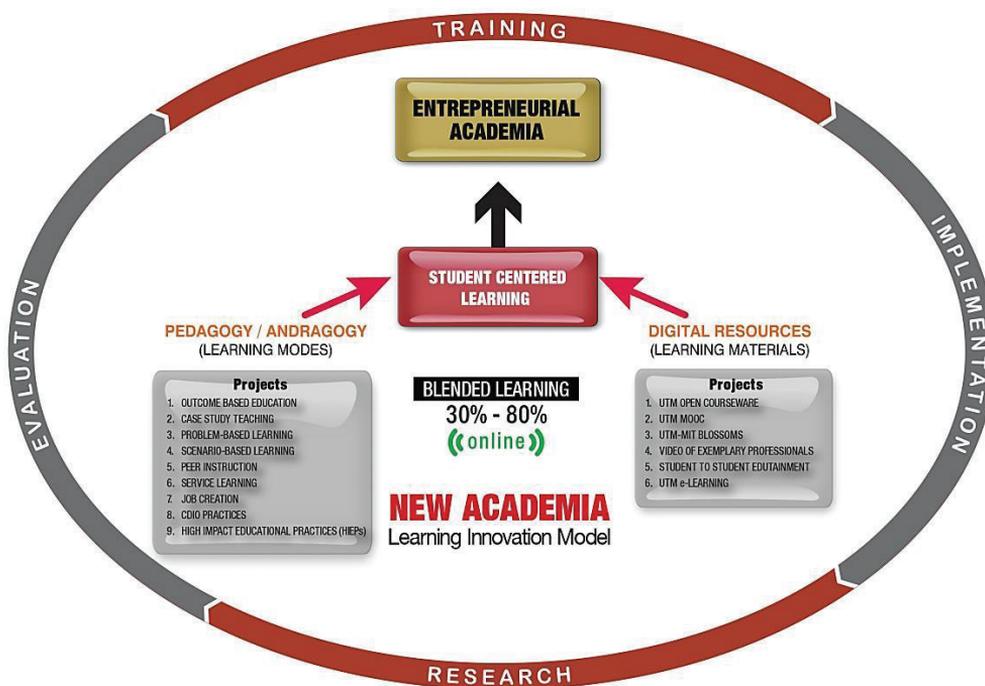


Figure 1.1: Model of New Academia Learning Innovation (NALI)

In support of the national e-Learning policy or 'Dasar e-Pembelajaran Negara (DePAN)', UTM through NALI runs courses that implement blended learning approaches. Blended learning is defined as the practice of combining both online and face-to-face learning experiences, where 30 % to 80 % of the course content is delivered online. Face-to-face learning covers Case study, Problem Based Learning, Scenario Based Learning, Peer Instruction, Service Learning, Job Creation, CDIO and OBE practices. Digital learning involves the use or the development of internet and video materials in the forms of Open Courseware, UTM MOOC, BLOSSOMS, Video of Exemplary Professionals, Student to Student Edutainment, and UTM e-Learning.

Figure 1.2 shows the homepage screen view of the university's NALI website. More information on NALI is available through the site link: <http://ctl.utm.my/nali/>



Figure 1.2: Homepage Screen View of NALI website: <http://ctl.utm.my/nali/>

The main objectives of the NALI initiative are:

1. To align UTM teaching and learning models, activities, materials, environments and systems with the Malaysian National Higher Education Strategic Plan, the needs of employers and the requirements of accreditation bodies,
2. To emulate best teaching and learning practices from the World's best universities,
3. To develop UTM's own identity related to teaching and learning models, activities, materials, environments and systems,
4. To create meaningful and interactive learning activities, materials, environments and systems appropriate to UTM Graduate Student Attributes.

CHAPTER 2: SCL AND BLENDED LEARNING

Student-centered Learning (SCL) and Blended Learning underpin UTM New Academia Learning Innovation Model. Many view SCL as the concept of students being active versus passive learners and Blended Learning integrates multiple learning modes and materials.

UTM NALI initiatives to enrich Teaching and Learning (T&L) are based on well-known and best teaching and learning practices which have been proven to be effective. These best practices include for example Case Study Teaching, Problem-based learning and Peer Instruction. In order to create memorable learning experiences among learners, meaningful and interactive learning experiences, which are motivating and able to engage students in relatively higher levels of concentration throughout the lecture, are required. Therefore, a systematic incorporation of active learning strategies and digital learning materials into lectures is required to minimise many of the weaknesses of traditional lectures. In addition, online systems and learning environments will also help support student centred learning. It is therefore, NALI model is structured into 2 modes, namely:

- Learning Mode (Pedagogy/Andragogy) and
- Learning Materials (Digital Resources).

Under Learning Mode (Pedagogy/Andragogy), there are:

- Outcome-Based Education (OBE)
- Case Study Teaching
- Problem-Based Learning (PBL)
- Scenario Based Learning (SBL)
- Peer Instruction
- Service Learning
- Job Creation
- High-Impact Educational Practices (HIEPs)
- Conceive, Design, Implement and Operate (CDIO)

Under Learning Materials (Digital Resources), there are:

- UTM Open Courseware (OCW)
- UTM MOOC
- UTM-MIT BLOSSOMS
- Video of Exemplary Professionals
- Student-to-Student Edutainment
- UTM e-Learning

CHAPTER 3: LEARNING MODES

New Academia Learning Innovation (NALI) consists of 9 learning Modes (Pedagogy/Andragogy) which are:

- Outcome-Based Education (OBE)
- Case Study Teaching
- Problem-Based Learning (PBL)
- Scenario Based Learning (SBL)
- Peer Instruction
- Service Learning
- Job Creation
- High-Impact Educational Practices (HIEPs)
- Conceive, Design, Implement and Operate (CDIO)

3.1 OUTCOME BASED EDUCATION

Yahya Samian, Yeo Kee Jiar, Hayati Abdullah, Istas Fahrurrazi Nusyirwan, Norihan Abu Hassan

3.1.1 Introduction

Outcomes in learning refer to what learners are able to demonstrate at the end of the learning experience. Learning outcomes are outcomes that are expected from a certain subject and these are assessed and evaluated through various measurement tools. Outcome-Based Education (OBE) is a method of curriculum design and instruction that is focused on the outcome of the instruction, that is, the competencies a learner achieves after instruction (Chong, 2008). OBE involves the restructuring of the curriculum, assessment and reporting practices in education to reflect the achievement of high order learning and mastery rather than the accumulation of course credits (Tucker, 2004). Thus, the primary aim of OBE is to facilitate desired changes within the learners, by increasing knowledge, developing skills and/or positively influencing attitudes, values and judgment. OBE embodies the idea that the best way to learn is to first determine what needs to be achieved. Once the end goal (product or outcome) has been determined the strategies, processes, techniques, and other ways and means may be put into place to achieve the goal. Therefore, the OBE system is one in which outcomes drive the whole course content and assessment structure; and a central aspect of OBE is the alignment of learning outcomes, teaching and learning processes and assessment.