

**DEVELOPMENT AND EVALUATION OF AN ELECTRONIC
PROTOTYPE FOR PEDAGOGICAL SKILLS
ENHANCEMENT OF EDUCATORS IN
MALAYSIAN HIGHER LEARNING
INSTITUTIONS**

AMUTHA A/P D. M. NAVAMONEY

ASIA e UNIVERSITY

2018

**DEVELOPMENT AND EVALUATION OF AN ELECTRONIC
PROTOTYPE FOR PEDAGOGICAL SKILLS
ENHANCEMENT OF EDUCATORS IN
MALAYSIAN HIGHER LEARNING
INSTITUTIONS**

AMUTHA A/P D. M. NAVAMONEY

**A Thesis Submitted to Asia e University in
Fulfillment of the Requirements for the
Degree of Doctor of Philosophy**

September 2018

ABSTRACT

This study was aimed at investigating how electronic learning prototype could be employed as an alternative training support of educators in Malaysian higher education for improving their pedagogical knowledge and skills. It explores the benefits of e-learning platform to facilitate higher learning educators and to mitigate growing challenges faced by educators in enhancing their pedagogical skills. The theoretical framework model of this study was guided by constructivism and connectivism learning theories along with activity theory and other theories such as adult learning theory, experiential and transformation theory. The activity theory guided the design-based research (DBR) by Reeves (2000, 2006) which is adapted in this study as its research methodology. This design-based research is carried out in eight phases: analysis, design, validation, development, implementation, evaluation, impact and continuous learning. The analysis and design phases obtain the perspectives of 8 experts comprises educators, manager, learning designers cum trainers and system administrator. In analyse phase the needs and challenges faced by educators in professional development for pedagogical skills enhancement were analysed and also identified the benefits and acceptance of an electronic prototype as an alternative solution for professional development. In design phase experts were to giving their inputs on learning strategies, elements, tools and system specifications for designing an electronic prototype. In validation and development phase, experts used ACTA techniques to validate the prototype. During the implementation and evaluation, 43 educators from higher education participated in the training course offered by the prototype. Two surveys were conducted immediately after the completion of the course. The result indicated that all educators agreed that they are ready and motivated to use technology in teaching and learning. Further, educators'

age, gender and teaching experience have no influence over their performance expectancy, effort expectancy and self-efficacy. However, the performance effort expectancy and self-efficacy have significant towards educators' behavioural intention of using the prototype as self-directed and lifelong learning platform. The study also reported that the Secondary Influence, Environment and Ability variables have influence over the Motivation variables. Hence, electronic training can be scalable and sustainable alternative learning system for continuous professional development.

APPROVAL PAGE

I certify that I have supervised / read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in quality and scope, as a thesis for the fulfillment of the requirements for the degree of Doctor of Philosophy.

Dr Yusup Bin Hashim
Adjunct Professor
Asia e University
Supervisor

Examination Committee

Prof Dr Maizam Alias
Faculty of Technical and Vocational Education

Universiti Tun Hussein Onn Malaysia
Examiner

Dr Zahra Naime
Senior Lecturer, Faculty of Dentistry

University Malaya
Examiner

Prof Dr John Arul Philips
Dean, School of Education & Cognitive Science
Asia e University
Examiner

Prof Dr Siow Heng Loke
Dean, School of Graduate Studies
Asia e University
Chairman, Examination Committee

This thesis was submitted to Asia e University and is accepted as fulfillment of the requirements for the degree of Doctor of Philosophy.

Prof Dr John Arul Phillips
Dean, School of Education

Prof Dr Siow Heng Loke
Dean, School of Graduate Studies

DECLARATION

I hereby declare that the thesis submitted in fulfillment of the PhD degree is my own work and that all contributions from any other persons or sources are properly and duly cited. I further declare that the material has not been submitted either in whole or in part, for a degree at this or any other university. In making this declaration, I understand and acknowledge any breaches in this declaration constitute academic misconduct, which may result in my expulsion from the programme and/or exclusion from the award of the degree.

Name of Candidate: **AMUTHA A/P D. M. NAVAMONEY**

Signature of Candidate: *Amutha Navamoney*

Date: **7th September 2018**

ACKNOWLEDGEMENT

All praise is due to the Supreme Almighty for his wisdom, guidance and the willpower he generously bestowed on me to complete this doctoral thesis. This long journey of completion of this thesis was supported by many kind-hearted people around me.

I would like to express my special thanks to my supervisor, Prof. Dr Yusup Hashim, for his kindness and support. My sincere gratitude to Dr Rafiza Abdul Razak who has provided guidance became a friend, made my lonely journey a meaningful one. Thank you very much for your time, effort and sharing.

Words are not enough to express my gratitude and love toward my amazing family who have supported and encouraged me at each and every step along the way. To my husband (Ravi Krishnan), my daughters (Vennusha Priyaa and Yaishnavee) and my son (Sureadeva) and my in-laws: thank you for the unconditional love and support. To my friends and colleagues: thank you for the soothing and motivating words that kept me going.

This journey had many perils and triumphs. The journey was not limited to acquiring new skills and knowledge, rather discovering myself, people, culture and politics in general. I have learnt that experience is the best teacher and this research study would be my new beginning.

TABLE OF CONTENTS

	Page
ABSTRACT	ii
APPROVAL PAGE	iv
DECLARATION PAGE	v
ACKNOWLEDGEMENT	vii
LIST OF TABLES	xiii
LIST OF FIGURES	xvi
CHAPTER	
1.0 INTRODUCTION	1
1.1 Introduction	1
1.2 Background of the Study	2
1.3 Statement of the Problem	9
1.4 Purpose of the Study	17
1.5 Research Objectives	19
1.6 Research Questions	21
1.7 Rationale of the Study	25
1.8 Significance of the Study	27
1.9 Limitation of the Study	30
1.10 Operational Definition	33
1.11 Summary	36
2.0 REVIEW OF LITERATURE	37
2.1 Introduction	37
2.2 Malaysian Higher Education System	37
2.2.1 Higher Education Blueprint	38
2.2.2 The New Higher Education System (Transformation)	38
2.2.3 The 10 Shifts	39
2.2.4 The Roadmap	41
2.3 Pedagogical Skills Enhancement of Educators	43
2.3.1 Pedagogical competency	45

2.3.2	Higher Education Teacher Competencies	47
2.3.3	The Need for Pedagogical Competence	49
2.3.4	Pedagogical Content Knowledge	50
2.3.5	Pedagogical Roles and ICT Competencies	52
2.4	Professional Development	54
2.4.1	Teaching Efficacy	57
2.4.2	Teaching Motivation (Transfer Knowledge)	58
2.4.3	Professional development and professional knowledge and competence	59
2.4.4	Teacher belief and professional knowledge and competence	61
2.5	Theoretical Perspectives of Electronic Learning for Pedagogical Skills Enhancement of Educators in the current study	62
2.5.1	Activity Theory	62
2.5.2	Constructivism	65
2.5.3	Connectivism	68
2.5.4	Cognitive Load Theory	71
2.5.5	Adult Learning (Andragogy)	73
2.5.6	Experiential Learning	79
2.5.7	Transformative Learning	86
2.6	Theoretical Framework of the Study	87
2.7	Technology and Teaching and Learning in Higher Education	89
2.8	Technology and Electronic Prototype for Pedagogical Skills Enhancement	91
2.9	Pedagogical Skills Enhancement in Professional Development	94
2.10	Current Needs and Challenges in Pedagogical Skills Enhancement of Educators	96
2.11	Strategies for Pedagogical Skills Enhancement of Educators in Higher Education	99
2.12	Using Electronic Learning Application for Pedagogical Skills Enhancement of Educators	101
2.13	Electronic Prototype for Pedagogical Skills Enhancement of Educators	104
2.14	Instructional Methods in Electronic Prototype for Pedagogical Skills Enhancement of Educators	106
2.14.1	Self-Directed Learning	106
2.14.2	First Principles of Instruction	107
2.14.3	Nine Events of Instruction	111

2.15	The Electronic training system as a solution for real-life learning problems	117
2.15.1	Activity Theory Model	121
2.15.2	Evaluation Models for Electronic Learning	126
2.15.3	Unified Theory of Acceptance and Use of Technology (UTAUT)	127
2.16	Training and Motivation to Transfer Training	129
2.16.1	Learning Transfer System Inventory (LTSI)	130
2.16.2	Importance of the environment, Transfer Achieved, and Performance Improvement (ITAPI)	134
2.17	Conceptual Framework for the study	135
2.18	Conclusion	140
3.0	METHODOLOGY	142
3.1	Introduction	142
3.2	Research Design	142
3.2.1	Applying Design-Based Research Model	144
3.3	Research Samples, Instruments, Data Collection and Data Analysis	152
3.3.1.	Phase 1 & 2: Analysis and Design	152
3.3.2	Phase 3&4: Validation and Development	162
3.3.2.1	Phase 3 of DBR – Validation of prototype design	170
3.3.2.2	Phase 4 of DBR – Validation of prototype development	175
3.3.3	Phase 5&6: Implementation and Evaluation	182
3.3.4	Phase 7&8: Impact and Continuous Learning	197
3.4	Research Matrix	202
3.5	Conclusion	205
4.0	THE DESIGN AND DEVELOPMENT OF THE ELECTRONIC PROTOTYPE	207
4.1	Introduction	207
4.2	Rationale for Developing an Electronic Prototype for Pedagogical Skills Enhancement of Educators	208
4.3	The Importance of Professional Development for Educators	209
4.4	The benefits of Electronic Learning as Professional Learning for Educators	211
4.5	How the Prototype is Different from the Existing Platforms	214
4.6	The Theoretical Basis for the Prototype	216

4.7	The Design Interfaces of the Electronic Prototype	227
4.8	The Development of the Electronic Prototype	240
4.8.1	Infrastructure Requirements	240
4.8.1.1	Software Requirements	240
4.8.1.2	Database Requirements	244
4.8.1.3	Hardware Requirements	244
4.9	The Description of the Electronic Prototype	245
4.10	The Prototype System with Relevant Snapshots	250
4.11	Conclusion	257
5.0	FINDINGS OF THE STUDY	258
5.1	Introduction	258
5.2	Data Analysis of Phase 1 & 2: Analysis and Design	261
5.2.1	Research Question 1	261
5.2.2	Research Question 2	266
5.2.3	Research Question 3	271
5.3	Data Analysis of Phase 3&4: Validation and Development	276
5.3.1	Research Question 4	276
5.3.2	Research Question 5	287
5.4	Data Analysis of Phase 5&6: Implementation and Evaluation	298
5.4.1	Research Question 6	301
5.4.2	Research Question 7	316
5.5	Data Analysis of Phase 7&8: Impact and Continuous Learning	322
5.5.1	Research Question 8	322
5.6	Conclusion	317
6.0	DISCUSSION, IMPLICATION AND RECOMMENDATION	326
6.1	Summary of the Findings	326
6.1.1	Discussion of Findings: Phase – 1 & 2: Analysis and Design	327
6.1.2	Discussion of Findings: Phase – 3 & 4: Validation and Development	329

6.1.3	Discussion of Findings: Phase – 5 & 6: Implementation and Evaluation	333
6.1.4	Discussion of Findings: Phase – 7 & 8: Impact and Continuous Learning	341
6.2	Implication and Recommendations	343
6.2.1	Theoretical Implications and Recommendations	343
6.2.2	Practical implications and Recommendations	349
6.2.2.1	Practical Implications and Recommendations for the Ministry of Education (MOE) and Higher Education Institutions	350
6.2.2.2	Practical implications and recommendations for Professional Development Institutions and Educational Trainers	352
6.2.2.3	Practical implications and recommendations for Higher Learning Educators	353
6.3	Recommendation for Future Research	355
6.4	Conclusion	356
	REFERENCES	358
	APPENDICES	396

LIST OF TABLES

		Page
Table 2.1	Areas of highest interest in professional development for pedagogical skills enhancement	97
Table 2.2	Clark and Mayer's Principles for e-learning aligned with Merrill's First Principles	111
Table 2.3	Steps involved in development and evaluation of the electronic prototype	121
Table 3.1	Type of expert groups and the number of experts participated during the analysis and design phases	156
Table 3.2	Profiles of experts' participated during analysis and design phase	157
Table 3.3	Themes used for building the semi-structured interview questions	158
Table 3.4	Profiles of experts' participated in the validation and development stage	164
Table 3.5	The expert knowledge areas and essential competencies needed by experts during the validation and development phases	164
Table 3.6	Sample questions posed under each theme identified for the task diagram interviews during the validation process of prototype design	172
Table 3.7	Questions probed in Knowledge Audit Technique for the prototype design	173
Table 3.8	Questions asked in Task Simulation technique for the prototype design	174
Table 3.9	Sample questions posed under each theme identified for the task diagram interviews during the re-validation process of prototype development	177
Table 3.10	Questions probed in Knowledge Audit Technique for Prototype Development	178
Table 3.11	Questions asked in Task Simulation technique	179
Table 3.12	Numbers of educators (users) who have participated in Stage 5 (implementation) to Stage – 8 (continuous learning)	184
Table 3.13	UTAUT Factor Descriptions for the Prototype System	187
Table 3.14	The UTAUTs factors definition for this study	188
Table 3.15	An Overall Reliability Assessment for UTAUT instrument	190

Table 3.16	Training Scales of LTSI used in evaluating learning with the electronic prototype and sample questions.	191
Table 3.17	An Overall Reliability Assessment for LSTI instrument	194
Table 3.18	Training Scales of ITAPI used in evaluating learning with the electronic prototype and sample questions.	198
Table 3.19	An Overall Reliability Assessment for ITAPI instrument	200
Table 3.20	Research matrix among research objectives, samples, data collection methods and instruments used based on stages in DBR	204
Table 4.1	Mapping Of Activity Theory Model with Principles, Theories and Models That Underpinned the Electronic Prototype Design, Development and Evaluation Phases of DBR	223
Table 5.1	Description of the final compilation of feedbacks from experts during re-designs recommendations (Cognitive Demand) session	284
Table 5.2	Description of the final compilation of feedbacks from experts during re-development recommendations (Cognitive Demand) session	295
Table 5.3	Educators' personal demographic characteristics: Age range and Gender (n = 43)	299
Table 5.4	Educators' Professional Characteristics: department, experience, working status, position, readiness and motivation (n = 43)	300
Table 5.5	Educators' responses on their Readiness to use Technology in Teaching and Learning	303
Table 5.6	Spearman's Correlation between Performance Expectancy (PE) and Behavioural Intention (BI)	304
Table 5.7	Summary of Linear Regression on Performance Expectancy (PE)	305
Table 5.8	Spearman's Correlation between Effort Expectancy with Attitude towards Technology (EE-AT) and Behavioural Intention (BI)	306
Table 5.9	Summary of Linear Regression on Effort Expectancy with Attitude towards Technology (EE_AT)	306
Table 5.10	Spearman's Correlation between and Self-Efficacy (SE) and (Behavioural Intention (BI))	308
Table 5.11	Summary of Linear Regression on Self-Efficacy (SE)	308

Table 5.12	Results of t-test and Descriptive Statistics for Performance Expectancy, Effort Expectancy with Attitude towards Technology and Self-Efficacy by Age	310
Table 5.13	Results of t-test and Descriptive Statistics for Performance Expectancy and Effort Expectancy with Attitude towards Technology by Gender	312
Table 5.14	Results of t-test and Descriptive Statistics for Performance Expectancy, Effort Expectancy with Attitude towards Technology and Self-Efficacy by Years' Experience	314
Table 5.15	Results of t-test and Descriptive Statistics for Effort Expectancy with Attitude towards Technology by Motivation to use Technology in Teaching and Learning	316
Table 5.16	Spearman's Correlation between Motivation variables and Secondary Influence variables	318
Table 5.17	Summary of Linear Regression on Secondary Influence variables	319
Table 5.18	Spearman's Correlation between Motivation variables and Environment variables	320
Table 5.19	Summary of Linear Regression on Environment variables	321
Table 5.20	Spearman's Correlation between Motivation variables and Ability variables	322
Table 5.21	Spearman's Correlation between Motivation variables and Ability variables	323
Table 5.22	Spearman's Correlation between Work Environment and Transfer Achieved and Performance Importance.	325
Table 5.23	Summary of Linear Regression on Transfer Achieved and Performance Importance	325

LIST OF FIGURES

		Page
Figure 1.1	Phases of the National Higher Education Strategic Plan	2
Figure 2.1	The 10 Shifts	41
Figure 2.2	Three waves of Malaysian Education Blueprint (MEB) roadmap	42
Figure 2.3	Activity Theory or System adopted from Engestrom (2001) and Zurita & Nussbaum, (2007)	65
Figure 2.4	Knowles's 5-step model of self-direction of Learning Activities	76
Figure 2.5	The Experiential Learning Cycle - structured experiences based on Pfeiffer & Ballew's (1988)	80
Figure 2.6	Theoretical Framework	87
Figure 2.7	Coursera (https://www.coursera.org/courses)	92
Figure 2.8	EdX (https://www.edx.org/course...)	93
Figure 2.9	Four (4) aspects to a Self-Directed Learning Model	107
Figure 2.10	The First Principles of Instruction (Merrill 2002; 2006; 2007)	109
Figure 2.11	Gagne's Nine Events of Instruction mapping with Merrill's First Principles	117
Figure 2.12	An illustration on how the principles of Activity theory are used to design and develop an electronic prototype environment	122
Figure 2.13	The unified theory of acceptance and use of technology (UTAUT), Venkatesh (2003)	128
Figure 2.14	Holton's Evaluation Model	132
Figure 2.15	HRD Evaluation Research and Measurement Model	133
Figure 2.16	Proposed research model based on literatures (Holton et. al., 2000, 2007; Knowles, M. S., 2005; Hutchins et. al., 2013)	134
Figure 2.17	The Conceptual Framework for the Study	139

Figure 3.1	Research Design Adopted from Reeves Design Based Research Model (2000, 2006)	144
Figure 3.2	Phases of the Development and Evaluation of an Electronic Prototype for Pedagogical Skills Enhancement of educators in Malaysian Higher Learning Institutions	145
Figure 3.3	Design Principle of the Proposed Electronic Prototype	147
Figure 3.4	An outline of how Reeves (2000, 2006) Design-Based Research (DBR) model provided a base for the research approach and design of the study 1988; Merrill's First Principles of Instruction, 2001, 2009)	151
Figure 3.5	Operational Structures of Analysis and Design Phases	161
Figure 3.6	The 4-stages of ACTA technique as recommended by Militello, Hutton, Pliske, Knight, & Klein (1997)	167
Figure 3.7	ACTA technique adopted for validating the prototype design of pedagogical-based professional development	170
Figure 3.8	ACTA technique adopted for validating the prototype development of pedagogical-based professional development	175
Figure 3.9	Operational Structures of Validation and Development Phases	181
Figure 3.10	Modified Unified Theory of Acceptance and Use of Technology (UTAUT), from Venkatesh, et. al. (2003)	187
Figure 3.11	The learning transfer system inventory model adapted from Holton, Bates and Ruona (2000).	193
Figure 3.12	Operational Structures of Implementation and Evaluation Phases	196
Figure 3.13	The Importance of the Work Environment, Transfer Achieved and Performance Improvement (ITAPI) inventory adapted from Holton et al (2000, 2001)	199
Figure 3.14	Operational Structures of Impact and Continuous Learning Phases	201

Figure 4.1	Mapping of activity theory with the Analysis and Design phases of DBR	218
Figure 4.2	Mapping of activity theory with the Validation and Development Phases of DBR	219
Figure 4.3	Mapping of activity theory with the Implementation and Evaluation Phases of DBR	220
Figure 4.4	Mapping of activity theory with the Impact and Continuous Learning Phases of DBR	221
Figure 4.5	The System Architecture of The Electronic Prototype	226
Figure 4.6	The landing page screen design interface of the prototype	228
Figure 4.7	The sign-up screen interface design	229
Figure 4.8	The login screen interface design	230
Figure 4.9	A quick tour video screen interface design	231
Figure 4.10	The course selection screen interface design	232
Figure 4.11	The course description screen interface design	232
Figure 4.12	The Activation phase screen interface design	234
Figure 4.13	The Demonstration phase screen interface design	235
Figure 4.14	A sample pop-up document: A step by step guidance for planning a flipped classroom	236
Figure 4.15	The Application phase screen interface design	237
Figure 4.16	The Integration phase screen interface design	238
Figure 4.17	The performance screen interface design	239
Figure 4.18	Overall System Layout of the Electronic Prototype Portal	246
Figure 4.19	Detail Layout of Authorisation Unit	247
Figure 4.20	Detail Layout of Screening System Unit	248
Figure 4.21	Detail Layout of Pedagogical-Based Electronic Training Unit	250
Figure 4.22	Snapshot of the Home Page of the Prototype System	251

Figure 4.23	Snapshot of Sign Up page of the Prototype System	251
Figure 4.24	Snapshot of Login page of the Prototype System	252
Figure 4.25	The snapshot of Course selection page of the Prototype System	253
Figure 4.26	Snapshot of Course Description page of the Prototype System	253
Figure 4.27	Snapshot of Course Outline of the Prototype System	255
Figure 4.28	Snapshot of “View Certificate” page of the Prototype System	256
Figure 4.29	Snapshot of “Print Certificate” page of the Prototype System	256

CHAPTER 1

INTRODUCTION

1.1 Introduction

In the study of human development and social science, the term development is used widely as vital changes in skills, knowledge and attitudes of individuals over a period of time (Feldman, 2010). In education, the term professional development may be used in reference to a wide variety of specialized formal education, faculty training or continuous learning intended to support administrators, teachers and other educators to expand their professional knowledge, competence, skill and effectiveness (The Great Schools Partnership, 2013).

The nascent demand for professional development as part of lifelong learning for Higher Learning Educators (HLEs) has increased remarkably worldwide in the last two decades (Fenwick, T., 2018; Lai, 2011). These are also due to the rapid increase in the number of local and international students in Higher Education Institutions (UNESCO, 2009; Diamond, 2008) The emergent of 21st-century learning culture changes the pedagogical approaches and strategies in higher education (Lizier, J. T. et. al., 2018; Lai, 2011; CERI report OECD, 2009).

This thesis first, attempts to conduct a preliminary investigation on the issues, the challenges and the needs of professional development to enhance educators' pedagogical skills in Malaysian higher learning institutions. Second, it proposes an electronic prototype as an alternative solution to a traditional professional development environment. Finally, conduct evaluations on user acceptance of the proposed electronic prototype and the user motivation to transfer learning using such prototype.

1.2 Background of the Problem

In Malaysia, this development in the education sector is encouraged and supported by Ministry of Higher Education in line with the nation's vision to be a developed nation by the year 2020 (New Economy Model (The Tenth Malaysia Plan (RMKe-10) 2010 – 2015; NEM), 2011). The outcomes of these initiatives were mooted to develop a knowledge-based society by leveraging human capital through innovative and dynamic continuing education or lifelong learning (MOHE 2015).

The initial blueprint proposed the National Higher Education Plan (NHEAP) for 2007 to 2010 (Ministry of Higher Education (MOHE), 2007). Phase 1 placed the footing for implementing the basics necessary to complete long-term plans. The next blueprint was National Higher Education Strategic Plan (NHESP) 2011–2015 (MOHE, 2007), comprising the following four phases (Grapragasem et al., 2014) as shown in Figure 1.1.

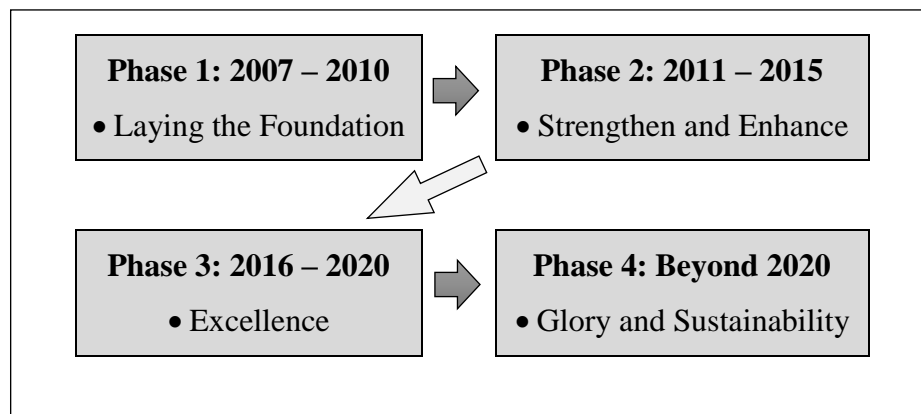


Figure 1.1 Phases of the National Higher Education Strategic Plan

The first NHEP blueprint (2007–2010) represented initiatives to assist all higher educational institutions in the production of a human capital cohort with first-class attitudes. The plan had five pillars that acted as the foundation for future developments. These were governance, leadership, academic environment, teaching and learning, and research and development (R&D). Among the pillars, the third

pillar is the academia environment which emphasises activities that promote academic staff developments. The fourth pillar is teaching and learning, expected academics to lead in their respective fields and focus on innovative methods of curriculum delivery and participate in enrichment programs while demonstrating professionalism and competence in their pedagogical skills. The Malaysian Qualifications Framework was set as a benchmark for the facilitation of quality control in higher education.

The Phase 2 of NHESP was designed to execute the Critical Agenda Plan's (CAP) project. CAP criteria included APEX University, MyBrain15, academic performance audit, lifelong learning, and graduate training scheme. In Phase 2, the Minister of Education highlighted a focus on strengthening efforts with the following goals: to produce human capital; enrich creativity and innovation; maximize the ecosystem of higher education; take advantage of globalization; and transform the leadership of leading institutions of higher learning. Regarding efforts to produce human capital, the plan emphasised strengthening the 5C's which comprising: Effective Communication skills; Collaboration and team building; Creativity, Critical thinking and innovation, and enculturation literacy. The development of human capital also focuses on enhancing intellectual Capital.

Overall, based on plans introduced in Phases 1 and 2, the current system of higher education in Malaysia has begun to focus on four distinct areas; globalization, pedagogical enhancement, governance, and a knowledge-based society. The general aim of NHESP's comprehensive design is to strengthen higher education consolidation as an international and regional hub of academic and educational excellence. One of the shifts in the Malaysian National Education Blueprints 2013-2025 and 2015-2025 is to increase the educators' quality of delivery and pedagogical knowledge and skills (MOE, 2014, 2015).

As Ministry of Education has a huge responsibility of educating Malaysians towards achieving world-class standards. The Malaysian Qualification Agency and the Ministry of Education Malaysia ensure the curriculum and assessment of higher education institutions are aligned with the international benchmark (MQA, 2012; MOE, 2014, 2015). In order to achieve this, educators need to be competent in educating learners towards the Vision 2020 as aspired by Malaysian government (MOE, 2014, 2015). This has implications on continuous training or leaning of educators in higher education as it would produce educators who are competent in pedagogical and technological skills that require to educate 21st-century learners (Fadzil, M., 2014; Freifeld, 2011). As one of the importance parameter for accreditation of Malaysian higher learning institutions (MHEI), the MHEI must provide a minimum of forty (40) hours of professional development training for their (MQA, 2012).

Developing high quality education through high quality professional development courses for educators in higher education institutions and foster lifelong learning initiatives are part of the focuses of the Malaysian National Education Blueprint for Higher Education 2013 – 2025 (MOE, 2014, 2015). One of the most important shifts in quality higher education is to maintain or enhance quality of the educators (Roy, T. S., 2016; Shirani Bidabadi, N., et. al. 2016; Moore, 2014; Henard, F and Roseveare, D, 2012; OECD, 2011). Professional development programs are designed to produce high-quality educators who are competent in their job. There have been constant measures to upgrade educators' in Malaysian higher education and efforts have been taken towards achieving this goal (MOE, 2014, 2015). Educators are the pillars of any education system. Their training and continuous learning need to focus on the contemporary knowledge and skills that are useful in both present and