DEVELOPMENT OF A HUMAN FOCUSED E-COLLABORATIVE MANAGEMENT MODEL FOR TEACHING AND LEARNING CONTENT: A CASE OF KOLEJ UNIVERSITI SELATAN

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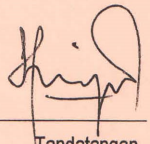

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ABSTRACT

Despite the availed policy and incentives, inadequate teaching and learning content (TLC) is being utilized in Kolej Universiti Selatan (KUS). This study is designed to develop a human-focused electronic collaborative management (ECM) model for TLC in KUS. The three research questions are: What are the motivating factors in ECM on the TLC process? Why should one use these relevant factors to promote ECM on TLC in KUS? How do these factors inspire ECM on TLC in KUS? The objective of this study is to assist KUS to firmly determine the best practice of ECM on TLC to construct and sustain a competitive niche for a higher education institution (HEI). KUS has a population of ninety full-time and fifty part-time lecturers. Participatory action research (PAR) was applied on fifteen lecturers across different faculties and academic supporting departments. Advocating, adapting, and aligning are the three continuous revolving spiral improvement actions that are applied to the reflective cycles employed to promote ECM on TLC. Data was obtained through participant observation, in-depth interviews, and document triangulation of data sources. The purpose was to construct, synthesize, develop, and justify the model of ECM on TLC. The four human-perspective motivation factors to develop a human-focused ECM model for TLC were: "Cooperative working behaviour", "Guidance collaborative processes", "Substantial reciprocal practice", and "Conclusive common goals". They foster collective action practices toward common objectives to promote ECM on TLC. Their roles are as enablers, facilitators, mechanisms, and drivers to inspire ECM on the TLC process. This study **a**dvances ideas on how to group the right professions, recruit right partners, catch the right timing, and make the right setting. Besides these, this research shows the value of PAR when applied to ECM on TLC in HEI.

Keywords: collaboration, e-collaboration, collaborative management, electronic collaborative management.

ABSTRAK

Kandungan Pengajaran dan Pembelajaran (TLC) masih tidak mencukupi di Kolej Universiti Selatan (KUS) walaupun terdapat dasar dan galakan insentif yang tertentu. Kajian ini bertujuan untuk membentuk model Pengurusan Kolaboratif Elektronik (ECM) untuk TLC yang berteraskan keinsanan di KUS. Terdapat tiga persoalan kajian iaitu: Apakah faktor-faktor motivasi ECM dalam proses TLC? Mengapa KUS perlu menggunakan faktor-faktor motivasi ini untuk menggalakkan proses ECM pada TLC? dan Bagaimana faktor-faktor ini memberi inspirasi terhadap ECM pada TLC di KUS? Tujuan kajian ini adalah untuk membantu KUS menentukan secara jitu amalan yang terbaik terhadap ECM pada TLC iaitu bagi membina dan mengekalkan daya saing sesebuah institusi pendidikan tinggi (HEI). KUS mempunyai seramai 90 orang pensyarah sepenuh masa dan 50 orang pensyarah sambilan. Kajian tindakan penyertaan (PAR) diaplikasikan terhadap 15 orang penyarah dari pelbagai fakulti dan jabatan sokongan akademik. Tiga tindakan dalam lingkaran penambahbaikan berterusan iaitu menyaran, mengadaptasi dan menjajar telah diaplikasikan dalam kitaran refleksi semasa membina ECM pada TLC. Data diperolehi melalui pemerhatian peserta, temuduga mendalam dan dokumen iaitu bagi mewujudkan triangulasi sumber data. Tujuannya adalah untuk membina, mensintesis, menbangunkan dan mengesahkan model ECM pada TLC. Empat faktor motivasi perspektif keinsanan dalam proses ECM ialah, Kelakuan Kerja Koperasi, Kolaboratif Proses Bimbingan , Amalan Saling Kebergantungan dan Matlamat yang Muktamad. Semua faktor tersebut adalah untuk memupuk amalan tindakan kolektif ke arah objektif yang sama iaitu untuk menggalakkan ECM pada TLC. Ia berfungsi sebagai pemboleh ubah, fasilitator, mekanisme dan pendorong untuk memberi inspirasi terhadap ECM dalam proses TLC ini. Kajian ini mengemukakan idea-idea bagaimana untuk mengumpulkan profesion yang tepat, merekrut rakan kongsi yang berpadanan dalam keadaan yang sesuai mengikut konteks dan keadaan serta masa yang betul. Selain itu, ia juga menunjukkan nilai PAR apabila digunakan ke atas ECM pada TLC di HEI.

Kata Kunci: kolaborasi, kolaborasi elektronik, pengurusan kolaboratif, pengurusan kolaboratif elektronik.

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LIST OF ABBRECIATIONS

AAR	After Action Review
AI	Appreciative Inquiry
AQIP	Academic Quality Improvement Project
AR	Action Research
CCO	Computer Centre Office
CIS	Collaborative Information System
CIMS	Curriculum and Information Management System
CITL	Centre of Innovation for Teaching and Learning
CM	Collaborative Management
CoP	Community of Practice
CSCW	Computer Support Collaborative Work
ECWE	Electronics Collaborative Working Environment
ECM	Electronic Collaborative Management
E-Collaboration	Electronic Collaboration
EMPEROR	Experience Management Portal using Empirical Results as Organizational Resources
E-Portfolio	Electronic Portfolio
FAD	Faculty of Art and Design
FEIT	Faculty of Engineering and Information Technology
FHSS	Faculty of Humanities and Social Science
GEM	Global Excellence in Management
GT	Grounded Theory
HEI	Higher Education Institution
ICT	Information, Communication, and Technology

IT	Information Technology
KM	Knowledge Management
KMS	Knowledge Management System
KUS	Kolej Universiti Selatan
MECE	Mutual Exclusive and Collectively Exhaustive
MIS	Management Information System
MQA	Malaysian Qualifications Agency
NPOV	Neutral Point of View
OM	Organizational Memory
OMS	Organizational Memory System
PAR	Participatory Action Research
PDA	Planning and Development Accreditation Office
POLC	Planning, Organizing, Leading, and Controlling
PTPTN	Perbadanan Tabung Pendidikan Tinggi Nasional
SCORM	Shareable Content Object Reference Model
SSO	Single Sign On
SWOT	Strength, Weakness, Opportunity, Threat
TLC	Teaching and Learning Content

PREAMBLE

It is widely recognized that electronic collaboration has already acquired prominence in modern landscape. That being said, the study of Electronic Collaborative Management (ECM) should not be confused with electronic collaboration (e-collaboration). For e-collaboration has given rise to a number of pressing issues that need to be solved. The present study is to fill the gaps. The overall focus of the study is to grapple with the ways in which effective and efficient e-collaborative management can be sustained through the development of ECM on Teaching and Learning Content (TLC). The aim is to develop necessary theory that will underpin the following propositions so as to map out its practical ramifications. As such the following claims will be substantiated in its proper sequence and to lay bare the fundamental contentions, namely

- That ECM on TLC has become one of the most pressing issues that is encountered by Higher Education Institutions (HEI);
- That the development of a feasible ECM on TLC practice is necessarily, but it must be supported by insights that are gained from the synergy of social and system theories;
- That the theoretical framework mentioned above will in turn form a firm bedrock for the argument on the importance of participatory action research (PAR) and grounded theory.

Granted, the main contention is that the theory can be reified in terms of empirical practices which are further strengthened by necessarily participatory efforts and the knowledge that is generated and produced by concrete analysis of the findings. All the

claims mentioned above will then be laid bare in the subsequent chapters in proper sequence:-

- to address the issues of ECM on TLC which are encountered by the case study of Kolej Universiti Selatan (KUS) and HEI (chapter one);
- the way in which social and system theory help in the development of ECM on TLC practice and theory (chapter two);
- the deployment and importance of test-case, for example, in the proposed PAR, especially the findings that are based on the qualitative analysis of the research data (chapters three and four);
- the summary of the findings will be provided in the form of discussion, conclusion and recommendation (chapter five).

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

It has been widely recognized that information, communication and technology (ICT) along with technological evolution, have had tremendous impact on the ways organization operates. One of the relevant issues to pose, however, is how to establish collaboration within the organization. There is no doubt that global business organizations employ electronic collaboration (e-collaboration) across continents and oceans. The very new form of collaboration provides thereby enormous opportunities space for organizational innovation. Their concern form the backdrops of the present study, the aim is to develop a human-focused model oriented and sensitive for electronic collaborative management (ECM) on teaching and learning content (TLC) for higher education institution (HEI). The goal is to enable HEI manage its TLC. The rationale behind the endeavor is viable curricula to students.

TLC is considered as one of vital elements for quality curriculum delivery in HEI. It is accumulated from various sources of professional knowledge, case studies, lessons learnt, pedagogical practices, practical know-how, lecturers' experiences, etc. TLC formats include lecture notes, study guides, illustration slides, audio and video material (Seldin, 2004), which are used for curriculum to disseminate knowledge and skills (MQA, 2009). These are all unstructured type of soft-copies data prepared by lecturers with professional expertise and domain of knowledge of the subject. It therefore has many sources of input (for example, from overseas or developed countries' text books) that blend in with local social setting, cultural and education goals.

TLC is always required to review, update, and align with the teaching and learning environments. The lecturers who conduct professional subjects know their subjects field of TLC, delivery approaches, and assessment techniques better than others. They are more acquainted with the subjects' discipline than others in the specific domain of knowledge. Hence, they efficiently manage their TLC through Moodle Collaborative Information Management System (CIMS) and SharePoint Collaboration Information System (CIS) web access portals. The function of the interactive web access portal of both CIMS and CIS are TLC uploading, editing, downloading, and distributing with their own desktop computers or notebooks in or out of KUS campus.

The proposed human-focused ECM on TLC model of this research objectives is to resolve inevitably several practical issues that confront the researcher serving HEI, Kolej Universiti Selatan (KUS) (Southern, 2013). One of the perplexing issues encountered by most TLCs KUS faculties' deans and heads, or academic supporting colleagues had seem the need to retrieve the necessary syllabus, courses sharing among lecturers, the updating of the obsolete contents and the auditing the compliance to standard requirement. More often than not find some of TLC is not updated during syllabus review. Moreover, different but versions of TLC confusing is discovered in the relevant computer storage and this confusion extends to Moodle CIMS.

These confusions embarrassment and the phenomenon of "out of place", had given rise to unnecessary embarrassment when TLC inadequacy during the programme's syllabus audit from MQA. Finally and most important, there is possible curriculum delivery

which is not in accordance with the latest updated version of TLC. To fill the gap above, the human-focused ECM on TLC model is to forge relevant KUS colleagues, participation in the ECM on TLC by the following necessary steps: collecting, updating, sharing, maintaining and auditing in SharePoint CIS.

The enforcement of a management approach or administrative policy method to build and maintain TLC may disrupt the collaborative relationships among lecturers, deans and supporting colleagues. Although human behavior and the work culture may change through enforcement, they usually follow instructions as given by the management. While professional knowledge concerning TLC can be assessed and evaluated, it may take longer time than necessary for its accumulation and enrichment. This in turn creates enormous difficulties for traditional management with regard to organizational objective enforcement, employment contracts, job responsibility, teaching guidelines, and therefore makes it difficult to construct a quality teaching portfolio.

ECM may therefore serve as an alternative way to insure the quality of TLC portfolio for an HEI. Besides, TLC is for skilled lecturers, it offers a good chance for them to get access to education's resources. As Shah (2012) cogently points out, collaboration synergizes, and this is understood as collaborative management that empowers all participants and therefore allows the latter to partake in order to contribute to and perpetuate efforts in enhancing the contents, quality, and inextricably the richness of TLC.

However, there are practical issues to be taken into consideration in promoting ECM on TLC in the HEI. It is important to note, for example, that KUS faces inadequate and poor TLC. It occurs when there is a brain drain of full-time or part-time lecturers who own and preserve the comprehensively organized TLC. As full time lecturers are required to provide their TLC to colleagues of all faculties, most part-time lecturers do not preserve their TLC at KUS. The latter have tangible hands-on skills, know-how and practical working experiences that are better than the full time lecturers. Given that the curriculum delivery is worth garnering and beneficial to KUS students. It also shows that the preservation of TLC in the ICT device and its uploading to Moodle CIMS (Hollowell, 2011) when conducting curriculum delivery semester is, still, wanting.

It is worth mentioned that the Centre of Innovation for Teaching and Learning (CITL) is an academic supporting department at KUS. The main role of the centre is to assist faculty deans, heads and lecturers to acquire quality in curriculum delivery, and the role of CITL colleagues is to encourage and empower lecturers to conduct their lessons with the facility of Moodle CIMS. The centre routinely vacates the TLC of Moodle CIMS at end of every semester in order to make space for subsequent semester upload and delivery (Southern C. , 2012). Therefore, the centre sustains its backup copies of TLC from Moodle CIMS into SharePoint CIS before clearing the TLC in Moodle CIMS.

As Sampson (2009) has aptly pointed out, that SharePoint CIS acts to integrate and coordinate information from diverse sources (El-Bibany, Katz, & Vij, 1991). As such, it preserves all KUS TLC online status and can be considered as KUS's up-to-date academic electronic portfolio (e-portfolio). However, the academic e-portfolio for TLC

as such always needs to be updated and revised by KUS colleagues. The endeavor mentioned is to ensure that TLC preserved in SharePoint CIS are consistent with TLC delivery at Moodle CIMS and that the deficits in quality control of TLC can be avoided through the process of auditing.

It is against such backdrops that the present study proposes that an ECM model that will lay stress on the human factors be adopted so as to motivate colleagues to participate in the effort, especially in updating and revising TLC. Arguably the ECM process begins from a preserving plan of TLC, SharePoint folder organization, SharePoint function briefing, practical learning, actual execution, feedback review, and last but not least, continual improvement of ECM on TLC in SharePoint CIS. The process is then formulated so as to avoid any foreseeable human barriers in such adoption of ECM on TLC for KUS. These barriers include understandably social issues, awareness issues, educational issues, cultural issues and political issues (Stephens, 2008).

A well organized and functional CIS may fail if KUS colleagues are not willing or reluctant to cooperate in full force. As a consequence, undesirable conditions such as "people" who might outplay data, processes, technology and new CIS implementations failure arise because of low performance, output, and effect (Simon, 2011). All these factors may in its outcome unable to satisfy the expected return in the costly investment. It is for the above reasons that the present study is pertinent in general and its effort in particular to promote itself as a typically social technology research.

Against such backdrop, the aim of the study is to empower most KUS colleagues to get access to ECM on TLC in Moodle CIMS (Hollowell, 2011) and SharePoint CIS (Sampson, 2009). It is, to the best of the researcher's information and years of working experience in HEI, the area that there is no substantial study has been focused in Malaysia. Furthermore, ECM on TLC still at the infancy stage in Malaysia.

ECM remains one of the management approaches that allows (if properly understand) all levels of administrative and management colleagues to carry out their managerial tasks effectively, by using the electronics collaboration (e-collaboration) platform. As to Delone and Mclean (2003) have aptly formulated, human behavior factors are the majority contributions to the successful of information systems' implementation. Therefore, the need to develop a human-focused ECM on TLC model that enable us to sufficiently tackle human behavioral factors and issues in ECM on TLC is all the more pressing. Figure 1.1 highlights (page 8) the flow of HEI ECM on TLC knowledge gap that this research intends to understand in depth.

That said, one must admit that most studies of collaboration focus on collaboration among two or more organizations (Mattessich, Murray-Close, & Monsey, 2001), or collaboration in across two or more HEI (Czajkowski, 2007), for example, collaboration in learning, teaching, and research (Elgort & Wilson, 2008), or collaborative teaching and learning (Martin & Williams, 2012). Others studies focus on the contents of the collaboration contents of collaborative information behavior (Reddy, Jansen, & Spence, 2010), and collaborative seeking information (Shah, 2012); and, still, others focus on tools of collaboration such as collaboration technologies, tasks, and contexts (Zigurs &

Munkvold, 2006) with enterprise collaborative management system (Choy, Lee, & Lo, 2004). Only very few collaboration studies have focused broadly on the collaborative management domain; for example, collaborative governance (Ansell & Gash, 2007), collaborative management research (Pasmore, Stymne, Shani, Mohrman, & Adler, 2008), collaborative leadership and management style (Archer & Cameron, 2009). There is also little collaboration studies that focus on promoting ECM on TLC from the perspective of management behavior. The present study is to fill the existing gaps.

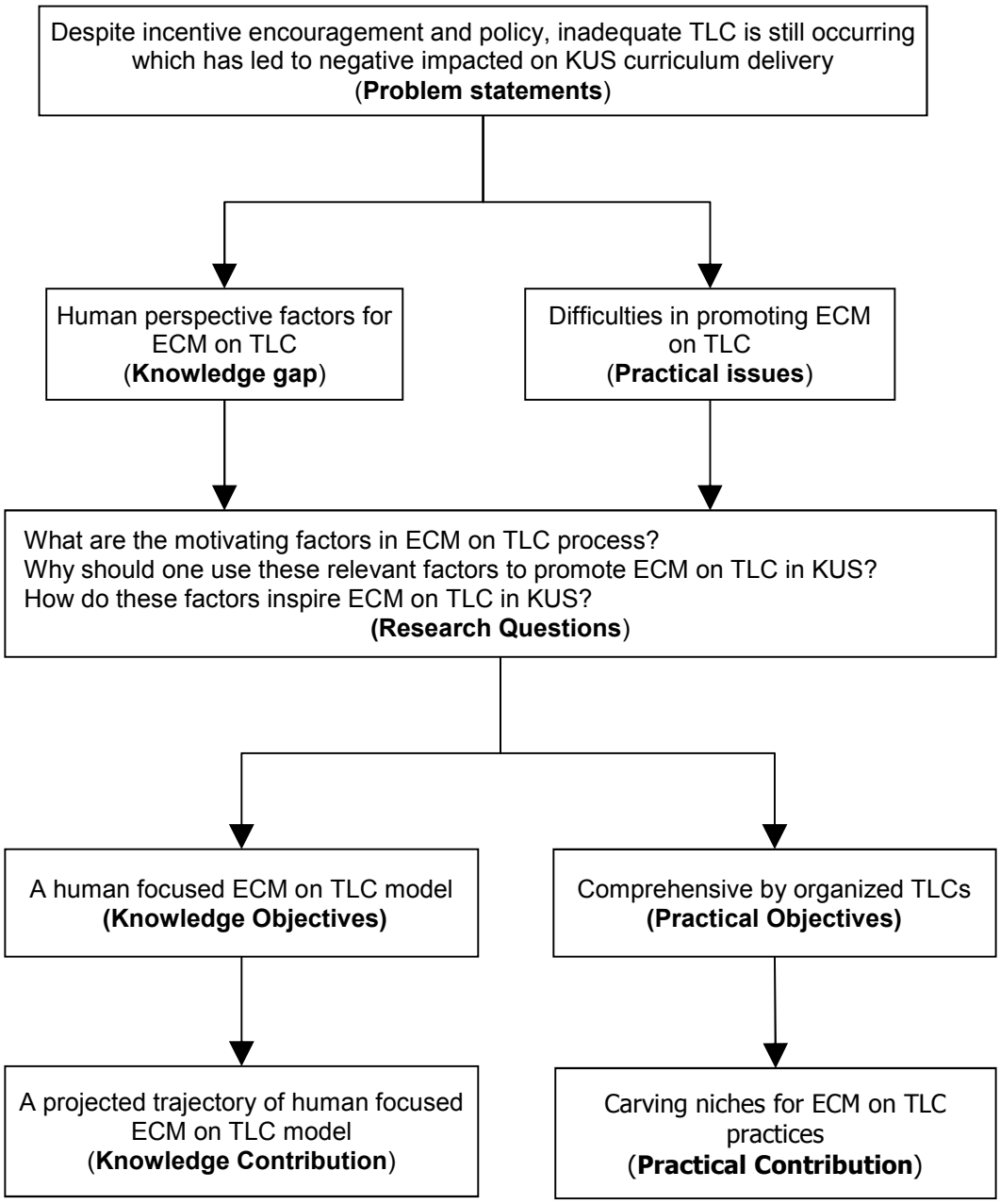


Figure 1.1
Context of Developing a Human Focused ECM on TLC Model

1.2 Problem Statement

The main contention of the present study is that, despite incentive encouragement, there is inadequate TLC at KUS. The problem has negative impact on curriculum delivery due to poor TLC. Many undesirable effects will occur on if inefficiency disrupts TLC conservation in Moodle CIMS and SharePoint CIS. The following factors are most pertinent to the study:-

- relevant to MQA quality criteria, programme's TLC quality must comply with the accreditation standard requirement. Else, students are unable to obtain PTPTN loans if their enrolled programme did not meet the above requirement as determined by MQA (PTPTN, 2014);
- degraded educational services to the existing students in terms of knowledge acquisition and practical skills which directly affect the quality of learning (MQA, 2009);
- teaching quality of novice lecturers could be affected without relevant curriculum delivery – if inadequate quality of TLC preserving and sharing (Southern, 2013);
- KUS loses TLC competitiveness and advantages in education service industry if TLC is incomprehensive and unorganized (Thock, 2014).

The aforementioned research problems have exacerbated due to KUS being in the stage of transformation. Possible causes of the problems are the lack of clear guideline and policy regarding TLC. The study which investigates ECM on TLC by a PAR will help to overcome the current deficit and needs.

1.3 Research Questions

Based on the above statement, there is a set of research questions which are pertinent and will be develop in the forthcoming discussion. Those questions are tabulated as follows.

- What are the motivating factors in ECM on TLC process? The question motivates the discovery of the implicit human-perspective factors that stimulate KUS colleagues to work together on the ECM on TLC process for the common goal.
- Why should one use these relevant factors to promote ECM on TLC in KUS? Such endeavour is to justify the use of the human-perspective factors to encourage KUS colleagues to combine (integrate) their efforts in ECM on TLC process.
- How do these factors inspire ECM on TLC in KUS? The rationale is to determine the way in which those factors with interact mutually with one another when they propel KUS colleagues toward the goals of ECM on TLC.

The research questions, in short, are to explore the core problem of "how to create, conduct and improve ECM on TLC" and to accomplish the "development of a human-focused ECM on TLC model" goal. They also posed as how to, in order to achieve comprehensive and organized TLCs for KUS, shape ECM on TLC model.

The question, "How to create, conduct and improve ECM on TLC", which is of vital concern in the present study, will be answered in proper sequence. The aim to facilitate

ECM on TLC problem so as to prepare seeded for the niche of competitive advantage on behalf KUS.

The current study of, has evident deficit, collaboration knowledge, it lack the necessary link between, and this gives rise to enormous problems link ECM and TLC. The following list consists of the different type of issues arising in the field of study.

- The issue relate to theory, which concerns how cogent is "collaboration theory" (Gray, 1989) and its ability to accomplish technological based collaborative management.
- The issue of practicality, which concerns the part-time lecturers whose viability to update their TLC for MQA audit, and whether they could effectively manage the electronic copy of TLC by means of the SharePoint CIS.
- The issue relate to research, which deals specially with the case-study of KUS's TLC participatory action in a community.
- The issue relate to concept, which relates to the finding of guaranteed rules for effective electronic collaboration and efficiency of management for TLC in KUS.
- Development issue, which relates to technological development and unfolding whereby that impacts of collaborative management media are considerable.
- Cultural issue, which relates to the implications of that researcher serving KUS in South East Asian culture whereby the landscape, is of pluralist and multi-language.
- Policy issue, which deals with questions such as why at KUS its lecturers are required to utilize the e-Learning facility in order to deliver TLC. Understandably these TLC are their intellectual property.

As TLC might better be deemed the intellectual property for all full-time and part-time lecturers, the question becomes whether these properties be uploaded and retained. Granted, the KUS lecturers may not upload and update their latest and complete TLC in Moodle CIMS for conducting their lesson. As Croasdaile (2009) pertinent pointed out, it is pivotal that the issues of trust and communication, policies, and procedures be matched with the right e-collaboration tool in education industry.

1.4 Research Objectives

There are these research objectives to be accomplished in the present study,

- to determine what are the motivating factors that inspire ECM on TLC process.
- to understand why one should considered the factors mentioned in promoting ECM on TLC, its' role, and its' meaning.
- to determine how these inspire could practically factors ECM on TLC and its' timing.

In order to identify some of factors, it is necessary to enquire what are embeds in the employees' mindset so as to engender the participants to engage actively in ECM. As Tapscott and Williams (2010) highlight, the researcher should frequently use more other people's intelligences to solve the problems. The Moodle CIMS and SharePoint CIS had been applied to facilitate efficient sharing of TLC among different academic levels of the lecturers, department heads, deans, and academic supporting colleagues. They collaboratively manage TLC through enterprise collaboration systems. Other complementary electronic tools such as e-mail, instant messages, and communication

devices have also facilitated this collaborative management. They also collaborate in managing their TLC on these CIMS and CIS.

Thus, the study of ECM on TLC is designed to facilitate the development of a human-focused ECM on TLC model. The model is being seemed as problem solving approach in the problem of "how to create, conduct and improve ECM on TLC". The present study strives to develop a human-focused ECM on TLC model that will correspond to an organized TLC for KUS with practical objectives. As its intents, the researcher shall utilize PAR to collect data from participants, events, interaction, artefacts, and outcomes of the present study. Next, the data collected will be analyzed and further suggestions will be made to improve the ECM on TLC. Researcher also applies PAR to determine the meanings and actual practice of ECM on TLC in order to generate a newly context-bound theory (Klein, 2012). It is safe to say that the study intends to develop an ECM on TLC model with an efficient set of CIS tools that are able to work harmoniously in synergy (Goggins & Erdelez, 2010).

There are four other complementary objectives which the researcher wishes to arrive at in the present study. First, to utilize ECM on TLC to create, sort, and update TLC; second, is to make an effective e-collaborative working environment (ECWE) through this ECM on TLC; third, to establish as a result a functional ECM on TLC community; and fourth, to find a niche in a collaborative HEI for it to sustain competitive advantages. The practical objectives are established in order KUS could have at its disposal the latest updated TLC and the lecturers may have quality curriculum delivery that will

meet the requirements of MQA the accreditation standard in its quality audit. The objectives also resolve TLC some of the difficulties in necessary retrieval:-

- when delivery is needed for sharing, updating and auditing;
- when TLCs are not up to date;
- when TLC versions suffer from inconsistency and are unable to track what is being updated;
- when there are inadequate TLCs, and occasionally;
- when curriculum a delivery is not of the latest TLC.

It is the hope that the present study also fosters the growth of individual knowledge and competence, in order to enhance the capacities of faculties' deans and heads, or academic supporting colleagues. They may accomplish this by learning in the PAR action process that they shall have the ability to discover and utilize ECM knowledge. They may then learn through using the PAR reflection process which gathers diversity experiences that enhance their ECM skills. It shall enrich TLC and make greatly improve on curriculum delivery. And by so doing, the researcher hopes to elevate KUS's competitive advantages through the quality of TLC and improved competence of the lecturers.

1.5 Significance of the Study

No research is viable without stating its significance to a wider community. Describing the trajectory and implications of a human-focused ECM on TLC model for KUS is the desired contribution of the present study. This involves a model which involves

supplement to collaborative research, collaborative learning, and collaborative teaching. The model can also be used to generalize the groundwork of ECM for other HEIs. Furthermore, the model provides a new understanding of incoming management in a virtual learning and working environment.

The model, when applied successfully, may extend positive influence upon the creation of KUS administrative policy of ECM to support virtual learning and working environments. The usefulness of the model could be a reference for other HEIs using ECM for their TLC or other virtual curriculum. It may also extend e-collaborative knowledge management and other e-collaborative work at KUS. Tiwana (2002) has shown that knowledge assets such as there are valuable for an organization striving to elevate its business niches and competitive advantage.

The ECM model unveils the implicit human factors in ECM. Those factors may able to bring benefits to other academic researchers. Practitioner may utilize those factors to realize ECM in their organization and evaluate its performance. Those factors help to mark itself off from previous research works, as they did not adequately take serious consider pertinent elements such as ICT, CIMS and CIS.

Public may have different perceptions, feeling, and attitude toward the collaborative management, or collaborative working with ICT, CIMS or CIS tools. It is the hope that the model may change the way people do their jobs in e-collaborative working environment, and the way they live. It will become evident that the work environment

will be transformed as people can work without the need to situate at the same location to accomplish collaboration tasks such as collaborative authoring (Thurbon, 2010).

All the ECM factors can therefore harness great crowds of intelligences, information resources, and increase productivity and work quality. As a result, the ECM factors may reduce waste of efforts which caused by miscommunication and decreasing the probability of conflicts that happen among departments when organizing collaborative work.

The part of the present study purpose is to carve niches for ECM on TLC practice and to develop a feasible paradigm. PAR is not only used for developing better theoretical models elsewhere, but it also resolves practical issues in ECM. PAR is a small investment but it greatly contributes to the vast increase of knowledge in education. It is in PAR field work that one finds comprehensive thinking, advance concept and in-depth know-how being practiced. The PAR activity is promising in result that it in the best practice of ECM on TLC.

The lessons gathered from these best ECM practices can then be enlarged to generate a systematic means of organizational transformation. It also demonstrates that the human side of the critical success factors when managing TLC collaborative at KUS. The findings, when put in perspective, will enable the positive factors of ECM to contribute directly to KUS's competitive advantages in the education and other markets. Therefore, a successful implementation of ECM on TLC through PAR can become a benchmark for any small or medium sized HEI.

KUS, as mentioned earlier, with its e-collaborative knowledge management (KM) and e-collaborative working environment, will create among all levels of the lecturers, department heads, deans, and academic supporting colleagues the opportunity for further development and improvement of TLC for curriculum delivery to students. Moreover, e-collaborative working increases the affinity among themselves and thereby enhances effective exchanges of knowledge and know-how, collaborative research, collaborative authoring TLC, collaborate teaching and other collaborative tasks in HEI (Tapscott & Williams, 2010). Thus, KUS will in due cause become an dispensable e-collaborative team to serve students with top-notch education that is connected with and conforms to the latest market requirements.

It is important to provide graduates with the professional knowledge and practical know-how to facilitate the future employability. Therefore, the outcome of the present study may not only to provide knowledge concerning the latest TLC development, its delivery system for students, but also will enhance the rapport of collaborative work among KUS colleagues. Conducive relationships among KUS colleagues and in collaborative works are for the intangible organization asset will beneficial to organizational development. It is the hope that the PAR will allow KUS to acquire more competitive advantages over other competitors.

1.6 Scope of the Study

This study is a case study whereby its scope coverage on KUS's lecturers, department heads, deans and academic supporting colleagues who engage in ECM on TLC. The

researcher is not building an ECM on TLC team instead, the researcher agenda is humble, for example, to encourage the current population of ninety full-time and fifty part-time colleagues at KUS to directly or indirectly involve in the present study. They are fifteen colleagues who directly participant in PAR. They come from diversified background and faculties and departments. To be precise, the project involves:-

- three colleagues from the Faculty of Art and Design (FAD);
- one colleague from the Faculty of Engineering and Information Technology (FEIT);
- two colleagues from the Faculty of Humanities and Social Science (FHSS);
- four colleagues from the Computer Centre Office (CCO);
- three colleagues from Planning and Development Accreditation Office (PDA);
- two colleagues from Centre of Innovation for Teaching and Learning (CITL).

They are key representative of research selective sample for ECM in KUS. They are worth for the researcher to draw human-perspective factors out from their participation on ECM on TLC process. It is because they are critical actor who playing different roles to drive and support this ECM on TLC process. These human-perspective factors are embedded in ECM on TLC process when they collaborate with other through their step by step action.

The ECM on TLC process is on the ready setup of Moodle CIMS and SharePoint CIS. The researcher serves KUS and uses Moodle for conducting online learning in the past eight years. Most senior full-time lecturers are familiar with Moodle CIMS to deliver their TLC to their student inside and outside of classroom. CITL colleagues play the

role of promoting e-learning, administrating users, monitoring utilization and delivery performance of Moodle CIMS (Southern C. , 2012).

CCO colleagues have installed, configured, and supported Moodle CIMS from technical edge. But, CITL colleagues require to backup and delete online TLC at end of every semester. Therefore, the researcher proposes to have SharePoint CIS retain most if not all these TLC. As the Figure 1.2 clearly show (page 19) the present study involves ECM on TLC from lecturer uploading TLC to Moodle and CITL or respective lecturers need retain the TLC in SharePoint CIS. The SharePoint CIS as mentioned is to establish academic electronic portfolio for the subjects that are conducted in Moodle.

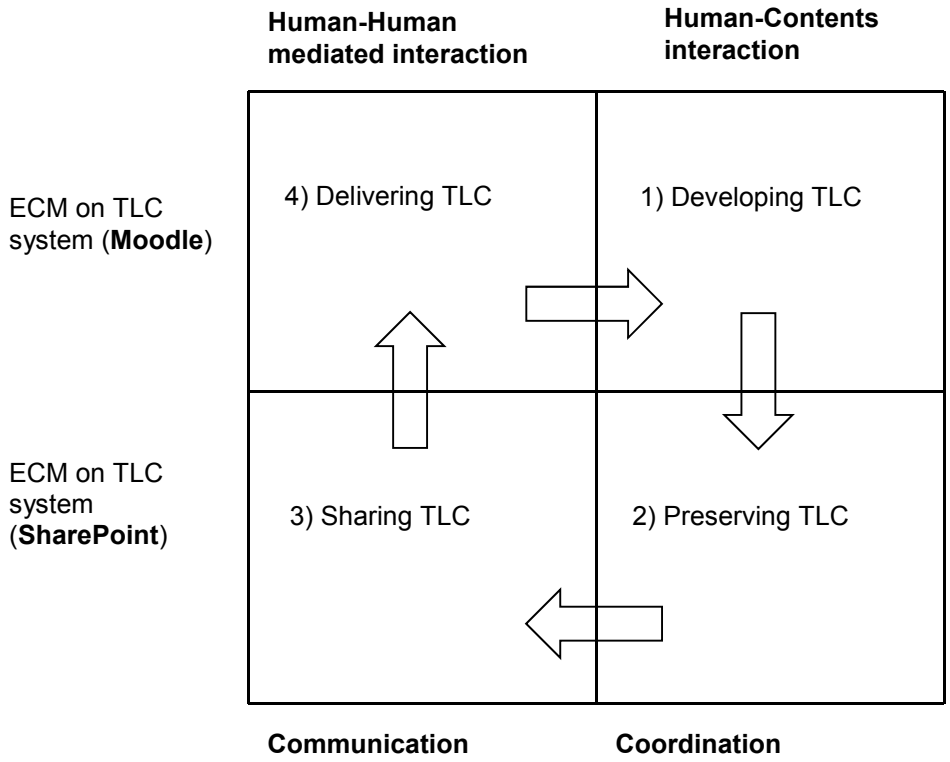


Figure 1.2
Domain of Study to Improve ECM on TLC for KUS

There are advantages in HEI vis-a-vis KUS:-

- KUS has ICT facilities that support Moodle CIMS and SharePoint CIS;
- KUS top management renders support in carry out the present study PAR (Southern, 2012);
- the researcher, however, is requires to involve as convener in order to undertake three continuous of PAR cycles for ECM on TLC;
- collection of relevant data from colleagues, in terms of perception, opinion, feedback, artefact, outcome, are feasible and this continuously improve the researcher's reflection for the subsequent cycle of PAR's action planning;
- KUS as an HEI has been able to harness more talents and intellectual resources when compared to other non-education industries;
- talents and colleagues at KUS have already equipped themselves with computer literacy whose learning curve is by far shortened when compared to the employees from other industries;
- despite all the advantages, the researcher still needs time and effort to negotiate and coordinate with KUS colleagues in the process of the research.

PAR unit focuses on the individuals who participate in ECM on TLC. These individuals are organized across several functional departments. From the present study they are able to learn the ECM method, and the necessary skills that are required to function effectively with ECM. They must also comply with certain TLC construction guidelines. The action study, as it now stands, has applied negotiated order theory, social exchange theory and work system theory in order ECM practice is functional.

1.7 Organization of the Dissertation

The current dissertation outline comprises five respective chapters. Each chapter serves its specific purposes. They are assembled coherently as a form of discourse on a specific research topic. Chapter one addresses the main issues, conflicting, rationales, reasons, and specific context of the research topic. It specifies the background, statements, and questions. Subsequently the chapter also underscores the objectives, significance, and scope of this research topic. Chapter two consists of literature reviews on relevant theories, models, and concepts whereby articles, books and reports are sufficiently scrutinized to fill the necessary gaps through assessment of the underlying theories the way forward. Chapter three is mapped out to underscores some of the applicable research design, method, and process which are deemed worthwhile to create positive contribution to the field of study. Chapter four unfolds the research action, findings, further reflection, lessons learnt and model construction. Chapter five lays stress on the quality of the research process, responds to some of research questions, how the research objectives had been accomplished, and recommendation for future research. All chapters will be logically linked in proper sequence. It is the hope that the several subsections are arranged to enrich the subject matters.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The present chapter aims to offer relevant literature review, which helps the researcher to understand, frame, and to posit the area of ECM research problems. The review process is indicated in Figure 2.1 (page 23). The review helps to define the ECM and research topics in funneling from wide knowledge scope of collaboration to electronics collaboration (e-collaboration) and, thereby, the researcher could elaborate on concepts, characteristics, attributes, functions, features, the flow of process and scenario setting of ECM. The next step in the review concentrates on the overall research goal, which enhances discussion and debates with the previous and current literature which highlight emerging practical ECM issues and theoretical deficits.

Then, the researcher intends to evaluate and scrutinize on the earlier and existing ECM studies which result in feasible findings, sound conclusion, legitimate implications, and reveal potential knowledge gap from the literature. This in turn enables the researcher to compare, contrast and critique from different model gaps the pertinent practical issues to be resolved. Moreover, this chapter also explains the underlying theories against which this study is grounded. A summary of this chapter is provided at the end of the chapter. The perspective of ECM is based on previous findings.

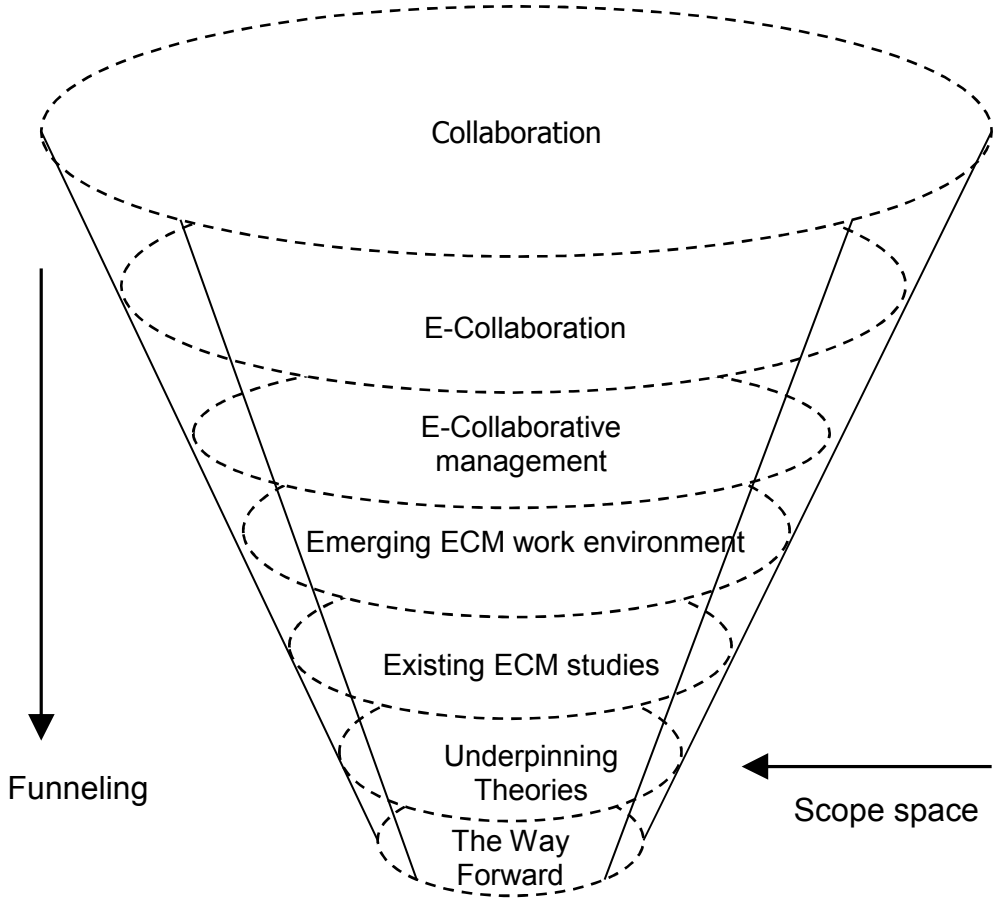


Figure 2.1
Linking Collaboration Theories, Research Methodologies, Empirical Studies, Practices, Technologies, Contents' Literatures that Induce to ECM Process Study

2.2 Defining Key Terms and Concepts

A number of key concepts are used in ECM study. These concepts are expandable and they gradually elaborate from broad scope of collaboration, and electronic collaboration (e-collaboration) to electronic collaborative management (ECM). The present study uses TLC as the target objects for ECM in KUS. This TLC key term is defined in Chapter One that hinges upon the research backgrounds, against which

lecture notes, study guides, slides, and audio-visual materials are substantially documented.

2.2.1 Collaboration

Camarihna-Matos and Afsarmanesh (2008) define collaboration as a category of people who share their information, resources, responsibilities, cooperative plan, and also execute, assess, and review the common goal of project activities. Collaboration (from the Latin *collaborare*) implies people who "work together". It is a shared contribution process for a people group not only mutually enhances their capability but also share process duties, risks, resources, interests and gains.

Heckscher (2007) defines collaboration as "working together" deliberately in order to pursue a common purpose. Collaboration is much more than "living together", it involves a shared objective that cannot be reached without the contribution of all participants; and thus, collaboration necessarily implies various processes of multilateral dialogue and negotiation, exchanges of views, sharing of information, and of building consensus. Healthcare social workers are a "working together" example requires various background professional experts' work together to take care their patients.

Slater (2010) understands collaboration as people working together, garnering trust, and sharing of expertise and experiences regardless of the scale of the collaboration project. The number of partners, trustees, time, and resources were cited as

necessities to make the collaborative projects successful and, thereby, enact change. He mentions mutual interest of organizational outlook that benefit interactions, negotiations, and process of collaboration.

However, Gray (1989) claims that collaboration is meaningful when stakeholders are interdependent and complimentary to achieve promising outcomes. He defines collaboration as two or more stakeholders who could pool and appreciate their tangible resources such as information, human, capital in order to solve a complex problem that cannot be resolved individually. Collaborative management in healthcare and environment preservation industries has led to significant positive results. For example, Green environment preservation requires the government and public sectors to manage the environmental resources collaboratively (Zator, 2011).

Whittington (2003) asserts that collaboration refers to practitioners who utilize collective knowledge, skills, values, and motives to accomplish their common goals. He proposed that collaborative structure and context show collaboration is the proactive action process of partnership (refer to Figure 2.2, page 26). It brings people to cooperative working arrangements from various functional teams. With fewer officials integrated work across different professions and functional teams and, equally, with social inclusion and dedicate empowerment, effective team goals are achieved.

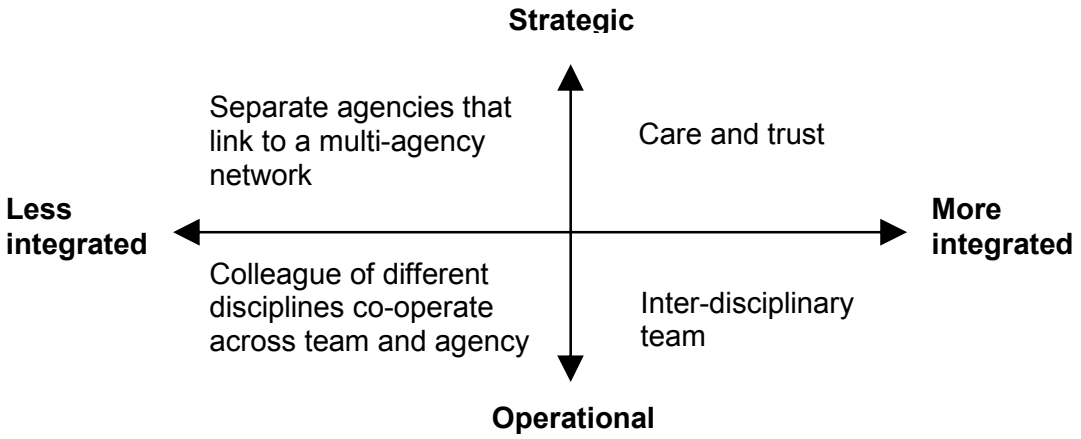


Figure 2.2
Collaborative Structure and Context
Source: Whittington (2003)

Camarihna-Matos and Afsarmanesh (2008) identify the difference between networking, coordination, cooperation and collaboration, as shown in Figure 2.3 (page 27). Networking engages communication and information exchange for reciprocal interests and advantages. Information is available and being shared by many without the need of any common goal. Coordinated networking involves people working together harmoniously and effectively by aligning and altering the activities, for example, after exchanging information, in order to achieve better efficiency and performance. Cooperation comprises not only information exchange and adjustments of activities but it also includes the sharing of resources to achieve compatible goals. In short, collaboration includes all aforementioned contents and emphasize on joint goals, identities, and mutual responsibilities.

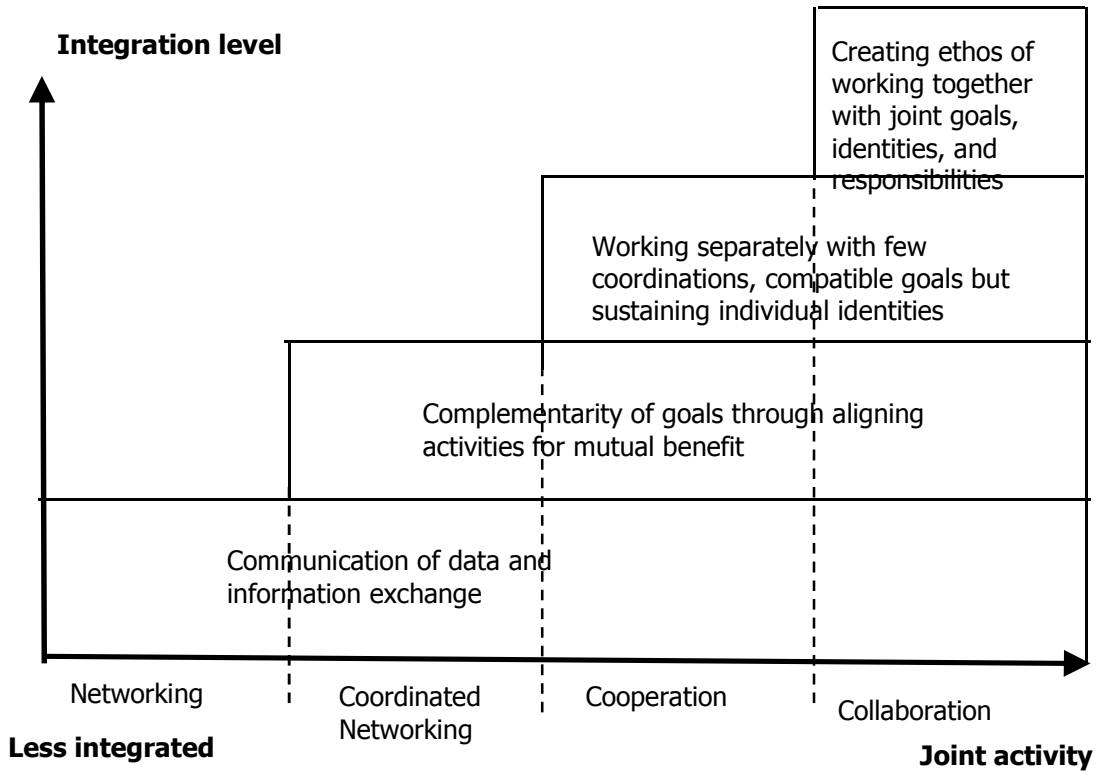


Figure 2.3
Differences between Networking, Coordination, Cooperation and Collaboration
Source: Concept of Collaboration, Camarihna-Matos and Afsarmanesh (2008)

To recapitulate, the present study defines collaboration as involving multiple parties or individuals who work together and bear joint responsibilities and these participants help one other toward the common goals. People complement each other's capability in order to enhance the whole synergy that is greater than the sum of a whole (Shah, 2012). "Work together", means to be partner, colleague, and associate in attitude and behavior to accomplish the common task. "To help each other" perpetuates the ethos of "working together" complementing one other's shortcomings and even reciprocally and even to learn reciprocally in order to enhance individual capability and team

competency. "Joint responsibilities" is sharing the responsibility of decision making, roles, duties, and accountability for the task to be accomplished. "Team common goals" refer to mutual consensus, collective interests, and benefits. In the next section, the researcher shall focus on the findings on information, communication and technology (ICT) tools for collaboration.

2.2.2 Electronic Collaboration

Electronics collaboration (e-collaboration), by definition, refers to the collaboration mediated by ICT. ICT mediated communication enables people to send or exchange information through electronic mails, instant messages, and video conferencing, etc. One can communicate with each other regardless of geographical distance, duration and occasion by using electronic technology devices in order to accomplish a common task (Kock, 2007). As illustrated in Figure 2.4 (page 29), exchange information could be one to one or multiple to multiple and even between the synchronous or the asynchronous (Baldwin, Shen, & Brandon, 2009). ICT not only enables people to interact instantly but also allows unconstructive space and time for people to response carefully. It leaves the communication logs for people to recall and for further improvement.

The ICT facilitates the contribution of knowledge from individual and organization (Harteis, 2010). Individual and organizational knowledge and skill are well disseminated through ICT. ICT tools such as blog, forum, Wikis, organizational memory system (OMS) and other knowledge management system (KMS) preserve

their precious experience, lessons learnt, best practices and practical solution from profession and expert. Therefore, the novice can make use of system such as expert system which is knowledge-based and their specialized rules to obtain the right solution and thereby reduces the effort and waste of resources.

	Same moment (Synchronous)	**Different moment (Asynchronous)**
Same location (Co-locative)	**Face to face' collaboration:** Face Interactions such as decision-making rooms, single display, shared table, and wall display.	**Asynchronous collaboration:** Continuous workflow tasks using team rooms, large public display, shift work groupware, and project management.
Different location (Remote)	**Synchronously distributed collaboration:** Remote Interactions such as video conferencing, instance messaging, and chats.	**Asynchronously distributed collaboration:** Communication adds coordination such as email, bulletin boards, blog, group calendars, workflow, version control, and wikis.

Figure 2.4
Different Mode of Collaboration in Collaborative Working Environment
Source: Adapted from "Collaborative Construction Information Management – Evolution and Revolution" by Baldwin, Shen, and Brandon, 2009.

Kock, *et al,* (2001) specify e-collaboration as applying electronic technologies to collaborate among individuals who engage in a common project. In addition, Kock (2009) indicates that e-collaboration is broadly defined, for example, it includes the

elements of the collaborative tasks, collaboration technology, participants' characteristics and behavior, their mental schemas and knowledge, and their physical environment surrounding and social environment surrounding. He emphasizes on the outcome quality of collaborative task and efficiency as the main concerns of e-collaboration.

Elogrt and Wilson (2008) clarify e-collaboration processes and functions into four categories. First are the coordination, administration, project management, and leadership; second is generating, sharing, and appreciating new knowledge; third, is content and data management; and fourth, is referring to communication and interaction. Collaboration has various forms and pattern such as inter-organization, intra-organization, and collaboration pattern. Contemporary technical tools enhance collaboration regardless of time and space. People collaborate in order to get better results. People use Facebook collaborative tools, for example, for news and event announcement, and to communicate with their friends.

Baldwin, Shen, and Brandon (2009) highlight that modern computing technologies (refer to Figure 2.4, page 29) provide different mode of collaboration in collaborative working environment. The two dimension and four quadrants differentiated by time and space are meant for people to communicate and work collaboratively. In this case, the key resources for collaboration are people, process, technology, and data.

Fink (2009) has highlighted three organizational process roles, namely, static concept, dynamic concept, and transformational concepts. "Static concept" refers to the

coherent, coordination and integration of the entire organizational process to minimize miscommunication; “dynamic concept” points to the organizational learning to perform better, quicker, and to get improvement opportunity; and, “transformation concept” refer to making innovation on reconfiguration of organizational process not only to reduce cost but also to sustain competitive advantages. E-Collaboration sustains organizational competitive advantages (refer to Figure 2.5, page 32) by playing organizational process roles on coordination, learning, and innovation.

In short, the present study defines e-collaboration as people who have common goals working collectively for mutual interests through ICT. ICT not only includes computer software, hardware and network but also integrated system and platform of them. Microsoft SharePoint, Lotus Notes, Web 2.0, and other GroupWare are the CIS that manage information, communication, and technology. It synthesizes ICT that is based on human collaboration effort. People not only work together but also foster joint responsibilities by helping one other towards common goals. In the next section, the researcher shall focus on the managing task through CIS.

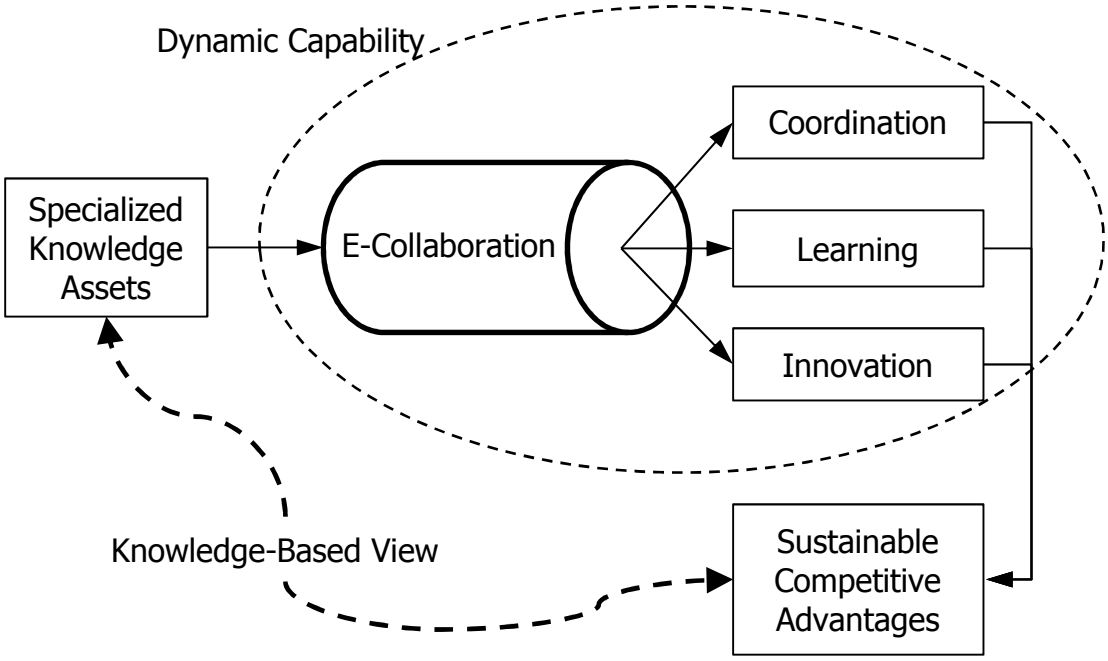


Figure 2.5
E-Collaboration Sustains Organizational Competitive Advantage
Source: Fink (2009)

2.2.3 Electronic Collaborative Management

Pasmore, Stymne, Shani, Mohrman, and Adler (2008) lay bare the meaning of management as a system behavior which aspires to influence a person or collective team to perform. Management is the handling of person or team's practice. According to National Economic Development Committee (NEDCIN, 2009), collaborative or co-management is sharing several key elements in common. These key elements are collaborative management process that engages multi-party approach. The multi-party is shared responsibility on decision making, resources, workloads, and outcomes in the collaborative management process.

Jones (2001) pointed out that an organization needs to have a systematic practice that provides persistent and well-indexed tools for collaborative knowledge management, social and knowledge network analysis. This systematic practice tool is appropriate to monitor organizational performance, anticipate and attend to feedback and outcome measures, design the change avenues, and then take action effectively. It is to ensure information technology supports organization learning effectively.

Bessagnet, Schlenker, and Aiken (2005) state that e-collaborative technologies improve management through a platform on which individual and collaborative team work, share knowledge, and communicate collaboratively. This establishes e-community or forum that requires documents sharing, notification, creation of shared rooms, and group agenda. E-learning environment is meant for distance learning, dynamic and interactive communication in order to initiate and extend contacts with the school and it business community.

Wikipedia, for instance, is a form of collaborative knowledge management tool that accumulates global knowledge, know-how and experience. Reagle (2010) highlighted that Wikis are a means by which people using ICT tool to work together: online, asynchronous, possibly anonymous, incremental, and cumulative. This Wikis allows people to accumulate intelligence, skill and knowledge collaboratively, and shared them to others. He addresses Wikis that make use of the neutral point of view (NPOV) which permits collaborators to work together online, asynchronous, possibly anonymous, incremental, and cumulative way to construct Wikipedia encyclopedia knowledge base.

To recapitulate, the present study defines e-collaboration as a cross function of administrative colleagues with common goals that enables them to plan, lead, organize, and control collective tasks for mutual interests through ICT. ECM is meant for the management of colleagues who manage in turn the collaboration projects tasks through CIMS and CIS. As illustrated in Figure 1.2 (page 19), Moodle CIMS and SharePoint CIS manage e-collaboration and collective tasks. They also manage multiple entities or parties for sharing their knowledge, talents, skills, information, risks, and resources in CIMS and CIS to achieve their common goals. The model contributes to organizational development and growth.

2.3 Emerging ECM Environment

Sampson (2009) asserts that Microsoft SharePoint Technologies made seamless teamwork which cultivates well-being collaborating team, health working environment and organizational culture through enriched information sharing. As highlighted in Figure 2.6 (page 35), the collaborate members could access relevance business information, use it for decision making, publishing and managing information for contextual awareness. All these enforce structure on information to make more efficient and reliable solution when needed.

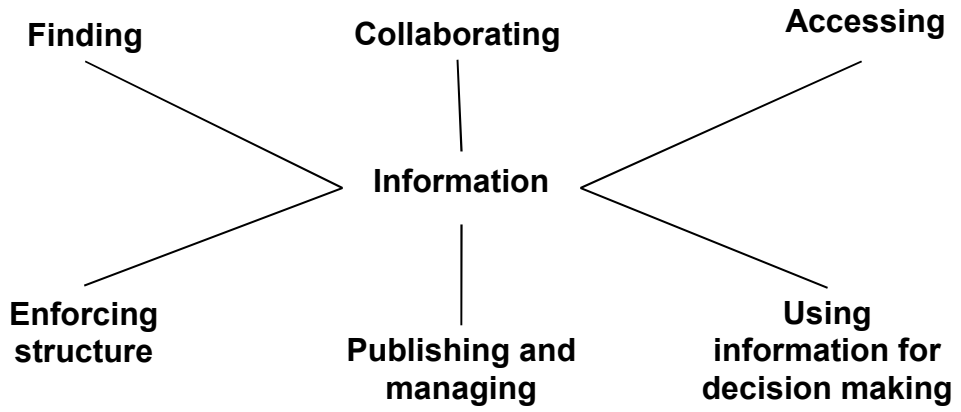


Figure 2.6
SharePoint is Useful for Many Information-Related Processes
Source: Sampson (2009)

Campbell and Brown II (2012) recommend the deployment of Microsoft SharePoint that is based on organization-wide CIS to accelerate collaborative organizational knowledge sharing, updating, preserving, and work flowing. They mention that mature and powerful collaboration platform could give big result in a low budget if it is fully utilized through diffusion of innovation and training (Rogers, 1983). But, Sampson (2009) pointed out that SharePoint CIS is also facing difficulties in cross-cultural communication and interaction if people are not willing to collaborate on text-based collaboration. Therefore, the ECM on collaborative tasks is needed for various walks of people in order to make collective action.

Becker-Kornstaedt and Shull (2012) has applied the tool of "EMPEROR" (Experience Management Portal using Empirical Results as Organizational Resources) approach at Defense Acquisition University. The tools itself collects experience reports on applications which are shared by the practitioners. These experiences are handled,

summarized, and interpreted by the experts worldwide, who work collaboratively and constructively and tap the tool according to their experience. Liebowitz (2012), who deploys a "university model" in University of Maryland University College, creates a knowledge sharing environment for promoting research and scholarship activities. It is collaborative in that it develops a new ways of synthesizing and generates new ideas.

Liebowitz (2012) also highlights collaboration and interaction as critical success factors to knowledge sharing, making connections, and generating new ideas. IBM's Global Business Solutions and Learning and Knowledge Organizations have used the collaboration and interaction model to derive their business values (Table 2.1 page 37). The innovation, passion, and value-strengthened workplace as a virtuous cycle to encourage agility, talent, and research are conducive to pedagogical outcomes that bridge the gap between learning and work.

IBM also makes use of ECM on organizational knowledge management. It advances IBM's staff professional development, working quality and productivity, sharing the lessons that had been learnt, benchmarking best practices, inviting feedback, and intimacy of collaboration. Organizational-learning culture is imbedded in IBM business processes that allow knowledge to be transferred among individual, group and organizational levels (Abel, 2008).

Table 2.1
IBM's Global Business Solutions/Learning and Knowledge Organizations proposed Value Matrix for Knowledge Sharing

Professional Development	**Productivity**
• Increase visibility, recognition and reputation in organization • Foster personal connections and growth in personal networks • Promote culture of continuous learning/knowledge-sharing	• Accelerate time to locate & access to expertise • More rapid identification of people who can positively influence business outcomes • Increase opportunities for innovation • More expedient in creating & sharing of knowledge • Reduce time to perform activities
Knowledge Sharing	**Collaboration**
• Increase awareness and leverage of expertise in the business as it evolves • Increase x-department/x-geo collaboration • Accelerate pervasive dissemination of knowledge (codified and tacit) • Optimize the use of content through social networking	• Increase amount of informal and formal cross-departmental & cross geo-collaboration • Visibility of formal and informal communities information flow/collaboration & health of network • Visibility of expertise & faster reciprocal contact due to social network • Increase efficiency and effectiveness of collaboration

Source: Liebowitz (2012)

This knowledge sharing database, hence, requires global talents to contribute their collaborative management. In turn, the contributed knowledge requires talents to filter, compile, edit, proofread, and organize them. This administrative background of knowledge sharing database seldom been emphasized in academic institutions. It involves how to create better ECM beyond face-to-face collaboration or cooperation. Thus, there is a need to develop the value chain of ECM on this knowledge sharing database. The e-collaborative knowledge database management uses the value chain model for knowledge management (Almarabeh, Abuali, Alsharrab, & lasassmeh, 2009) and generates above average marginal return.

Granted, one may surmise that the ECM sustains customers and business volume with development opportunity and strength. It also sustains organization flourishing and individual efficacy. The ECM, which plays an imperative role on integrating departmental management context to a whole organizational operation, is being built upon effectiveness and efficiency. It is worth mentioning that and explanation of this ECM behavior and skill on CIS is important for the forthcoming of organizational management.

2.4 Existing ECM Studies

Most of existing CM studies concentrates in the area of environment preservation and healthcare industry. Rarely does ECM study use electronic platform, applying PAR and in HEI. This section highlights recent studies of CM and their findings. It is from these studies that the researcher intends to fill gap concerning the domain of the ECM knowledge. This finding is, most helpful to our study of ECM on TLC in KUS.

2.4.1 Previous Models and Findings

The study on human-focused ECM model is rare in the past. Relevant study of ECM is hard to retrieve or search from the published articles or journals database. For example, Ansell and Gash's (2007) formulation on "collaborative governance theory" is similar to collaborative management model. Project members are making collective decision on implementing public policies, managing public programs, and maintaining public assets. They resolve sector-specific governance issues such as

site-based management of schools, community policing, watershed councils, regulatory negotiation, collaborative planning, community health partnerships, and natural resource co-management.

The question, however, remains as to how would one show the variables that enhance collaboration process? As the researcher shall show in our in Figure 2.7 (page 40)**,** "starting conditions" are the resources or liabilities during collaboration. It sets the basic level of trust, conflict, and social-capital influence collaborative process; while the "institution design" sets the basic ground rules under which collaboration takes place; the "facilitative leadership" provides essential mediation and facilitation for the collaborative process. The three variables, however, are influenced by the iterative and nonlinear cycle of "collaborative process" variable.

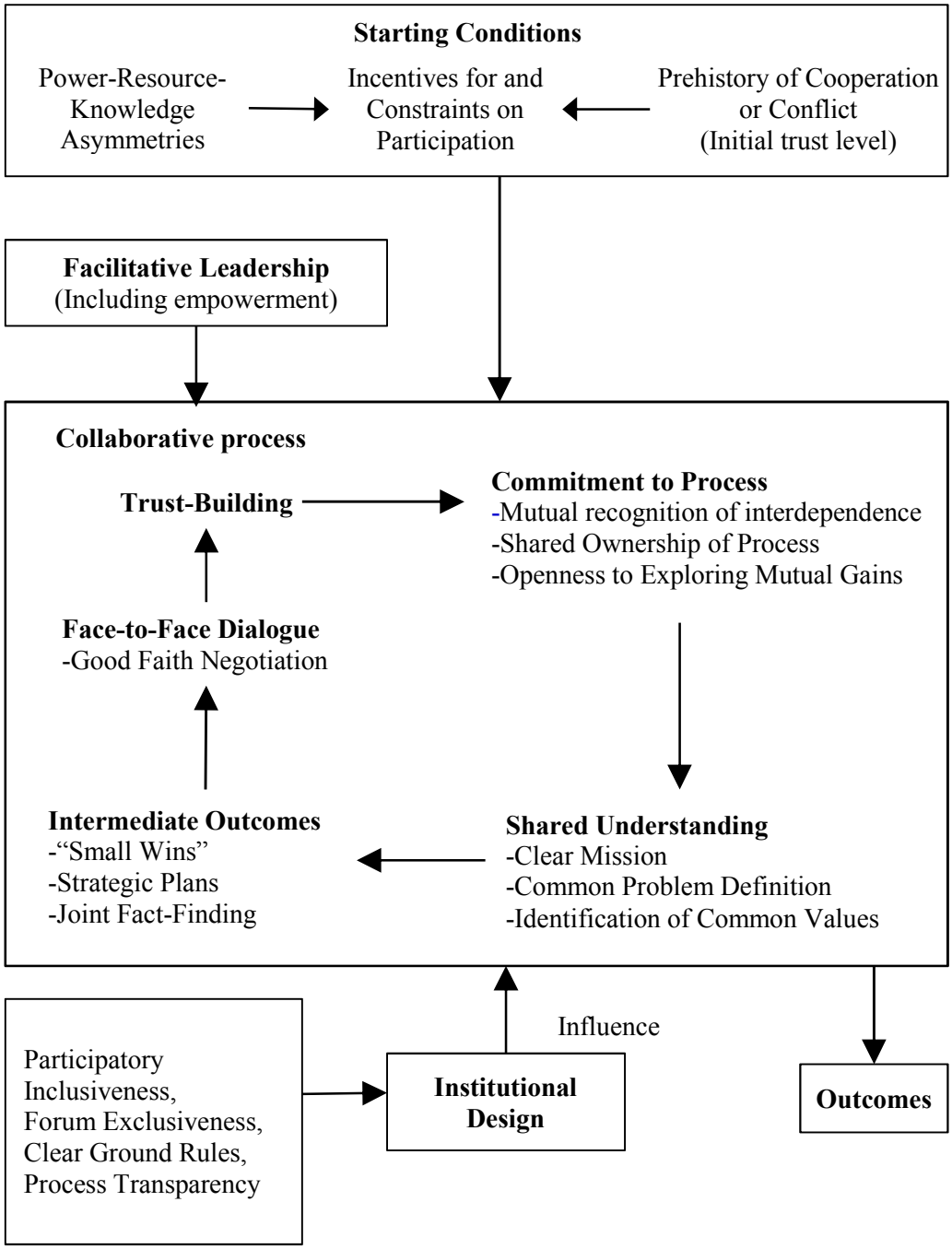


Figure 2.7
A Model of Collaboration Governance
Source: Ansell and Gash (2007)

The “collaborative process” enables the stakeholders to have a collective decision making process in order to make or implement public policy or manage public programs or assets. It starts from the “face-to-face dialogue” stage which embraces good faith negotiation among stakeholders in order to build trust relationship, mutual respect, shared understanding, and commitment, hoping that the time that is invested would engender trust building, proficiency and interdependency.

Walsh and Kahn (2010) have proposed a different approach to establish and sustain collaboration model for higher education. Their findings are relevant to our current study of ECM for HEI. The model of collaborative working in higher education contains the factors of context, practice, professional dialogues, engagement, and social vehicles (refer to Table 2.2, page 42). The model in HEI requires ICT tools to complement its social vehicles in order to achieve global status. It also needs collaborative management for its context such as resource sharing, knowledge transfer, collaborative research, and emergent working. Both underscore the importance of collaboration brokers who play a role in managing, facilitating and catalyzing collaborative work. This makes collaborative management all the more important in HEI collaboration.

Table 2.2
Model of Collaborative Working in Higher Education

Social vehicles –			
• Technology & mobility bridging distance; • Practicing in new ways as disciplines; • Designed for inclusion; • Global in reach			
Practice –	**Professional dialogues –**	**Context –**	**Engagement –**
• A focus on global problems; • Exclusion of others through inclusion; • Working across disciplines; • New conceptions of collaborative practice through technology	• Discussion across cultures in global working; • Inclusion of varied perspectives; • Virtual dialogues; • Inter-professional dialogues	• Resource sharing; • Knowledge transfer; • Collaborative research; • Emergent working	• Virtual identities & engagements; • Enthusiasm & commitment stimulated by work at the cutting edge of new disciplines & encounters between disciplines; • Fostering the engagement of others; • Trust & mutuality

Source: Walsh and Kahn (2010)

Kezar and Lester (2009) developed a collaborative context in HEI which consist of building commitment, commitment, and sustaining commitment stages. The model is most relevant to the present study for teaching and learning in a number of ways. It begins with the building of commitment stage, which consists of four elements: external pressure or message support collaboration, networks with those authority positions to help communicate new collaborative values, and learning to use the collaboration ideas and information from a variety sources.

Besides, it also includes realizing commitment stage, which facilitates leadership within the network that provides momentum and energy with organizational mission, vision, and educational philosophy in order to make the commitment real, tangible and rewarding. But the sustaining is the last and most important to develop new or integrated structures and process and rewards in order to sustain the collaborative networks.

The aforementioned model summarizes (as the researcher shall explain in detail in Table 2.3, page 44)**,** the evolution of collaboration model**.** The researcher, however, finds the emphasis of previous model is confined to human relationship building, goal oriented team working, and organizational structure design. Little consideration has been given to contemporary ICT collaborative working environment. The present study shall attempt to fill the gap by extending previous findings and collaboration.

Table 2.3
Models of Collaboration Development

	Author of model	Critical success factors	Stages of development	Formal vs. informal processes	Importance of initial conditions critical
1	Kanter (1994)	relationships in corporate	•courtship •engagement •commitment	Informal process: •sense making •learning •about each other	• network, • values, • external pressure, • learning
2	Ring and Van de Ven (1994)	relationships and learning in corporate	•negotiation •commitment •execution	Informal process: •building trust •reach agreement of obligations	•clear goals, •trust
3	Mohrman, Cohen, and Mohrman (1995)	assessment and learning in corporate	Less formal stages: •laying foundation •designing •evaluation	Formal process: •mission •work modified •training •processes altered •rewards	No initial conditions must be in place
4	Doz or Arino and Torre (1998)	•Learning and assessment. •For Arino and Torre: relationship more than learning in corporate	•groundwork structuring •formalizing •all with period of evaluation and adjustment	Formal process: •environment •task •process •skills •goals	• task definition • expectations of performance • motives and others
5	Ansell and Gash (2007)	•contingent propositions •cause-and-effect •relationships in corporate	•starting conditions •institutional design •collaborative process	Formal process: •face-to-face dialogue •trust-Building •commitment to process •shared Understanding •intermediate outcomes	• power-resource-knowledge asymmetries • prehistory of cooperation or conflict
6	Kezar and Lester (2009)	relationships in HEI	•building commitment •commitment •sustaining	Formal process: •values, learning, external pressure •sense of priority, mission •integrating structure •Rewards •Network throughout	•network •values •external pressure •learning
7	Walsh and Kahn,(2010).	• virtual identities & engagements • enthusiasm & commitment • fostering the engagement of others • trust & mutuality in HEI	•discussion across cultures in global working •Inclusion of varied perspectives •virtual dialogues •inter-professional dialogues	•a focus on global problems •exclusion of others through inclusion •working across disciplines •new conceptions of collaborative practice through technology	Context: •resource sharing; •knowledge transfer; •collaborative research; •emergent working

Source: Adapted from "Models of Collaboration Development" by Kezer, 2005.

2.4.2 What do the Previous Studies Fail to tell us for the Knowledge Gap?

ECM introduces a new perspective on the concept of collaboration, e-collaboration and management subject. The present study is based on collaboration, e-collaboration and management studies which move further the ECM on TLC. So there shall be knowledge-based, relationship-based, theory-based, methodological, and analytical five types of knowledge gap found in literature reviews, as put forth by Murray and Beglar (2009) in Table 2.4 (page 46). The researcher adds the potential gaps of ECM study on TLC for HEI in fourth column (refer to Table 2.4, page 46). There are unknowing knowledge-based gap in ECM, relationship-based gap is using social technology for ECM, theory-based gap is ECM within HEI colleagues, methodological gap is using PAR, and analytical gap is using grounded theory approach.

Austin and Baldwin (1991) have reached the following four conclusions based on their study of faculty collaboration. First, it concerns the form, process and the extent of academic collaboration. Second, it concerns the individual dimensions of academic colleagues' collaboration such as styles, roles, pattern, and behavior. Third, it concerns the contexts for academic collaboration through policy and administrative practices. Fourth, it concerns the outcomes, benefits, and satisfaction of academic collaboration. Few researcher uses qualitative and PAR approach to fulfill those knowledge gaps. It is due to ECM which is not wide prevalent in local HEI or even commercial organizations.

Table 2.4
Five Types of Gaps for ECM on TLC Study

No	Types	Description	Potential gaps
1	Knowledge-based	Phenomenon little known or unknowing	Rare in human focused ECM on TLC for HEI faculty
2	Relationship-based	Unsure variables' relationship on certain well-reasoned variables	Rare in using social technology for human focused ECM
3	Theory-based	Uninvestigated thoroughly or untested in particular context or individual group	Rare in HEI colleagues' use of human focused ECM
4	Methodological	Unapplied research design or methodology to the phenomenon	Rare in using PAR for human focused ECM study
5	Analytical	Unapplied analytical approach to the phenomenon	Rare in using GT approach for coding and develop human focused ECM model

Source: Adapted from "Inside Track Writing Dissertations and Thesis" by Murray and Beglar, 2009.

Mattessich, Murray-Close, and Monsey (2001) all drew on 414 research studies which include health, social science, education industry and public affairs arenas. They discovered twenty success collaboration factors that are related to the environment dimension, membership characteristics dimension, process and structure dimension, communication dimension, purpose dimension, and resources dimension which need further explication. First, the factor relates to environment dimension is the "history of collaboration or cooperation in the community", "collaborative group seen as a legitimate leader in the community", and "favorable political and social climate". Next, the membership dimension which characterizes mutual respect, understanding and trust, "appropriate cross section of member", "members see collaboration as in their self-interest", and the "ability to compromise". Then, the factors that relate to the process and structure dimension, "members share a stake in both process and

outcome", "multiple layers of participation", "flexibility", "development of clear roles and policy guidelines", "adaptability", and "appropriate pace of development". Subsequently, factors which relate to the communication dimension include "open and frequent communication", "established informal relationships", and "built informal communication links". In addition, the factors that relate purpose dimensions are "concrete, attainable goals and objectives", "shared vision", and "unique purpose"; and finally, the factors that relate to the dimension resources are "sufficient funds, staff, materials, time", and "skilled leadership". All these factors are making collaboration effective within organization or across different organizations. These factors, however, are more pertinent to collaboration review studies which do not focus on collaborative management study, and the study object does not use collaborative information technology for collaboration.

Out of the 137 cases surveyed by Ansell and Gash (2007), identify some collaboration process factors: face-to-face dialogue, trust building, commitment developing, and shared understanding. They found "small wins" deepens trust, commitment, and shared understanding in a virtuous cycle of collaboration. There is an encouraging virtuous cycle of trust building and commitment with the small win ensues from collaboration intermediate outcomes. That said, their study focuses on managing collaboration process which does not include using CIS and technology. Based on this managing collaboration process model, the researcher extends it with the use of CIS. The stated model provides the researcher an opportunity to extend it into collaborative management. Collaborative management which includes daily

administrative operation and resources arrangement has led to the depth of study more meaningful than collaborative governance.

Czajkowski (2007) identifies six collaboration factors as synthesized from literature: trust and partner compatibility; common and unique purpose; shared governance and joint decision making; clear understanding of roles and responsibilities; open and frequent communication; and, adequate financial and human resources. His study includes 52 Academic Quality Improvement Project (AQIP) member institutions of North Central Association of Colleges and School in the United States. As illustrated in Table 2.5 (page 49), the collaboration success measurement model underpins Gray's (1989) "collaboration theory" which includes precondition, process, and outcomes stages. Although the present study focuses on collaboration success measurement model for HEI collaborative partnerships, it does not consider social-technology dimension, and so lack of the use of CIS in collaborative management study.

Table 2.5
The Collaboration Success Measurement Model for Action Steps

No	Precondition Stage	Process Stage	Outcomes Stage
1	Identify benefits for the institutions	Define roles and responsibilities	Collect and review measurable data
2	Timing – Scan political climate	Set formal communication channels	Determine if goals were met
3	Timing – Scan social climate	Monitor political/social climate	Assess accuracy of problem domain
4	Define purpose and attainable goals	Adjust group membership	Feed information back to process
5	Select partners you respect/trust	Select a skilled convener	Complete summative evaluation
6	Select appropriate members	Create decision-making process	Continue/disband the collaboration
7	Commit human resources	Develop measures for goals	Identify emergent problems
8	Assess trust levels	Assess trust levels	Assess trust levels
9	---	Complete formative evaluation	---

Source: Czajkowski (2007)

It has been asserted by the researcher that HEI management domain is complex as compared to healthcare management or environment management domain. This is because of the versatile curriculum contents, different delivery process, auxiliary learning devices, multipurpose research labs and teaching equipment and devices, and, hence, broad and depth of professional knowledge, various sorts of discipline know-how and skills which are making complex TLC. Therefore, to incorporate the various factors of TLC is not only critical but also important to HEI management. Kock (2007), for example, has pointed out action research which aims at both improving the research objects' capability and generating new knowledge, which in turn achieve

both at the same time. Its dual goals satisfy the subject of research on ECM on TLC and in ECM on TLC fields of inquiry to the research community. This means that PAR assists HEI management to resolve TLC management issue and contribute to the knowledge required for developing a human focused model of ECM on TLC for HEI.

Although many other researches have stressed upon "collaborative management", they have yet to cover ECM on TLC in HEI and academic organization. And also, Zator (2011) aptly suggests that further "collaborative management" research opportunity emphasize on the stakeholders' trust, openness, transparency negotiation, structure of their collaboration, political influence, and he argues that resiliency or adaptability of collaborations is required, specifically to exam the skill and knowledge capabilities with the commitment of the collaboration's stakeholders. The present study will be greatly enhanced by the aforementioned scholars on collaboration, e-collaboration and ECM.

2.5 Underlying theories

This study underpins the negotiated order and social exchange of two social theories to facilitate human factors that influence ECM on TLC. In addition, work system theory as the ICT theory which associates with both social theories to govern the research process on using both Moodle CIMS and SharePoint CIS ICT tools. Therefore, this section detail how these theories relates to ECM on TLC.

2.5.1 Negotiated Order Theory

Management process is based on the negotiated order. It was Strauss (1978), who helps to define the negotiated order theory which represents the emergence, change, and temporality process along with the contextual nature of order and the constant change of society in constant segmentation and fragmentation of social orders. But negotiation requires omnipresence of specific power relations to aim for rationalistic and efficiency-based outcomes for individuals, groups, organizations or societies. He emphasizes that organizational relationships must be accompanied with negotiations because social order is negotiated order; negotiations are patterned after or structured with conditions, character, and consequences for persons and organizations; negotiation's products are either or the contracts, understandings, agreements, rules, etc. With temporal limits and negotiator to be reviewed, reevaluated, revised, revoked, or renewed. In short, the negotiated order had to be worked at, and the bases of concerted action needed to be continually reconstituted.

The above theory highlights constant change in a society, where specific power relations are omnipresent. Besides emergence, change, and temporality, the embedded and contextual nature of order, and the constant segmentation and fragmentation of social orders are evident. Negotiated order represents the process of change, along with the contextual nature of order and the constant change of society. Santos, *et al.* (2008) mention the negotiated order is a process of mutual adjustment and interpretation to have a coherence of understanding and actions.

The negotiated order theory as provided by Gray (1989) is a reconstructed collaboration theory. He summarizes collaboration as a dynamic process in finding the common ground for multiparty so as to resolve conflict, mitigate problems, join force, pool information, knock heads, find alternative solution and, eventually, to forge an agreement. Moreover, he asserts that a meaningful collaboration takes place when stakeholders are interdependent and complimentary to produce higher outcomes. Later, Gray (1996) developed "collaboration framework" (Figure 2.8, page 53) that appreciates planning, dialogues, collective strategies, and the negotiated settlements for four types of collaboration.

In terms of problem-setting, direction-setting, and implementation, there are three collaborating phases in negotiated order theory. There is iterative management processes for collaboration convener to deal with collaboration members or stakeholders. The researcher deems to harness appropriate collaboration members or stakeholders to identify the issues and commit to collaborate in problem-setting phase. Direction-setting phase is then for members of collaboration to explore the issues in depth and reach agreement or consensus about alternatives solutions. Finally, collaboration convener has to ensure collaboration members follow-through the collaboration agreement in the implementation phase.

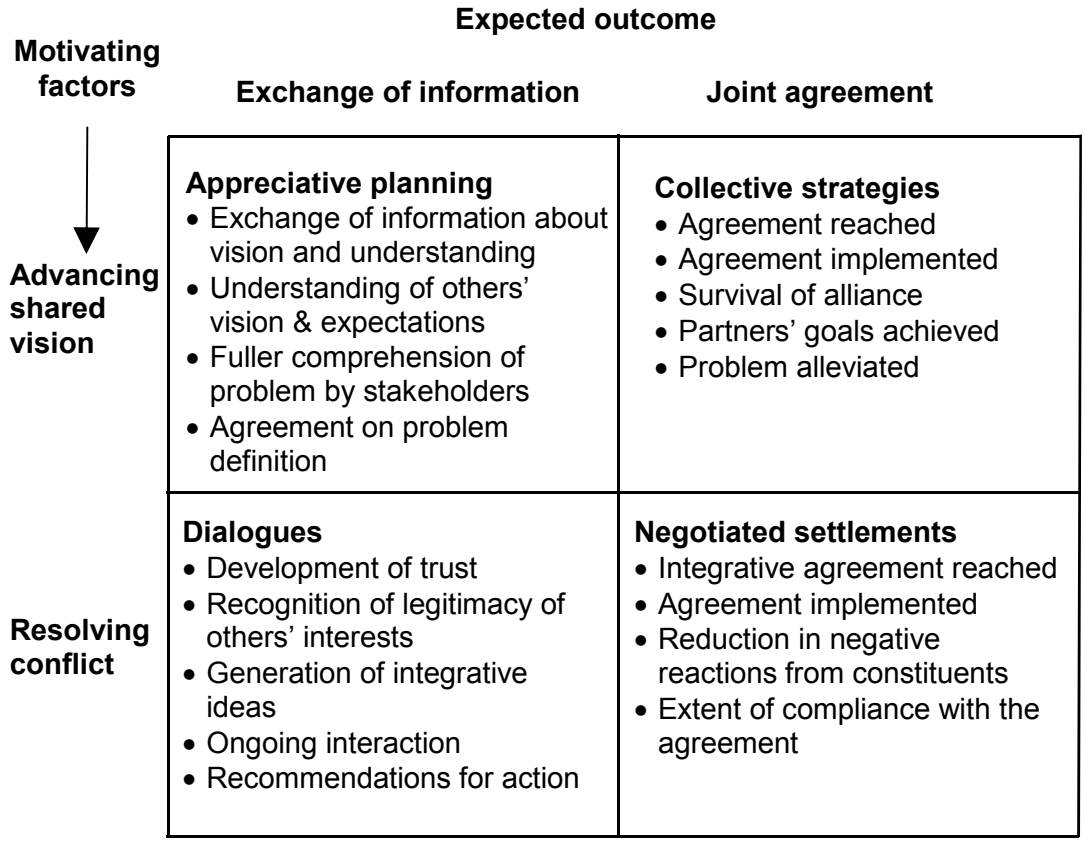


Figure 2.8
Negotiated Order Design for Collaborative Managing Better Outcome
Source: Gray B. (1996)

Flores and Claeys (2010) aver that reciprocity in collaboration requires the following practices as prerequisites:-

- to develop programs that are grounded on the need of the community;
- to commit resources that are appropriate and well-timed;
- to provide intensive technical assistance;
- to create formal written agreements;
- to inculcate patience in dealing with the change process and expand the involvement of others.

Ramasamy, Goh and Yeung (2006) report for example that "*Guanxi"* (sic relationship) includes trust, relationship, commitment, and communication affect knowledge transfer relationship. Good relationship among the participants of project collaboration means making intimacy in collaborative management. Trust is a major contributing factor to developing, maintaining, and solidifying relational synergy and intimacy for collaboration (Olaniran, 2009).

The researcher would want to propose that the negotiated order theory can help the present study to realize that ECM TLC needs all level of colleagues to involve and engage in collaborative management of their TLC in both Moodle CIMS and SharePoint CIS. Our theory highlights that both advancing a shared vision for all ECM on TLC participants and resolving their conflict when facing dilemma on different perspectives or interests. These participants always exchange information to enhance trust and collaborative relationship to form common ground and collective action. They shall be more enthusiastic and to voluntarily participate in ECM on TLC if policy that rules ECM on TLC is taking account of the benefits and interests. The policy is a joint-agreement that creates with majority view but respects those minority opinions. The negotiated order theory, as applied, is to ensure democratic collaboration.

2.5.2 Social Exchange Theory

Social exchange theory is a compliment to negotiated order theory. Most literature does not cover social exchange theory in collaboration process as an important issue.

The present study integrates this social exchange theory with negotiated order theory to accomplish collaborative management process. As Searle (1990) has pointed out aptly that social exchange theory comprise of five major fundamentals. First fundamental element is rationality notion on personal and environmental factors which could predict behavior. Second fundamental element is reciprocation exchange that enables the relationship. Third fundament element is negotiated social exchange which bases on an economical justice principle. Fourth fundamental element is individuals who seek to maximize their gains and minimize their costs in the exchange relation. And the fifth fundamental element is individuals who participate in a relationship out of a sense of mutual benefit rather than coercion. This means that social exchange theory underpins rational personal interest and fair beneficial of collective outcomes. This theory could sustain ECM on TLC process.

Some scholars summarize Blau's (1964) soci-economic perspective of social exchange theory that is rooted in economics, Domenico, Tracery and Haugh (2011), for instance assume that individuals who engage in social exchange because of the need or desire to acquire intrinsic or extrinsic rewards that are unable to obtain by themselves alone. It involves negotiated exchanging assets and resources process to harmonize organizational goals and practices. According to E. B. Foa and U. G. Foa (2012), these resources involve love, services, goods, money, information, and status. Moreover, it involves the reconciliation of dialectical tensions and creation of a new set of collaboration arrangement. The aforementioned processes synthesize collaboration outcomes to its members or stakeholders.

The stakeholders who affect or may be affected by the achievement of collaborative tasks are highlighted in the study of Freeman (1984). Freeman, Harrison, Wicks, Parmar and Colles (2010) all make use of stakeholder capitalism principles to intersubjective cooperation. Its aim is to enhance the process of value creation, trade, and sustained their needs and desires. The collaborative work easily moves through collaborative working together in order to accomplish their benefits and interests. Freeman's (2010) "stakeholder theory" explains the mutual interest relationship among lecturers, dean and academic supporting colleagues who make collaborative working. He points out that the stakeholders are individuals and organizations that affect or are affected by the activities of an organization. Finn (1996) discloses that the stakeholder strategies lead to successful collaborative process and positive collaborative outcomes. Successful collaborative working process employs stakeholders' positive relationships to sufficiently achieve collective problem definition, brainstorming alternative solution, and collaborative implementation.

ECM on TLC requires deans, heads, lecturers and supporting colleagues mutually make decision and implement action. Collaboration in managing brainstorming process generates best option and demonstrates internal strength, internal weakness, external opportunity, and external threat (SWOT) analysis (Figure 2.9, page 58). It utilizes collaborative brainstorming process for HEI to have a careful consideration on the consequences of HEI's actions. Brainstorming could resolve conflict and select best collective strategy and implementation process. Brainstorming invites the concerned deans, heads, lecturers and academic supporting colleagues' to embark on collaborative exchanges on how to effectively manage e-collaborative TLC. The

synthesized effort of brainstorming is to improve the HEI ECM on TLC which includes planning, organizing, leading, and controlling (POLC) elements.

The researcher argues that the brainstorming information exchange example could determine resources exchange, benefits exchange, and other form of economic exchanges for ECM on TLC participants. The theory itself underscores who the stakeholders in the input of exchange. For example, the participants who are competent in certain discipline or field can complement those colleagues who are weak. They will probably attain more than what they give when they work together on the common goal. The collective power is to synthesize the outcome. It could also enable individuals who cannot settle critical issues. For example, HEI colleagues exchange their received research opportunity and allocated momentary resources with other colleagues and together doing collaborative research shall better than monologue or one man show. They shall work more closely and intimately to explore new phenomenon or discover new knowledge which contribute to academic progress and industry. Therefore, social exchange theory definitely could make ECM on TLC more effective and efficient as well as sustain its development.

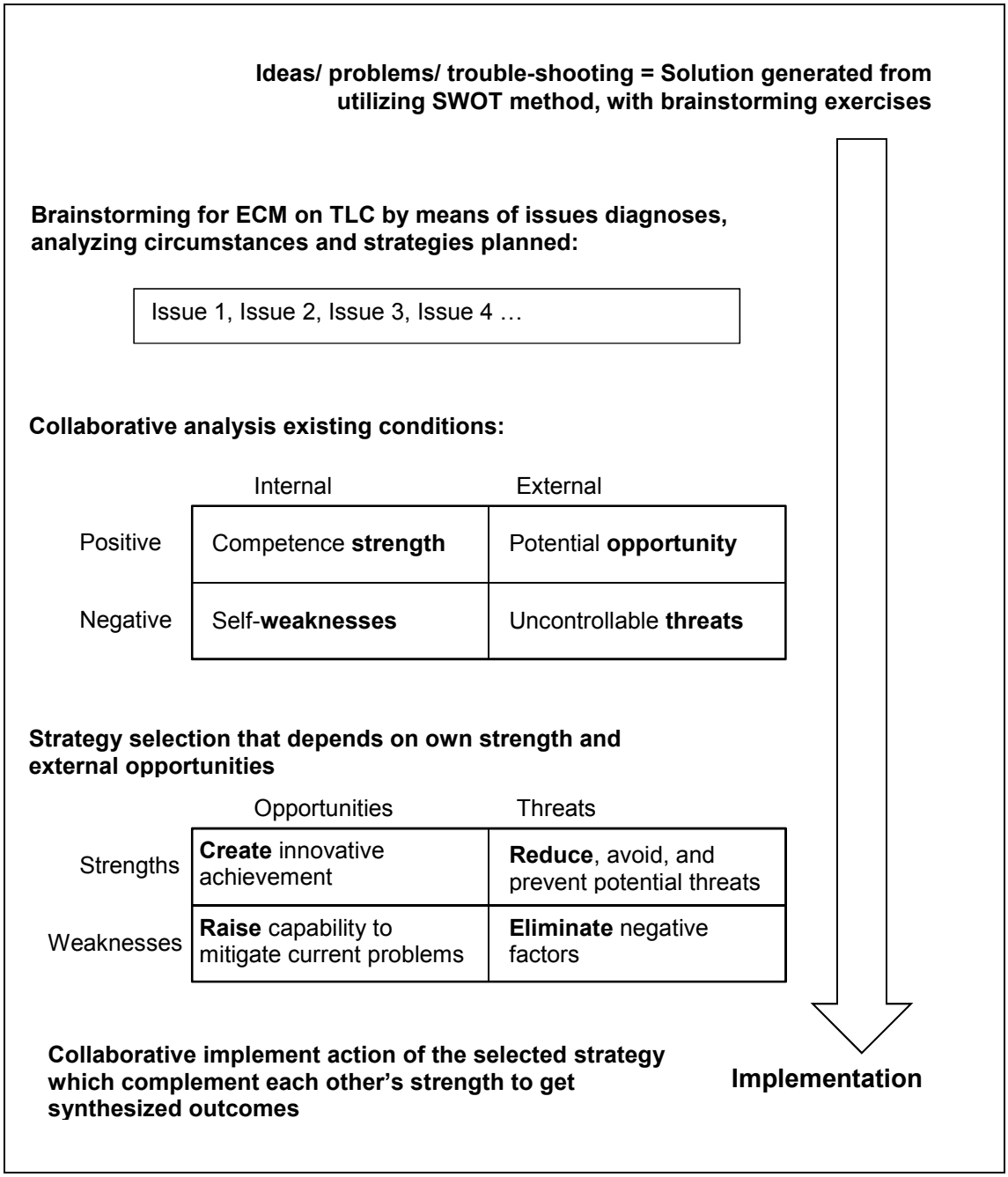


Figure 2.9
Collaborative Brainstorming and Synthesizing Effort.
Source: Adapted from "Utilizing Stakeholder Strategies for Positive Collaborative Outcomes" by Finn, 1996.

2.5.3 Work System Theory

Given that work system theory is to be reckoned as complimenting negotiated theory and social exchange theory on the process of negotiated order and social exchange protocol on ICT platform, Alter (2013) uses work-system theory as an action project work system approach to connect collaborated participants, curriculum contents, collaboration information systems or computer support cooperative work (CSCW) system for ECM on TLC in KUS. As shown in the Figure 2.10 (page 60), it indicates work system framework that include participants, information, technologies, processes and activities, product and services, customers, infrastructure, environment, and strategies consisting nine elements in a work system. The work-system life cycle model has initiation, development, implementation, operation and maintenance, the four phases of iterative process for work system theory's explanatory theory. It scaffolds this ECM on TLC study. It is especially useful for our understanding of the process of ECM on TLC in KUS.

Both work system framework and work system life cycle provide the basis for work system method or work system approach. Alter (2006) highlighted work system method as a common basis of communication that supports collaboration between business and IT professional as well as change management to organization. It is a work practice theory and is rooted in socio-instrumental pragmatism (Petersson, 2008). Recker and Alter (2012) argues that work system method is an appropriate pedagogical tool for introducing inexperienced participants to information systems, their role in organizations, and the challenges that relate to their management. Thus,

the present study applies work system method as a base study framework for ECM on TLC in KUS.

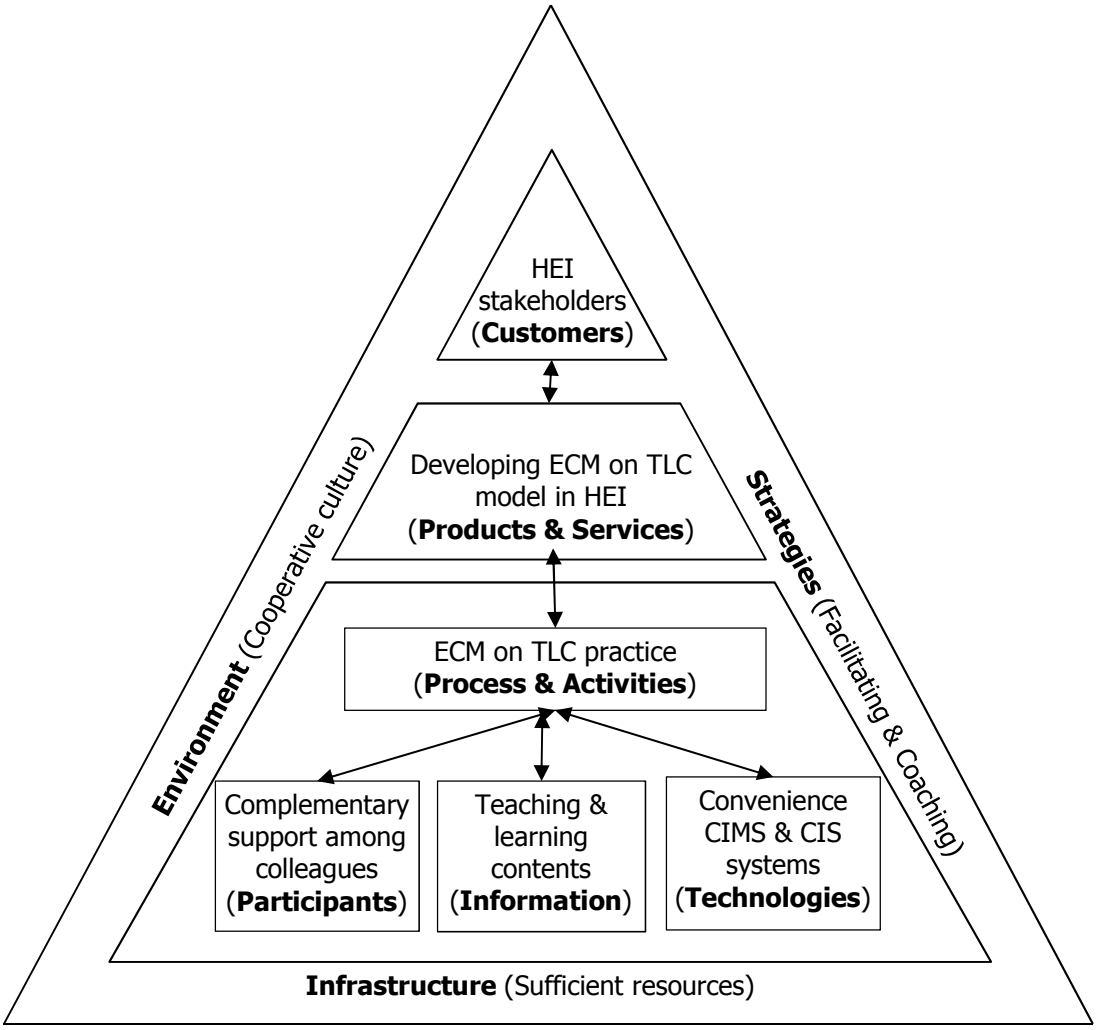


Figure 2.10
Work System Framework Guiding ECM on TLC
Source: Adapted from "Work System Theory: Overview of Core Concepts, Extensions, and Challenges for Futures" by Alter, 2013.

Both negotiated order theory and social exchange theory are insufficient to engage both Moodle CIMS and SharePoint CIS. Work system theory offers the researcher the opportunity to explore ECM on TLC process which is completely in line with work system such as participant factor, information factor, and technology factor. First, ECM on TLC practice is process factor. Next, both faculties' colleagues and academic support colleagues' complementary support among each other become the people factor. Then, TLC is information factor which for ECM. In addition, both Moodle CIMS and SharePoint CIS are technology factor. Moreover, these three factors are complement to negotiated order theory and social exchange theory on human factor perspective applying Moodle and SharePoint collaborative information technology to manage TLC information.

Three factors outside the work-system are critical and directly influence to this ECM on TLC study. They are first and foremost strategy factor on PAR planning. HEI infrastructure factor is representing by sufficient resources. HEI environment factor is the cooperative working culture. Moreover, one must take into accounts the HEI student as customer factor which consider as partially inside and partially outside this ECM on TLC work system because student are HEI stakeholders who often participate in this management work system's processes and activities. Finally, there is the product and services output factor which develop ECM on TLC model in HEI as the outcome of the work system.

2.6 The Way Forward

So, what is the future of ECM on TLC? This is to explore what the driving forces are, the features of the development process stages, and why it is critical for the initial conditions. Its future depends on how to complement insufficient explanation of the existing theoretical and practical models. Collaborative management on TLC shall improve the faculties' competence, curriculum quality, and help to develop HEI competitiveness.

Dalkir (2005) for example, has pointed out knowledge sharing occurs quite efficiently and effectively in communities of practice (CoP) where its members share professional interest and goal. O'Dell and Hubert (2011) elucidate CoP are the community members freely create, share, and use information and knowledge; they work together toward common purpose; and they are supported and rewarded for transferring knowledge.

Collaboration could improve learning activities such as course works and assignment. Next, faculties could also continuously improve their competence. Both collaborative teaching and learning management develop HEI synergy and sustain HEI competitive advantage. Hence, the present study is applying this technology electronics to explore ECM on TLC of interdisciplinary faculties and academic supporting colleagues.

Fink (2009) mentioned that the coordination facilitates coordination among individuals, groups, and organizations which serve primary functional role of e-

collaboration. Next, he emphasizes on e-collaboration as a facilitating mechanism for learning. Thus, ECM colleagues can boost their knowledge creation and sharing processes. As a result, the mechanism underlying the specialized knowledge assets from ECM colleagues could make e-collaboration produce new innovation of ECM and sustain HEI competitive advantage.

In short, the ECM as proposed in the present study is grounded on Alter's work-system method, Ansell and Gash's collaborative governance model, Gray's collaboration theory as well as is rooted the two theories of negotiated order and social exchange. Our study is to extend Kezar and Lester (2009) HEI collaboration model in electronic collaborative working platform and to further develop Walsh and Kahn (2010) HEI collaborative working model on electronic dynamic collaborative management process model.

Based on the above review, preliminary ECM process proposes (Table 2.6, page 64) the use of action research to explore ECM context. It contains three underlying theories: negotiated order theory, social exchange theory, and work system theory. The negotiated order theory is by far the catalyst of ECM deployment. Social exchange theory is to sustain ECM practice. Work system theory leverages ECM performance.

Table 2.6
Preliminary Participatory Action Research Guideline for ECM on TLC Study

Evolution Route	Evolvement from theories into practices
Underpinning theories	1) Negotiated Order Theory for catalyzing ECM deployment. 2) Social Exchange Theory for sustaining ECM practice. 3) Work System Theory for leveraging ECM performance.
Strategy in ECM process	1) Catalyzing collaboration by convenience CIMS & CIS (Technology); 2) Proactive attitude, friendly relationships, capability and competency of individual from reciprocal support among members (Participants); 3) Allocating organizational resources and sharing personal practices for TLC (Information)
Importance of initial conditions	1) Strategies (Facilitating & coaching); 2) Infrastructure (Sufficient resources); 3) Environment (Cooperative culture)
Stages of development	1) Envision for individual competency and HEI competitive advantages value. 2) Co-construction in ECM on TLC process for having common goal, adaption, and collective accountability. 3) Appreciation for reciprocally learning, doing, and synergizing efforts. 4) Sustenance for effective community of ECM on TLC practice. .
Participatory action research cycles	1) Advocate cycle through envision and co-construction. 2) Adapt cycle with co-construction and appreciation. 3) Align cycle on appreciation and sustenance.

There are three strategies in ECM process: first, is technological strategy which catalyzing collaboration by convenience Electronics Collaborative Working Environment (ECWE) and CIS; second, is participants' strategy which advocates their proactive helping attitude, friendly relationships, capability and competency of individual from complementary support members; third, is information strategy that allocating organizational resources and sharing personal practices for TLC.

This work system theory embedded collaboration theory which considers three importance's initial conditions. First is facilitating and coaching strategies in initial condition to enhance ECM on TLC for HEI. Second is HEI need to allocate sufficient resources for constructing infrastructure of ECM on TLC such as Moodle, SharePoint, ICT, and human resources. Third is initial cooperative working environment and organizational culture which pivotal in ECM on TLC.

The four stages of development are to envision, co-construct, appreciate, and to sustain. Envisioning stage promotes what might be individual competence and HEI competitive advantages through advocating action in first PAR cycle, co-constructing stage diffuses what should be common goal, adaption, and collective accountability through advocating and adapting action in first and second PAR cycles; appreciating stage reinforces and valuing the best of what is reciprocally learning, doing, and synergizing through adapting and aligning action in second and third PAR cycles; and, sustaining stage systemizes what will be effective ECM through aligning action in third PAR cycle.

All the four development stages as mentioned above come from Watkins, Mohr, and Kelly (2011) highlighted Appreciative Inquiry's (AI) Global Excellence in Management (GEM) initiative Four-D Model. The researcher attempts to integrate the Dream, Design, and Destiny, and Discovery Four-D Model into this PAR to enrich ECM on TLC for HEI for the reason that it is the most comprehensible way to make organizational change according them. Lewis, Passmore, and Cantore (2008), for example, also pointed out this AI has facilitate organizational development for

transforming BP Castrol Marine business and revitalizing corporate values in Nokia, Therefore, it is worthwhile to combine both AI phase technique into PAR to implement this ECM on TLC for HEI.

ECM process engages participants, information and technology as stated in work system theory. Proactive participants with their helping attitude, friendly relationships, capability and competency of individual from complementary support participants will enhance our study of the ECM process according to negotiated order theory. Organized information with organizational resources allocating and personal practices sharing shall reinforce the effect of the ECM process according to social exchange theory. Convenience technology of collaborative work environment and learning management system shall spearhead our better understanding of ECM.

Besides, there exist initially three critical conditions which include infrastructure, strategies, and environment according to work system theory. ECM process needs sufficient resources to support information, communication and technology development. Appropriate facilitating and coaching strategies ensure ECM process shall also be on the track. Cooperative working environment and culture enables the ECM process smoothly. So, it is safe to say that the initial conditions mentioned are directly influences on ECM project kick off and pace of development.

2.7 Summary

This chapter is founded on the assumption that a wider view, insights in the past and the probability of foresight competence, and sagacious thought. The research direction and the theoretical framework of the present work are to explore from broader context and objects scope and to narrow down to the real root causes that affect effective ECM. The form of the present study is to inquire on the human behavior perspective factor of HEI colleagues when using contemporary CIS to ECM on their TLC for their faculty. It is presumably different from previous studies in terms of objects, methods, theories, and research domains.

Negotiated order theory, social exchange theory, and work system theory underpin the present study. It is beyond collaboration theory to study how to manage individual, group, and departmental collaboration with both negotiated order theory and social exchange theory in ECM. Work system theory as ICT theory which governs the whole ECM on TLC process for academic colleagues and academic supporting colleagues to use CIMS and CIS. In short, the preliminary guideline is using for conducting ECM's action study.

CHAPTER THREE

RESEARCH DESIGN AND METHOD

3.1 Introduction

The question as to why the researcher has selected KUS ECM as our case study and the rationale that governs our interpretive paradigm must now be given. To exhibit our point, Figure 3.1 (page 69) illustrates the rationale research. The aim of the present chapter is to explain our task from an inter-subjectivity perspective in our application of PAR to the ECM on TLC in KUS.

PAR has three continuous improvement cycles namely advocation, adaptation, and alignment with preliminary PAR guideline. Accounts of the action is analyzed and reviewed, and what happen after every action cycle's planning, learning and realizing, observing and inquiring will be provided in our arguments.

Our first step, therefore, involves the comprehensive data collection techniques which include KUS participants' observation, in-depth interview of KUS participants, and the mining data gathered from KUS's document. These collected data are analyzed with grounded theory to form the necessary themes and patterns. Next, the researcher will compare and contrast these themes and patterns so as to shape theoretical human-focused model of ECM on TLC in KUS. Finally, there is an overall assessment of the quality of the process with respect to its generalizability, reliability, and validity which is based on our case study of KUS. A summary of this chapter three's research design and method will be provided at the end of the chapter.

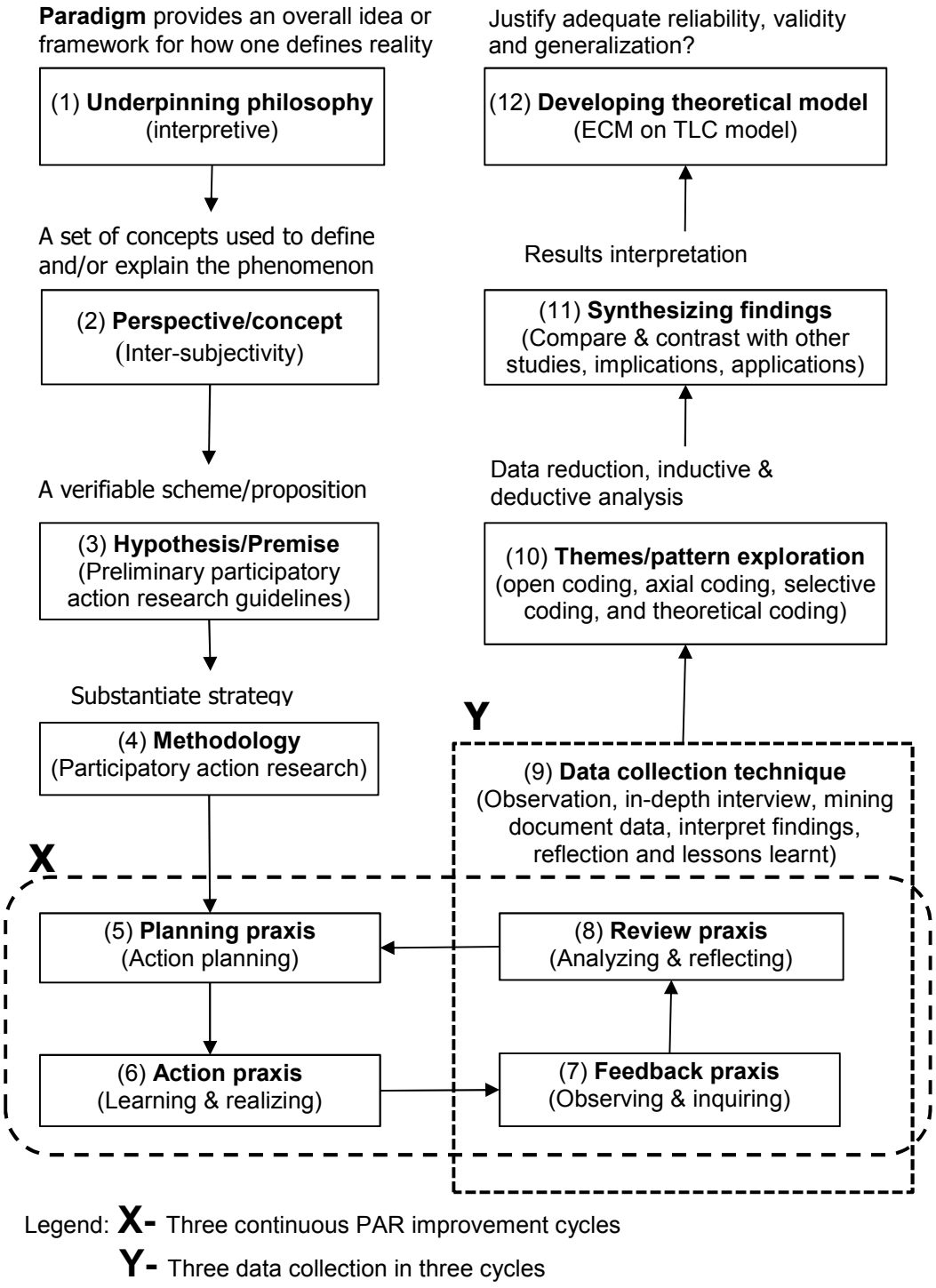


Figure 3.1
Research Flow for Developing a Human Focused Model for ECM on TLC
Source: Adapted from "Doing Qualitative Research: A Practical Handbook" by Silverman, 2010.

3.2 Considering KUS as a Case Study

Kolej Universiti Selatan (KUS), as it now stands, has been established by the Chinese communities as a non-profit organization HEI. Due to its non-profit orientation, employee salary and other compensation benefits or allowances in general are less attractive than those of public and other private HEI. Most of employees joined KUS are with passions, sacrificial spirits, and humane attitudes because they value education much of all the factors. Tangible monetary incentives may be the least determining factor to the employees. This uniqueness might engender different ECM outcomes in terms of motivation. That said, the transformation of KUS's status from college to university-college may trigger off a new set of issue, including monetary factors, motivations, and work attitudes.

KUS has recently been upgraded to university college status, which is betwixt between the college and university levels. The board of directors' vision is to develop KUS into be a full-fledged university, and their aim is to realize this vision with the five years transformation plans (Thock, 2013). The president of KUS, Thock, (2013) has laid stress on KUS's mission as "Nurturing the World's Talented Youths and the Mission of Hundreds years on Universal Man Education" during the 22nd convocation ceremony on 26th May 2013. KUS colleagues shall work in synergy to build an international university with due emphasis on multiculturalism and influence.

As a university college, KUS has currently adopts diversified and multiple disciplinary approach in its programmes. The scope of the programmes extends from undergraduate to postgraduate studies. Each curriculum embraces subjects from different disciplines.

These subjects are being accelerated in terms of its volume and complexity. Therefore, ECM on TLC platform is one of the promising factors and vital parameters to provide management convenience for all the faculty members and supporting workforce.

The rationale behind our present study is that KUS is still in initial stage of development and encounter understandably enormous challenges regarding capital turnover, employee capabilities, student-growth rate, and adequate extramural business partners. KUS also experiences challenges regarding bargain power, low status on the economic scale, and it is less attractive in capital investment for acquiring, developing and implementing its ECM on TLC. Performing action research on KUS is therefore challenging but of value because the endeavour will help KUS in time to grow gradually and to spearhead its competitive advantages. From PAR may even learn what scale, type, model, and feature of enterprise collaboration systems which best fits the ECM of HEIs from small to medium size HEI.

Furthermore, the researcher considers the advantage of KUS which has implemented Moodle CIMS for e-learning and lesson management system. Most of the deans and heads expect SharePoint CIS to be the permanently stored for their TLC. Therefore, Moodle CIMS and SharePoint CIS are the constituting factors to be considered in the present study. Besides, the researcher has focused on human social technology to find out the motivational factors among faculty members and administrative supporting colleagues in ECM. The researcher's participation in this ECM on TLC study could elevate the participants' perception and motives. This enables the researcher to adopt

the emic view, that is, to understand comprehensively on how to develop an appropriate human-focused model to implement enterprise CIS.

3.3 Underpinning Philosophy

ECM study process in KUS involves different professional individuals who equipped with different intention, interest, skill and knowledge. Thus, interpretive research is appropriate to comprehend KUS participants' motives, actions, and intentions (Saunders, Lewis, & Thornhill, 2012) and to expound what is happening in social situations in social exchange and negotiate meanings on an agreed-upon order (Mcniff & Whitehead, 2011). Moreover, the present study emphasizes contextual understanding or practical judgment and realizes collaborative participation in theoretical, practical and political discourses among the researcher and participants (Willis, 2007).

The selection of interpretive philosophy fulfills the criteria proposed by Oates (2006) and Denscombe (2010). First, the nature of ECM is tackled. Next, data concerned are interpreted inter-subjectively to answer the proposed research questions, which are followed by inter-subjective interpretation that is beneficial to ECM study; and subsequently, all the findings are related to the ECM practices. In addition, the researcher's previous administrative work experience at ICT sector and management information system (MIS) project management experience had helped to shape constructive beliefs, values, and practices in ECM. They share the common and socially constructed ontology to assist our inter-subjective interpretation of KUS ECM

on TLC action research. Furthermore, the status quo of KUS is of minimum risk when using inter-subjective interpretation to the practice of ECM on TLC.

Qualitative interpretive research is utilized in this study, so as to seek meanings and interpretations (Klein, 2012) about ECM on TLC practices in KUS and to generate new theoretical human-focused model for ECM under context-bound of KUS's TLC management. Although the qualitative approach is more subjective, relatively speaking, the inter-subjective dialogue makes ECM studies more feasible. Our interpretive research paradigm, therefore, has the following advantages:-

- understanding of interpretations and meanings are based on knowledge of ECM;
- data collecting uses participant observation and in-depth interview regarding the KUS ECM colleagues' natural working behavior and their working culture;
- the interpretive paradigm places emphasis on construct validity, internal validity, and the reliability of project implementation and collaboration;
- explanations are achieved through descriptions of ECM meanings and other dispositions toward action;
- a data-grounded theory uses the analytic–inductive method as a reasoning approach;
- interpretive methods suggest the researcher's participation in KUS ECM colleagues' working life and culture, with collaboration leading to working closely with them to create a joint construction of inter-subjective data;
- the theory evolves from the analysis findings from verbal, action, and setting descriptions.

Viewed from a different angle, the proposed ECM on TLC implementation involves KUS functional or organizational colleagues from difference wings. These colleagues have brought up different sets of research questions. For example, KUS system maintenance colleagues and system end-user colleagues have their varying aspects and views on project collaboration and working. Therefore, the present study is underpinned by an interpretive research paradigm to explore an organization's development derived from research collaboration between researcher and participants.

As Table 3.1 (page 75) clearly displays, there are six subsets of social science research philosophy that govern the researcher's thought on ECM and, thereby, TLC. They affect PAR action planning, learning and realizing, observing and inquiring, analyzing and reflecting, data coding process and abstraction for developing a human-focused model of ECM on TLC.

Table 3.1
Six Subsets of Social Science Research Philosophy Guide on Entire ECM Research Process

No	Philosophy dimensions	Interpretive from an inter-subjectivity perspective	Function
1	**Ontology** (The nature of reality)	Socially constructed, inter-subjective, variable, multiply.	To explain what are the elements of knowledge and its' definition in order to explore the intrinsic elements of being or existence on process of implementing action research.
2	**Epistemology** (How researchers know what they know)	Motivate ECM practice through inter-subjectivity, interpret ECM details, setting, situation, reality, phenomena and the undergirding meaning.	Emphasize on knowledge's appreciation, formation and advancement.
3	**Methodology** (The methods used in the process of research)	Researcher enmesh in action meaning making activities to understand the continually interaction of research objects to improve ECM	Involves philosophical thinking and basic assumption on the support to research process
4	**Praxis methods** (The applying technique)	Small samples, participant observation, in-depth interview and document investigations, in understood qualitative sense	Data collection techniques most often used
5	**Axiology** (The role of values in research)	Both researcher and research objects interact closely for inter-subjective views regarding values and ethics	Helping to evaluate entire value of the present study from research findings and its' contributions.
6	**Rhetoric** (The language of research)	Comprehensive contents of study, process, field notes, analytic articulation and research findings are easily understood	Helping to write up the present study's phenomenon in argument

Source: Adapted from "Research Philosophies in Business and Management Research" by Saunders, Lewis, and Thornhill, 2012.

3.4 Applying Action Research

In our action research, for example, PAR is applying in this ECM to TLC. It is a well proven action research that produces valid, credible, and reliable results as spearheaded by James, Milenkiewicz, and Bucknam (2008). The subsequence formulation will

detail PAR approach and its importance, which the researcher actively participate in the three supportive and growth-improving cycles.

3.4.1 Participatory Action Research

PAR is suited to an ECM on TLC study for good reason. Because of its collaborative characteristic, PAR lays stress on the importance of inter-subjective relationships. Wilson and Salmons (2009) aptly state that PAR by far is more suitable for the researchers who want to solve, to study a contemporary specific issue within a class, project or organization. James, Milenkiewicz, and Bucknam (2008) also argued that PAR process lies in its iterative cycles cause people to work together collaboratively and democratically to seek solutions to problems they face and produce new knowledge from personal and professional lessons learnt. Therefore, the people that come from KUS ICT academic supporting colleagues shall contribute their talents, efforts, and resources to support KUS Moodle CIMS and SharePoint CIS infra-structure facilities such as server and network devices. Participants, system technology and infra-structure facilities are vitally important factors of work system theory to make this ECM on TLC PAR success in KUS.

Coghlan and Brannick (2010) further highlight that in any PAR project there are multiple action research cycles that operate concurrently. As Figure 3.2 (page 78) highlights, three PAR cycles there are each with an interpretive perspective stance and inter-subjective mindfulness making the cycle an effective means of ECM in KUS. Baskerville (2007) defined PAR as one in which members of ECM team share much

responsibility for solving organizational difficult practical problem as "co-researcher" develop a new human-focused ECM on TLC model. According to Hughes (2008) PAR includes systematic inquiry, professional practice intervention, and participation in decision-making by key stakeholders.

Hennink, Hutter, and Bailey (2011) clarify PAR by explaining that it has two distinguishing characteristics: the participation of KUS ECM colleagues as partners in the present study process, and a commitment to action for organizational change. It is suitable to adopt this view for studying e-collaborative teaching and learning management tasks. The researcher plays the role of facilitator in order to promote ECM for teaching and learning improvement. This helps in understanding elements of ECM.

In addition, PAR is more appropriate than other approaches for better unveiling of what is happening in the scene and how the story is unfolding. It seeks to bring together action and reflection, theory and practice, with regard to participation with others, which includes the pursuit of practical solutions to issues of pressing concern, and more generally the betterment of KUS individual ECM colleagues, departments, organization, and other stakeholders. Moreover, it rigorously investigates the intentions, behavior and actions of KUS ECM colleagues, by developing a human-focused model of ECM.

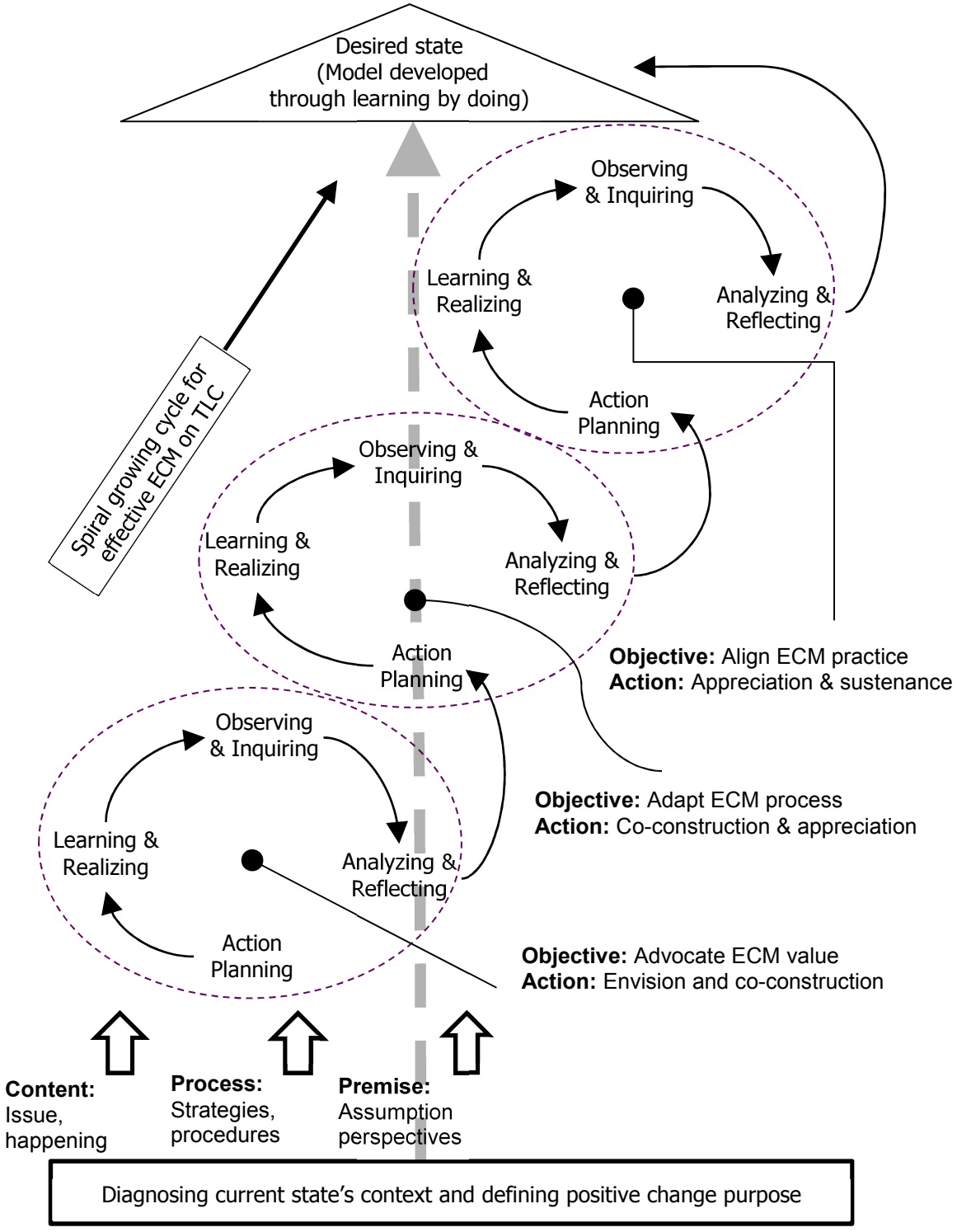


Figure 3.2
Spiral Grow of Three Action Cycle for ECM on TLC
Source: Adapted from "Doing Action Research in Your Own Organization" by Coghlan and Brannick, 2010.

However, the current important reason for present study has chosen to use PAR is due to the following advantages which are highlighted by Kmmis and Mctaggart (2005):-

- firstly, ECM is a social process to explore the relationship between the realms of individual and the social;
- secondly, the present study engages KUS ECM colleagues in examining their knowledge (understandings, skills, and values) and interpretive categories (the ways in which they interpret themselves and their action in the social and material world);
- thirdly, ECM is a practical and collaborative activity in which the researcher engages KUS ECM colleagues in investigating ECM practices, where the interaction among other colleagues relates them within KUS;
- fourthly, it is emancipatory with regard to ECM and aims to help KUS ECM colleagues recover, and release themselves from the constraints that are irrational, unproductive, unjust and unsatisfying organization structures which limits their self-development and self-determination;
- fifthly, it is critical for the researcher has premise of friendly, intimacy and trust relationship with KUS ECM colleagues and aims to help them recover, and release themselves from the constraints embedded in communication media through which they interact – their dialogue, their modes of work, and their rapport of relationships;
- sixthly, ECM's reflective aims to help KUS ECM colleagues to probe conditions in order to transform them and explore them better;
- seventhly, the present study aims to transform both management theory and practice into an effective ECM approach.

Although there are many existing empirical research approaches that could also be used for this ECM topic, PAR is arguably the best research approach to be employed for ECM topic's objectives, study processes, individual unit analysis and KUS organizational setting. PAR has been imperative for the researcher in developing a human-focused model of ECM on TLC for the searching out of theories, generating new ECM knowledge, resolving collaboration domain theoretical dispute academically, and collaborating on decisions to resolve practical ECM issues in society.

PAR is fit for our ECM on TLC because ECM needs the researcher himself involves being convener to lead and also facilitator to guide ECM process. The researcher plays a leadership role to make this PAR democratic through an inter-subjective perspective within an interpretive research paradigm. This makes PAR a collaborative approach and minimizes the bias in the four phases of PAR: action planning, learning and realizing, observing and inquiring, analyzing and reflecting. The researcher engineers three continuous PAR cycles in order to have a revolving spiral improve of ECM on TLC in KUS and to produce a concrete human-perspective factors findings as well as to develop a human-focused ECM model.

3.4.2 Action Research Cycles

In his study of action research, O'Brien (1998) emphasizes that action research is an ongoing process by which knowledge is derived after the review of the practice learned from previous experience. Based on the strength of O'Brien, the present study will

integrate his work with Denscombe (2010), Coghlan, and Brannick's (2010) action research models into a four-phase cyclic: action planning, learning and realizing, observing and inquiring, analyzing and reflecting in KUS ECM on TLC.

There is revolving spiral of three continuous PAR improvement cycles in Figure 3.2 (page 78) for developing effective performance of ECM on TLC in KUS. The researcher has engaged in the PAR cycles of constructing a collaborative working contents and processes action planning from current organizational state in pursuit of a new collaborative working context.

Next is the way in which learning and realizing of this planning could be arrived. KUS Individual, team, group and organization participants engage in this action change process, which includes observing and inquiring provides the structure for inquiry into the planned and unanticipated outcomes that occurs throughout the ECM implementation. This is to create the conditions and opportunities for learning and make the changes sustainable (Coghlan & Brannick, 2010). Finally comes the analyzing and reflecting on the collected data that is concerning the change. The analyzing is done by looking for contradictions and tackling them by introducing some aspect of change. The reflecting examines how the action taken has addressed the problem situation and reviews the lessons learnt.

Costello (2011), for one, states that Denscombe (2010) cyclical action research process finding is effective because it contains five elements: action planning with professional practice, critical reflection which identifies the problem and evaluates the changes,

observing and inquiring with systematic and rigorous in-depth interview, with strategic planning translating the findings into next action planning, with action executing initiating the change through learning and realizing.

The present study also finds the contribution of Lapan (2012) constructive and will therefore utilize PAR's five distinct process characteristics that are based on his findings:-

- "self-reflection", is an emphasis on self-study focusing on one's own professional work either alone or with peer assistance;
- "tight time frame", is study plan that may include observations of less than hour to no more than a week or two, making it possible to have immediate influence on everyday practice;
- "relevant research finding", is used to study the results drawn from one's practice and is used to revise professional action immediately;
- "spiraled cycles" is an overall structure that moves from focusing and planning to using findings to revise and improve practice, enabling growth;
- "practitioner/researcher autonomy" is a professional's ongoing experience of power over the selection of issues, the development of plans, and the use of results.

As the researcher has had ample opportunities to participate in coaching e-collaborative working KUS colleagues on using both KUS Moodle CIMS and KUS SharePoint CIS, our finding is that they need to be equipped with computer literacy for acquiring, authoring, editing, organizing, preserving and sharing of the relevant data files. In

addition, they will also need to learn how to collaborate in the sharing of data files vis-a-vis collaborative systems. Therefore, our process develops has the niche of both learning and realizing.

The present study follows the work system method. Recker and Alter (2012) highlight this method as an adaptable set of steps. The researcher uses it to identify ECM system, clarify problems, issues, and opportunities related to the KUS ECM system, to identify possible changes in directions, and produce and justifiable recommendations. It can exploit the best practice for the combination of factors in this collaborative working action research process. Next, the present study utilizes negotiated order theory, social exchange theory and work system theory to facilitate the collaboration of colleagues. The maximization of this ECM effort can be reached through this PAR of continuous reflection and lessons learnt.

On the issue of sampling, the present PAR includes three academic faculties and four academic supporting departments. In total there are fifteen KUS colleagues involve in this three continuous PAR cycles for spirally improving the effective and efficient of ECM on TLC in KUS. The consultation sequence starts from CCO colleagues who responsible for CIMS and CIS install, clients setup, template configure, authentication maintain, and technical support. Next, PDA colleagues who are responsible for CIS TLC hierarchical folder setup, places respective subject list and subject syllabi files. Then, CITL colleagues who are responsible for CIMS backup the conducted subjects into CIS. And finally, the researcher in turn coaches the FEIT, FAD, and FHSS faculty colleagues to collaborate manage TLC.

Three PAR cycles for ECM on TLC as indicated in our Figure 3.2 (page 78) help to develop, enhance, and refine human-focused ECM on TLC model. The researcher spend two weeks go to these faculties and departments to advocate the gospel of ECM on TLC. And also, show them and train them how to construct and management TLC in CIS in first advocating action cycle. The first is advocating what to focus on when articulating KUS ECM value. It also gets perception, belief, feeling and experiences from KUS ECM colleagues. Next, skills that relate to their legacy operation of maintaining TLC are unveiled for ECM on TLC adapting cycle from the outcomes of first PAR cycle.

A definite period will be reserved for consultation, whereby the aim is to solve problems on ECM on TLC. Meanwhile, the researcher has discovered and appreciated their efforts and contribution to ECM on TLC. Next, is to focus on building and improving better KUS ECM process, which can be inferred by the first action research's practice learning. The purposes to reconstruct learning and realizing the ECM practice. Moreover, their learning experiences, reactions and comments furnish a better mechanism to ECM on TLC for third aligning action cycle.

Three other weeks are allocated the after second action research cycle for the purpose of aligning the focus on which is best to sustain KUS ECM practice within the community of ECM on TLC. Furthermore, the researcher appreciates all participants efforts, talents and time contribute to ECM on TLC in CIS at beginning of third action cycle. It is to fund collaborate spirit and relationship, which to draw best ECM on TLC practice out

and gather colleagues to work in concert with ECM on TLC. As a result, effective and efficient ECM on TLC practice is sustained.

3.4.3 Reflection After Action

Lappin and McLeod (2009) highlight the need to capture reflections from HEIs on their implementations in order to evaluate the extent to which SharePoint CIS has proved beneficial in different areas of an HEI, and to begin to identify learning from early implementations as well as to capture the reactions of key stakeholder groups in an HEI. Coghlan and Brannick (2010) highlight After Action Review (AAR), which comes out the lessons learnt from reviewing the process, examining emergent questions about content, process and premise (Mezirow, 1991). Merriam (2004) interprets content reflection mediate on the actual action process experience. Next, process reflection deliberates on how to handle the action process experience. Moreover, premise reflection involves examining long-held, socially constructed assumptions, beliefs, and values about the action process experience or problem which govern attitudes and behavior.

These content, process and premise three types of reflection in parallel with the four territories of reflection uses in KUS ECM on TLC PAR: intentions, planning, action and outcomes. They operate at KUS individual, interpersonal, departmental and organizational levels:-

- intentions reflect the purpose, goals, aims, and vision;
- planning consists of plans, strategies, tactics, and schemes;

- action is the implementation of activities and performance;
- outcomes include results, outcomes, consequences, effects and impact.

Coghlan and Brannick (2010) discuss the military of the United States America which has applied post-mortems as AAR. They anticipate issue and generate emergent learning for next action by reviewing the past. It is like soft system methodology (Alter, 2013) which is a systemic approach employed to perceive, predict, compare and ponder changes. The present study is using a ladder of inference in its AAR. This is embedded in the present study to improve action practice in the next PAR cycle. This ladder of inference (Figure 3.3, page 87) conceptualization is applied during the observing, inquiring, analyzing and reflecting phases. It is better than any other common conceptual tools in PAR. Ngwenyama (2002) highlight another two common conceptual tools which are theory-in-use models and cognitive maps are used for data analysis. Theory–in-use models are a set of abstract explanatory and normative models that guide researcher in making analyses. Cognitive maps consist of the concepts and relations an actor uses to understand an action situation. The ladder of inference produces maps of action from collected data, connect generalized knowledge in order to produce new action strategies, and make inferences regarding PAR.

According to James, Slater and Bucknam (2012), the reflection requires a critically reflexive practitioner to have four main positive human abilities. There are self-awareness such as recognize everyone concerns and interests, self-management which is viewed as a positively influence, social awareness to create positive norms, and relationship management with both concern and respect. As our Figure 3.3 (page 87),

clearly depicts the ladder of inference steps in analyzing and reflecting phase's drives for further improvement**.** KUS PAR is "learn by practice" process but complementary with reflection is the "practice by learning" process which giving the present study double-looped learning effect.

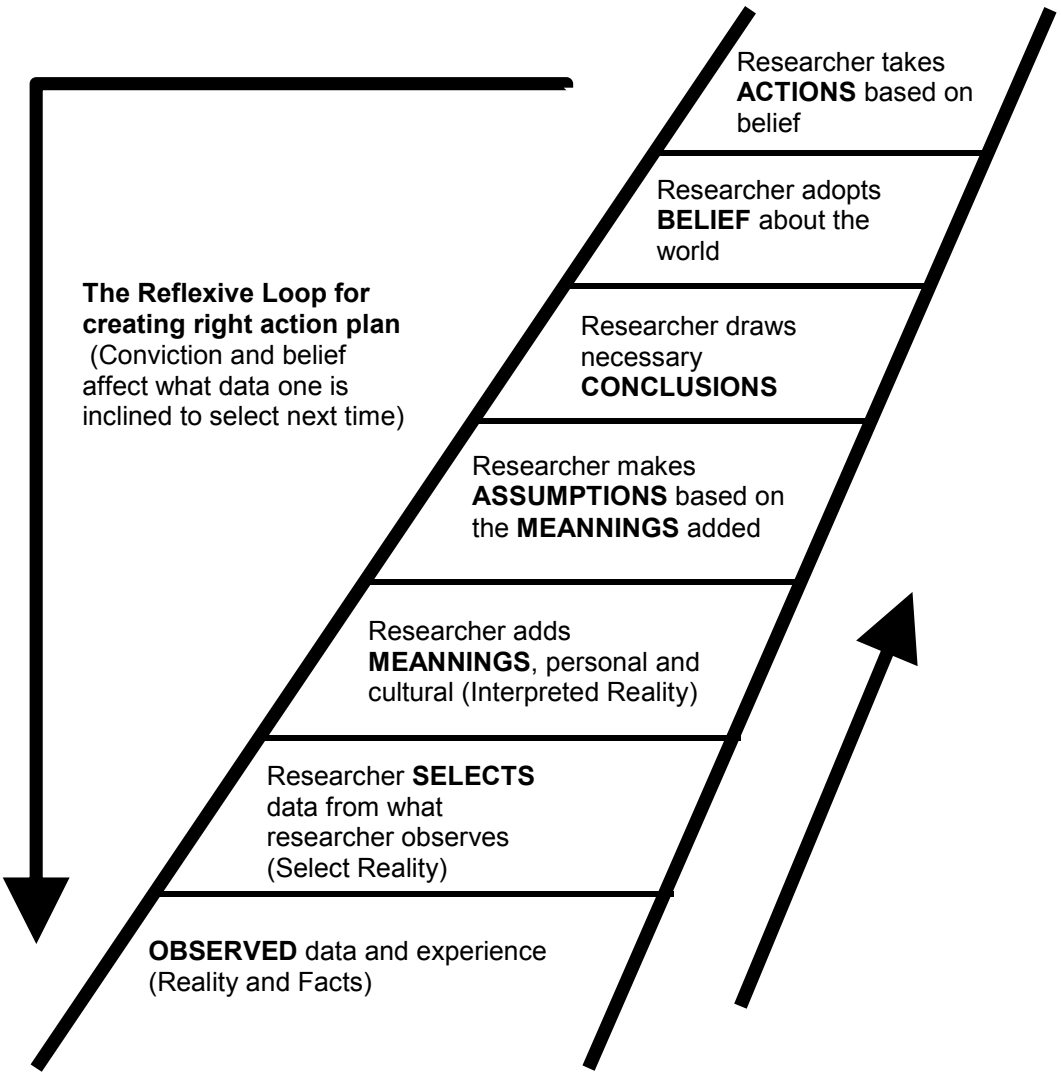


Figure 3.3
Ladder of Inference for Reflection from Evaluation to Another Action Loop
Source: James, Slater, and Bucknam (2012)

3.5 Data Collection Technique

There is participant observation, in-depth interview, and document mining three data collecting technique being applied in this study. The researcher observes the participants' behaviour in whole PAR and experiencing the changes making in ECM setting. Enquiry through in-depth interview is managing to draw participants out their inner taught. Document mining complements evidence information and artefact for this study.

3.5.1 Experiencing Through Observation

Our observation scope also includes all KUS colleagues who directly or indirectly involved in ECM on TLC in KUS. They are KUS deans, heads, and academic supporting colleagues of KUS, CCO, PDA, CITL, and other faculties. Participant observation is applied to explore potentially new topics of ECM from PAR. The purpose is to learn know how people act and interact vis-a-vis ECM practice. The researcher who serves as convener and facilitator has considerable involvement and collaboration with KUS ECM colleagues. The endeavour enables the researcher to adopt an "emic" or insider perspective by which the behavior of these participants are observed and assessed. In addition, the KUS work environment, KUS ECM colleagues, and their body language are some of the key parameters to be considered.

Our observation guide as display in Table 3.2 (page 89) highlights data collecting guide that is used during the observation process. This participant observation guide provides a systematic observation of KUS ECM colleagues' behaviors, expressions, and

interactions in given settings. It allows the researcher to understand and explain conveniently the actions of KUS ECM colleagues and their respective interactions in context. Observation research depends not only on the skills of observation but also on clear and unbiased methods of recording observations. The data type recoding in Table 3.3 (page 90) details the field notes of this ECM practice and are transcribed as per the events taking place in the venue. These field notes include descriptions, direct quotations, and researcher comments.

Table 3.2
Participant Observation Guide in ECM Practice

No	Category	Includes	Researchers should note
1	Appearance	Clothing, age, gender, physical, appearance	Anything that might indicate membership in a groups or in subpopulations of interest to study, such as profession, social status, socioeconomic class, religion, or ethnicity
2	Verbal behavior and interaction	Who speaks to whom and for how long, who initiates interaction, languages or dialects spoken, tone of voice	Gender, age, ethnicity, profession
3	Physical behavior and gestures	What people do, who does what, who interacts with whom, who is not interacting	How people use their bodies and voices to communicate different emotions, what people's behaviors indicate about their feelings toward one another, their social rank, or their profession
4	Personal space	How close people stand to one another	What people's preferences are concerning personal space suggest about their relationships
5	Movement of people	How and how many people enter, leave, and spend time at the observation site	Where people enter and exit, how long they stay, who they are (ethnicity, age, gender), whether they are alone or accompanied
6	People who stand out	Identification of people who receive a lot of attention from others	People's characteristics, what differentiates them from others, whether people consult them or they approach other people, whether they seem to be strangers or well-known by others present.

Source: Adapted from "General Things to Observe" by Guest, Namey, and Mitchell, 2013.

Table 3.3
Data Types Collected from Participant Observation, In-Depth Interview, and Documents

No	Data Types	Description	Pros and Cons
1	Observation filed notes, audio, and video	Written notes, verbatim transcript, digital record of what was saw, heard, or felt within observation period	• Little or no bias and open data; • Difficult to capture in certain venues; • Time consuming to analyze; • Subject to researcher's bias regarding what to note or record.
2	Casual conversations or informal interviews	Notes or recordings of actual conversations	• Captured data in the context and uses the vernacular; • Difficult to record accurately in some setting to reflect relevant fact; • Difficulties concerning analysis when highly idiosyncratic.
3	Semi-structured in-depth interview	• Interview guide for inquiry • Written in summary notes • Record with Audio/Video	• Data related to the study objectives; • Decreases natural context or setting while consider the encounter within "research" mode.
4	Counts of specific observations	• Frequency, intensity, and source of specific behaviors of interest • Aid of template listing the types of things to be counted	• Data provided can be used to identify the norms or make comparisons between events, times, individuals; • Data collection instrument's improvement require; • Skill to record the behavior of interest accurately in the field setting.
5	Process flow	Visual or verbal records which figure in a flow chart or stepwise diagram	• Understand sequenced events, especially on administrative workflows, operation processes, decision processes; • Capture process flow and its challenges; • Risk of capturing an idiosyncratic version.
6	List and categories	items list, categories, and inclusion or exclusion rules	• Both list content and cultural meaning provided; • Collecting list and categories tediously; • Difficult to extract "rules"

Source: Adapted from "Collecting Qualitative Data" by Guest, Namey, and Mitchell, 2013.

In addition, the researcher jots down his or her own opinions or ideas on an emerging theoretical idea in the researcher field study diary. The walk-through technique in ECM practice provides an emic view of the situation and is very useful in the explanatory part of the present study. It helps to discover the silent ECM practice's process, experience, norms and values.

Hennink, Hutter, and Bailey (2011) had cogently underscored numerous benefits as derived from conducting observation in social science research, such as action research and PAR. The observation method offers the opportunity to complement other methods of data collection, while failing to obtain directly reliable data from research objects. It also provides a contextual understanding of the findings of other research methods (e.g. Interviews, surveys).

The advantages of observation are unobtrusive, but offer a lot of contextual information, support data from other sources, identify organization colleagues' actual behavior, and conduct in many situations. Observation has strength in providing familiarity with KUS ECM colleagues' cultural milieu. It discloses ECM activity and practices. It uncovers collaborative working processes and behavioral contexts. It explains the interaction and behavior of colleagues. It also elicits the documents unspoken rules of ECM practices and collaborative working behavior.

There are issues, however, to be considered the weaknesses of observation are time consuming (continued and repeated immersion in setting), the recording field notes are cumbersome, and the interpretation of observations may be subjective. There is

difficulty in simultaneously observing and recording the fact into field notes. Such field notes may also be subjective. The present study also needs to refrain from bias interpretation. In addition, observation skills need to be train and learn through practice.

3.5.2 Enquiring with In-depth Interview

The present study adopts Babbie (2010) procedure, which follows the Steinar Kvale seven stages interview process, as seen in Table 3.4 (page 93), for its in-depth interviews with each PAR's action cycle observing and inquiring by means of three iterative PAR's action processes. In-depth interviewees include six KUS academic colleagues and nine KUS academic supporting colleagues. KUS academic colleagues are three coming from FAD, two coming from FHSS, and one coming from FEIT. On the other hand, KUS academic supporting colleagues are four coming from CCO, three coming from PDA, two coming from CITL.

First cycle of this action study applies the focused KUS individual perspective of life ECM history and knowledge. This invites participants to provide their learning from an ECM experience. Moreover, it is able to identify KUS individual ECM colleagues' perceptions, beliefs, and experiences. In-depth details of experience, feelings and opinion interview are employed in second cycle of PAR. This is to allow KUS ECM colleagues to reconfirm and reconstruct in detail his or her learning and realizing experience and to concrete this KUS ECMs' context in the present study. Furthermore, in-depth interviews gather the reflections on the meaning through open-ended elaborations and clarification, which clarifies KUS ECM colleagues' present experience

and conscious in third cycle of PAR. The researcher compares, contrasts, and synthesizes these three in-depth interviews' contents not only for making the next improvement action planning's strategy and tactic but also to produce coherence, authentic and reliability source of data to develop theoretical model.

Table 3.4
Seven Stages of In-depth Interview on ECM Practice

No	Stage	Description
1	Thematizing	clarifying in-depth interview purpose with ECM concepts to be explored
2	Designing	Laying out the in-depth interview process with ethical consideration to accomplish ECM study. .
3	Interviewing	Executing actual interviews with semi-structure interview guide
4	Transcribing	creating a verbatim transcript of interviews in table format detail interviewee's respond and view
5	Analyzing	Categorizing the meaning of gathered information to ensure consistency and in line with the purpose of the study
6	Verifying	Examining in-depth interview findings to see if they have creditability, reliability and validity.
7	Reporting	Disseminate to others what has been learnt

Source: Adapted from "Steinar Kvale Seven Stages" by Babbie, 2010.

A semi-structured interview guide uses in-depth interview to facilitate the data collection. It establishes rapport and a trust relationship between the interviewer of researcher and KUS interviewees. Interview questions are open questions, for example, questions that invite the interviewee to narrate his or her story. Data will then be collected from semi-structure questionnaire interviews, action planning discussion meetings, scenario observation, field notes, action plan, and outcomes artifacts.

This in-depth interview is supported by an interview guide as a memory aide (Hennink, Hutter, & Bailey, 2011). The interview guide employs a step by step approach in its research questions, as illustrated in Table 3.5 (page 94). Interview questions are the operationalization of the research questions and therefore, the researcher is followed logically from them (Hennink, Hutter, & Bailey, 2011). Question asking during the interview is open and empathic. It can be more or less structured with regard to theory, paradigm and field approach depending on the research questions and their objectives.

Table 3.5
Stepwise Approach for Developing In-Depth Interview on ECM Study

Research questions for developing model of ECM	**Primary domains of content covered in the interview**	**Types of data that are needed.**
What are the motivating factors in ECM on TLC process?	1) What are the factors that inspire the ECM on TLC process in KUS?	Factor type, support agency
	2) Where are the factors promoting ECM on TLC process to be found?	Environment structure
Why should one use these relevant factors to promote e-collaborative TLC management in KUS?	1) What are the reasons that trigger off the factors vis-a-vis ECM on TLC process?	Cause, consequence
How do these factors inspire ECM on TLC in KUS?	1) Which setting or circumstance fits the factors to promote ECM on TLC process?	Environment structure, and process
	2) When does the timing of the factors that promote ECM on TLC process?	Stages, steps, periods, phases of the process
	3) How the factors promote ECM on TLC process?	Process knowledge
	4) How often are the factors promoting ECM on TLC process?	Frequency, magnitude level

Source: Adapted from "Stepwise approach to developing an interview guide framework" by Guest, Namey, and Mitchell, 2013.

The interview guide contains a brief introduction regarding the purpose of interview, what data to be collected from KUS ECM colleagues and outlines of the research outcome. It has a list of questions that can assist the researcher in keeping the in-depth

interview on track. For the present study there are altogether eight basic questions: to be included types, frequencies, magnitudes, structures, processes, causes, consequences, and agency (Lofland, Lofland, & Snow, 2005). To optimize the effective, the present study also makes use of McKinsey 7S Framework (Waterman, Peters, & Phillips, 1980) to identify the management concept of KUS ECM colleagues. In addition, the findings of Mattessich, Murray-Close, and Monsey (2001), which relate to the environment, membership characteristics, process and structure, communication, purpose, and resources. These dimensions are used to probe the casual relation in KUS ECM.

The sequence of the interview questions begins with some opening questions that are conducive. Its purpose is to enable our colleagues to feel comfortable enough to tell their story. Key questions are posed after which to gain detailed information on the research topic. Then, a third group of questions which deal with broad and general issues about the future plans of KUS ECM colleagues and further issue of concern that they wish to add. In addition, the questions are non-directive (e.g. non-leading) and as such it could help KUS ECM colleagues to concern openly regarding their views. The arrangement seems good opportunity to dwell on the influence of viewpoints.

Topical probing is identified on the basis of secondary literature and theory. It is included in the interview guide as index of follow-up questions. Its aim is to motivate the interviewees to tell their story and discover behavior traits that could motivate action learning and realizing in KUS ECM practice. The questions are usually not posed as direct questions, unless the interviewee does address the issues concerned. The

questionnaire usually functions as checks for the researcher, to make sure that the interview touches on all relevant issues.

The strength of in-depth interviews is to accrue information about colleagues' personal experiences, opinions, conscious, perceptions, knowledge, life stories, feelings, etc. (Hennink, Hutter, & Bailey, 2011). In-depth interview can reach relevant topics and gain in-depth information. Rossman and Rallis (2012) highlight the effectiveness of in-depth interviews. It is to gain an understanding of the individual KUS ECM colleagues' perspectives, to deepen the understanding of the study's effect, to generate rich and descriptive data for action study, to gather insights into KUS ECM colleagues' thinking, and to learn more about KUS ECM context.

Moreover, the questionnaire also obtains contextual information about the reactions of KUS colleagues. But, its weakness is the one-to-one interview. With the lack of immediate feedback from others, the need rapport building skills, getting to use motivational probes, listen and respond to KUS ECM colleagues' story. It is due to this weakness that there is a need for flexibility in order to change the topic order of story and the need for variable transcription.

3.5.3 Mining Data from Viable Documents

The document data mining process, on the other hand, provides a systematic procedure for identifying, analyzing, categorizing, and deriving meaningful data from KUS documents. It serves as an alternative data source to participant observation and in-

depth interview to KUS colleagues. There are to be precise, two types of document for reviews which are research-generated documents and non-research-generated found documents (Oates, 2006). These documents are recorded in formal and informal way in KUS.

Found is documents are those official and unofficial documents existing prior to KUS PAR: lesson conducting schedules, curriculums, syllabi, teaching materials, teaching dairies, lecture manuals, action plan, event records, policies, regulations, communication letters, publications, reports, working diaries and the like. Informal documents refer to communication notes, memos, and email. Founding documents from previous studies provide a form of documentary data that the researcher can reuse in this research. Such data is known as secondary data. For example, research data and field notes from studies have been intentionally archived for the benefit of future scholars.

Study-generated documents have been produced during the research and they are intent for research task. Numerous examples, such as KUS ECM meeting minutes, instructions, user guides, and other artifacts are generated in KUS PAR. In addition, to the above, some generated field notes and similar artifacts are also acquired as evidence for analysis. The present study also focuses on how these documents are compiled, utilized, and function during the various episodes of interaction. These documents, which are related to what action truly means, what it could means, what it should mean to ECM on TLC in KUS.

As Table 3.6 (page 99) illustrates, the present study utilizes nine data mining steps to accomplish its document mining fieldwork. First to develop a focused document list in order to provide fruitful evidence for the present study; second to list of potential source documents; third, to skimming the documents; fourth, is to compile the evidences from documents; fifth, to assess the compiled evidences; sixth, to organize the assessed evidence; seventh, is to compare and contrast this organized evidence by means of observation and in-depth interview; eighth, to outline documents review's conclusion; and ninth, to track the review status by using appropriate metrics.

As Oates (2006) had pointed out, that compared to other data collection techniques, mining document data have the following advantages such as convenience, rapidity, and inexpensiveness. Moreover, it is less constrained with reference to fixing appointments, authority, and has fewer ethical issues to be taken into consideration than other data collection techniques. These documents had already been generated for obvious reasons and are readily available for unobtrusive collection.

Table 3.6
Nine Stages of Mining Data from Documents, Artifacts, and Archival Records

No	Stages	Description
1	Developing a focus documents list	Develop a well found document and research generate documents list that provides evidence for the present study. For example, written reports, planning papers, research synopses and others related documents with these characteristics or attributes.
2	Listing potential sources	Identify where, when, and from whom to retrieve those documents which focus on document as the resource for use. For example: an ongoing development progress documents
3	Skimming contents	Examine documents that provide confirmatory evidence of the information obtained from interviews and observations.
4	Compiling evidence	Ensure that valuable information is collected, recorded, and summarized as evidence.
5	Assessing evidence	Assess the evidence with authenticity, credibility, representativeness, and meaning (Myers, 2009).
6	Organizing evidence	Categorize, classify and index the collected evidence from documents
7	Comparing and contrasting with observation and in-depth interview	Maximize documents' clarity and usability with collected documents processed correctly and merged seamlessly into evidence for the study.
8	Generating the documents review's conclusion	Specify any conclusions regarding needs, root causes, and recommendations for addressing identified needs
9	Tracking the review status using metrics	Documents may be examined to investigate patterns and trends of the past as is commonly practice.

But, document data mining is not without shortcomings. Oates (2006), for examples, insists that a researcher cannot depend entirely upon all the documents to map out a picture of objective reality. Thus, the meaning of document, its purpose, source, researcher, and how it was produced all needs careful tracking and appraisal; and thus, the present study takes necessary precautions regarding the document generative method and its official and necessary consideration over authoritative-looking nature.

3.6 Data Analysis Process

The data analysis process as proposed in this study is, presented in Table 3.7 (page 101), it begins with data preparation. It produces factual knowledge about respondents, events and context from interview transcripts, observation field notes, documents mining data and artifacts derived from the descriptive encoding in verbatim transcripts. It captures information about the interviewees' own expressions. It also includes the researcher's comment and reflections which provides rich and valuable details to the present study. These verbatim transcripts proceed to uncover themes, categories, main topics, and the relationships between themes.

Inductive and deductive approaches are used with interviewee to elicit relevant questions. Answer contents are recorded in descriptive coding in the form of verbatim transcripts to protect privacy and confidentiality of the data provider. The aim is to make a topic codebook for developing an analytic encoding of the data. Our Figure 3.4 (page 102), sufficiently presents the progress of the data analysis in verbatim transcripts, significant statement, open encoding, axial encoding, selective encoding, to theoretical encoding. The above manoeuvring is well grounded. Richards and Morse (2007) for example, state that qualitative data analysis begins with the sorting out of collected encoded research data in order to identify the variables.

Table 3.7
Eleven Stages of Data Analysis Process

No	Stages	Description
1	Data preparation in descriptive encoding	Produces factual knowledge about respondents, events and context from interview transcripts, field notes, documents, and artifacts for descriptive encoding in verbatim transcripts.
2	Anonymizing data	Remove any names of people, locations, places or specific information that may disclose their identity.
3	Developing significant statement codes	Encodes a participant's information using an inductive code approach while obtaining information from interview guide topic using deductive code approach
4	Making a topic codebook	Defines the issues, topics, ideas, concepts, and copying relevant data into a codebook
5	Analytically encoding of data	Indexes the entire data using the codes developed, so that the researcher can focus his or her analysis on specific issues in the data according to Oates (2006)
6	Open coding	Labeling units of data, based on terms and concepts found in the data, not those found in the literature or pre-existing theory.
7	Axial coding	Bohm's (2004) axial encoding of categories allows or the analysis of temporal and spatial relations, in relationship to cause and effect, in means-end relationships, in terms of argumentative and motivational connections.
8	Selective coding	Allow for further exploration of the issues, identifies patterns and begin make noticeable associations in the data. Comparisons can be made between inductive and deductive subgroups in the data.
9	Categorizing	Develop the individual group categorizing as independent variables and major group categorizing as dependent variables which involves grouping codes with similar attributes into broad categories.
10	Conceptualizing	Groups concepts and develops a code for the "big picture", by telescoping the broad overview, exploring the links among them, and drawing up group codes into matrices form
11	Developing theoretical model	Model development processes use a conceptual model, sorting the group code links, identifying explicit reasoning using deductive logic to explain and compare the explanations.

Source: Adapted from "Qualitative research methods" by Hennink, Hutter, and Bailey, 2011.

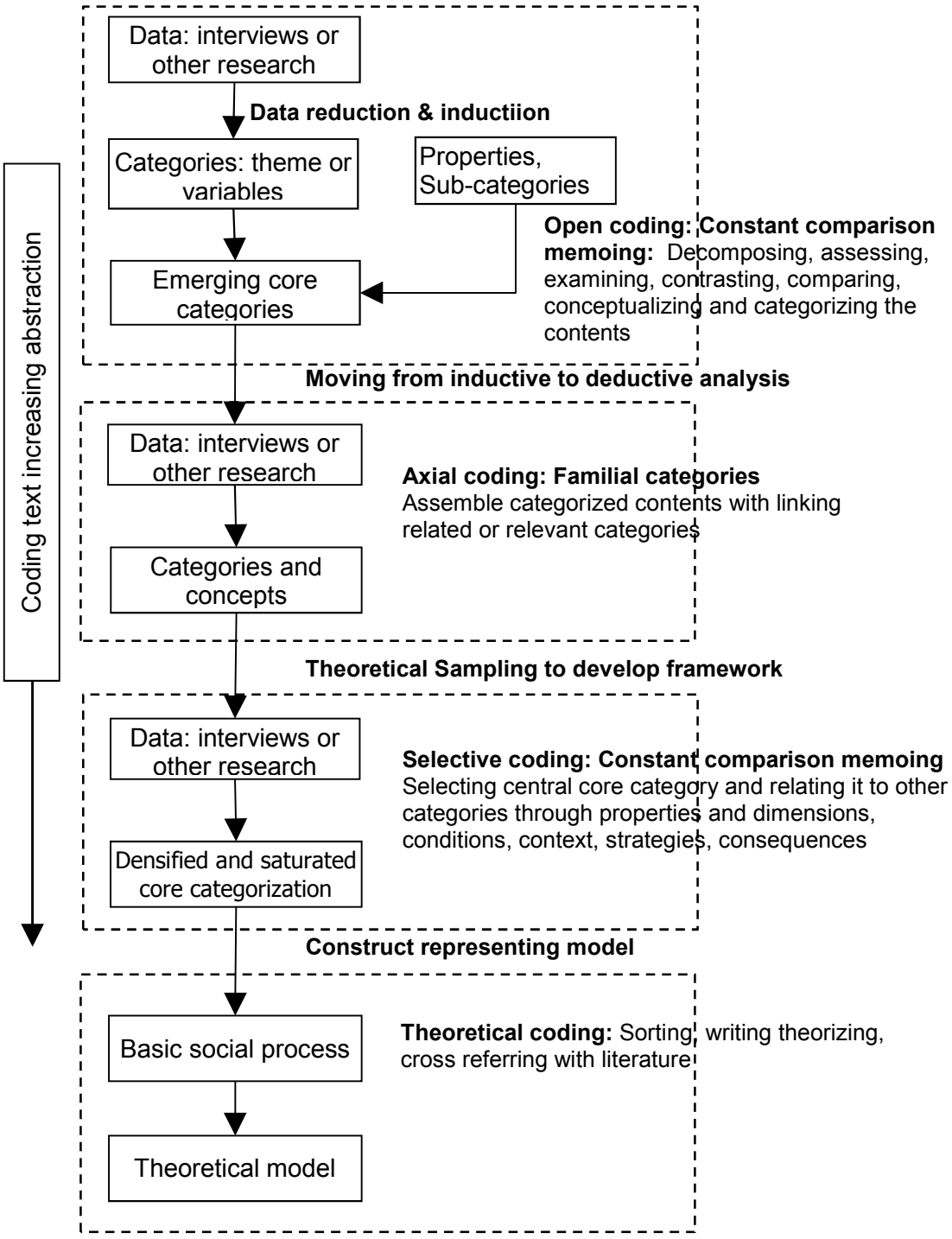


Figure 3.4
The Model Developing Process
Source: Jones and Burgess (2010)

The next component is open coding which is the initial process of labeling units of data. It is based on terms and concepts found in the collected data. There are not from literature reviews' statements or pre-existing theories' arguments. The Table 3.8 (page 103) begin explains the various data labeling units. Open coding collects the data with constant comparison, process of decomposition, assessment, examination, comparison, conceptualization and categorization of the data. It aims at unveiling the data, identifying concepts that seem to fit data (Richards & Morse, 2007). Marshall and Rossman (2011) mention that open coding data are grouped according to conceptual categories that reflect commonalities among code as axial coding. This conceptual category in axial coding is also able to deal with mutually exclusive and collectively exhaustive (MECE) condition.

Table 3.8
Open Coding Process Through Labeling Units of Data, Based on Terms and Concepts Found in the Data

No	Label units	Questions are asked for labeling units of data based on terms and concepts
1	Theme	What phenomenon to articulate? What issue evolved in the phenomenon?
2	Human	Who are involved? What are their roles? How do they interact with one another?
3	Phenomenon	What are the aspects of phenomenon? How is it going on?
4	Time	When? Period (e.g. during 2 months)? Where? Frequency (e.g. monthly)? Magnitude (e.g. 2 hours each time)?
5	Cause and effect	What connection, causal relation could be deduced? Why?
6	Intention and goal	What is the intention and purpose? For what reason?
7	Means	What are the mechanism, methods, plan, tactics and strategies use?

Source: Adapted from "Theoretical Coding: Text Analysis in Grounded Theory" by Bohm, 2004.

The significance of axial coding, which is used to assemble a list of codes, now begins to emerge. There are ten useful types of coding families, as seen in Table 3.9 (page 105). They are used in theoretical framing of concepts. Axial coding families divide coding data into categories and construct fruitful connections among them. It moves from inductive to deductive analysis. It focuses on a given concept (Richards & Morse, 2007). Bohm (2004) explains that axial coding is developed in its temporal and spatial relations, in relationship of cause and effect, in means-end relationships and in terms of argumentative and motivational connection. As Saldana (2009) aptly points out that these axial coding data which are incorporated into codes through a systematic link with core category have the greatest explanatory relevance.

Selective coding refers to clustering axial coding themes. By creating constant comparison memoing of selected core category, and the coding relates these components to other categories through properties, dimensions, conditions, context, strategies, and consequences. It offers full, rigorous, and intense analysis that focuses on one category at a time (Richards & Morse, 2007). Bohm (2004) suggested four guiding questions in order to elicit the core codes: First, what is the central phenomenon issue in axial category could have generated the core category? Second, what has the researcher learned from the investigation? Third, what is the central proposition of the investigation? Fourth, what feasible relationships exist in the axial category? While another scholar, Merriam (2009), concludes that the selective coding merges into the propositions, and abstracts themselves into themes or networks in comparison with previous literatures and articles.

Table 3.9
Ten Types of Coding Families to Use in Theoretical Framing Concepts

No	Family	Description
1	Six C	Causes, contexts, contingencies, consequences, conditions, and covariances.
2	Process	Stages, phases, phasing, transitions, passages, careers, chains, and sequences.
3	Degree	Extent, level, intensity, range, amount, continuum, statistical average, and standard deviation.
4	Type	Types, classes, genres, prototypes, styles, and kinds.
5	Strategy	Strategies, tactics, techniques, mechanisms, and management.
6	Interactive	Interaction, mutual effects, interdependence, reciprocity, symmetries, and rituals.
7	Identity-Self	Identity, self-image, self-concept, self-evaluation, social worth, transformations of self.
8	Cutting-Point	Boundary, critical juncture, cutting point, turning point, tolerance levels, and point of return.
9	Cultural	Social norms, social values, and social beliefs.
10	Consensus	Contracts, agreements, situation definitions, uniformity, conformity, and conflict.

Source: Adapted from "Theoretical Coding: Text Analysis in Grounded Theory" by Bohm, 2004.

The task of categorizing is to develop the individual group categorizing as independent variables with major group categorizing dependent variables that involve grouping codes with similar attributes into broad categories. It is in this sense that groups conceptualization is to incorporate the group codes in the "big picture", telescoping in a broad overview, exploring the links among them, and arranging group codes into matrices. Lastly, theoretical coding facilitates the process of sorting, academic writing, cross referring with literature and becoming a theoretical model. Richards and Morse (2007) point out that theoretical coding identifies the linkages that connect the various

categories through association, contrast, and comparing individual and group relationships, conditions and their consequences.

There are several approaches to discourse analysis, including: content analysis, thematic analysis, biographical or narrative analysis, and qualitative data analysis, all are well grounded to construct a theory. The present study utilizes it to form the broad principles of grounded theory. Hennink, Hutter and Bailey illustrated (2011) argue that grounded theory has a set of flexible guidelines and process to be used for the analysis textual data. These guideline and process help in our understanding of KUS ECM colleagues' behavior and in identifying KUS ECM process with the cultural norms of implementing KUS ECM practice.

That the grounded theory analysis can readily tease out the elements in the operation of a setting or the depth of ECM practice from research experience is well attested (Grbich, 2007). It is conducive to aim study that applies to the present KUS ECM on TLC study, which deals with the interaction among KUS ECM colleagues and practice environment. But its weakness is that the collected data are too fragmentation and that may lead to the lost track of bigger picture with respect to the research objectives.

3.7 Assessment of Research Quality

The present study uses data collecting triangulation, which consists of observation, in-depth interview, and documents data mining. The three collection techniques are conducted in parallel to complement each other's weakness. They are carried out

consecutively during the entire research period. For example, documents data mining on the artifact of ECM complements in-depth interview and observation. This helps to unearth into ECM practice and human behavior.

To substantiate our findings, the present study also adopts Merriam's (2002) ways to improve the generalizability, reliability, and validity of action research case studies. First, one extends the on-site data gathering processes period. This allows for the discovery data that are more comprehensive and concrete to ensure greater accuracy and precise interpretation. Next, one engages in distinct data collecting from participant observation, in-depth interview, and mining data from documents in order to fulfill data sources triangulation. Both observations and in-depth interview outcomes are then noted as field data in text form, drafted in diagram, captured in photo, and sufficiently recorded by means of audio and video recording.

Then, the researcher initiates and maintains active evidence in the data interpretation through KUS ECM colleagues' checking if the data provided by them sustain the integrity of the KUS ECM context. Moreover, the member checking technique includes distributing all field notes, verbatim transcripts and tentative interpretations among the KUS ECM colleagues. This is to reconfirm in consequence the accuracy of data and their plausibility in the context of an ECM study. The findings are understood in terms of conformability exercise which provides our research with construct validity.

Subsequently, the researcher assembles the referential materials from the KUS ECM site as additional backing to the findings. The chain of credible evidence such as

interview answers, documented data and observation field notes without question contribute to the research's construct validity. In addition, KUS ECM colleagues are invited for consultation on the preliminary draft of the study. The action is to pool synchronize their judgment to insure validity to the research.

Our view has been adequately supported by Sekaran and Bougie (2010) who point out that there are several kinds of triangulation research methods, including data triangulation, researcher triangulation, method triangulation and theory triangulation. Another study by Oates (2006) also suggests that there can be many types of triangulations in a study (Table 3.10, page 109). Steinke (2004), in particular, detailed triangulations which align multiple complementary theories with several investigators, different data sources, literature databases, and a variety of data collection approaches to support the credible findings of the study; our interview with different support functions of KUS ECM colleagues (academic departmental heads, lecturers, academic supporting colleagues) is well attested in terms of such triangulation.

Table 3.10
Type of Triangulation

No	Type	Description
1	Method	Uses two or more data generation methods
2	Strategy	Uses two or more research strategies e.g. ethnography, action research
3	Time	Takes place at two or more points in time.
4	Space	Take place at two or more countries or cultures to overcome the parochialism of a study based in just one country or culture.
5	Investigator/ analyst	Different researchers carried out the same research topic and then compare their findings.
6	Theoretical/ perspective	Draws on two or more theories rather than one theoretical perspective only
7	Source data	The data originate from multiple sources e.g. observation, surveys, in-depth interview

Source: Adapted from "Researching Information Systems and Computing" by Oates, 2006.

It is also worth mentioned that present study also applies Bohm's (2004) suggestion, namely that three types of strategies which can be used to verify the theory. Initial checking of the theory to show if it is empirically grounded by cross data consistency checks. By returns frequently to collected data and using a concept-indicator model to validate the concepts which are used in developing the theory. Early checking of the "fit" of developed theory by using a conditional matrix is meant to delimit a theory by clearly identifying the conditions under which the developed theory would apply. The robustness of the emerging developed theory by "testing" alternative theories on the same collected data has been considered, whereas "real-life" validity may be checked by taking interpretations of the data back to a group of participants to see if they can relate to the emerging theory.

In sum, the present study intends to present the quality of PAR which Myers (2009) has proposed, which includes factors such as authenticity, credibility, representativeness and meaning to this KUS ECM study. First and foremost, as the evidence of the ECM practice clearly shows, the action is genuine and unquestionable with regard to its origin and authenticity. Next, the collected evidence is free from error and distortion, making the present study all the more credible and transferable. The action, when applied to different functions and departmental colleagues, who involved in the present study, makes it all the more representative. Subsequently, clear and comprehensive ECM on TLC gives the present study meaning in the context of KUS ECM.

It has been argued convincingly by Herr and Anderson's (2005) good action research criteria, which refers to quality, goodness, validity, trustworthiness, credibility, and workability. Our study of action is designed to generate new and transferable knowledge from ECM practice. There is no doubt that the action-oriented outcomes are constructed to resolve practical KUS ECM issue. What is most important is that our KUS ECM colleagues also learn to move forward in an ECWE. The ECM practice therefore increases KUS competitive advantage.

One may therefore contend that the PAR method as we have applied in the present study is a sound and appropriate research methodology for e-collaborative research. It multiple data source for triangulation and the outcome that ECM practice can be generalized for other people, setting and times. The human-focused ECM model as are offered (Table 3.11, page 111) not only deals with the accuracy of pattern matching, rival explanations, peer-reviews and model but also make validity its goal**.** As Oates

(2006) has aptly pointed out, good academic research has appropriate data source, sufficient evidence and are efficiently recorded accurately. In short, our research conclusions are well-founded and properly presented and well-judged by the participants of the present study.

Table 3.11
Action Research Validity Criteria

No	Criteria	Goals of Action Research
1	Dialogic Validity	To generate new knowledge that is assessed by peer-review and disseminated through academic journals
2	Outcome Validity	Artifacts that are proved efficacious in ECM practice and solving the research problems
3	Catalytic Validity	Both researcher and participants acquire the new knowledge into action process.
4	Democratic Validity	Findings are relevant to the participants, site, and environment
5	Process Validity	Research methodology is comprehensive and able to resolve research problem. In addition, it increases the participant's engagement and their knowledge of the ECM process.
6	Construct Validity	Derived from multiple data source as triangulation.
7	External Validity	Generalize research results to other people, settings and times.
8	Internal Validity	Create credible results through its accuracy in pattern matching, rival explanations, peer-review, and logic model

Source: Adapted from "The Action Research Dissertation: A Guide for Students and Faculty" by Herr and Anderson, 2005.

3.8 Summary

Throughout the chapter, it is argued that non-profit HEI and its flourishing has become in a full university good reason why HEI, KUS has been selected as ECM on TLC's PAR field. The present study is underpinned by the importance of inter-subjectivity whereby treatment of ECM action proceeds, our research encourages a constructive

cooperation avenue for KUS ECM colleagues to work together in collaborative manners. It also encourages the participants to provide feedbacks and to further suggests alternative solutions. As a convener, the present researcher has facilitated practicing this ECM on TLC through PAR approach.

There are, in sum, three PAR cycles to ensure that KUS ECM is a CoP. For each cycle reflection the aim of brainstorming and negotiating with KUS ECM colleagues is to help participant discover the most potential improvement of KUS ECM practice. Close observation, inquiry, and mining document data are the three data collection techniques that had been used in this research. The data collected has been categorized into open, axial, selective, and theoretical coding techniques. Our conceptual study on various theories helps us to construct a firm theoretical framework. Research findings which end with discussion and recommendation have been sufficiently formulated in our current study.

CHAPTER FOUR

RESEARCH FINDINGS AND ANALYSIS

4.1 Introduction

In the foregoing chapter, the researcher has laid bare PAR design and method. We have argued that ECM on TLC has become one of the most pressing issues that is encountered by HEI and that the development of a viable ECM on TLC practice is necessary. We have also contended that the theory must be supported by insights that are gained from the synergy of social and system theories. Furthermore, the theoretical framework mentioned above must in turn form a bedrock for the argument on the importance of PAR and grounded theory. Granted, the current contention is that any theory can only be reified in terms of empirical practices which are further strengthened by necessarily participatory efforts and the knowledge that is generated and produced by concrete analysis of the findings. That is to say, the deployment and display of necessary test-case, for example, PAR, especially the findings that are based on the qualitative analysis of the research data, must now be substantiated.

The present chapter is therefore a further explication of the details concerning the PAR field work. It intends to outline focus on the importance of advocation, adaptation, and alignment in the three notably PAR improvement cycles. Each cycle contains four interlocking phases: action planning, learning and realizing, observing and inquiring, analyzing and reflecting. Both the action planning, learning and realizing phases are applied to PAR guideline theories, whereas strategy and initial condition for ECM are meant to create values, conduct its process, and to sustain its practice. The observing and inquiring phases are applied participant observation and in-depth interview. The

analyzing and reflecting phases are applied to the ladder of inference loop for creating right action plan.

The researcher, who functions as ECM on TLC's convener intends to facilitate participants in taking part in ECM on TLC. The researcher and participants together as stakeholders in KUS have worked in collaborative manners on this ECM on TLC project. In consultation with KUS senior vice president who is also cum the director of academic affair and registrar Office. He has provided information of on how others HEI online system accumulates, organizes, preserves and share their TLC. His articulation on an actual online TLC site allows the researcher to realize the TLC preparation practice and ongoing development process. He also highlights on "HEI competitive advantages originated from online TLC management". The researcher agrees that TLC is one of HEI's pivotal source parameters for delivering curriculum to HEI's students. He fully supports this ECM on TLC's PAR conducted at KUS.

The research data has been collected with a triangulation method which is accumulated from participant observation, in-depth interview, and mining data from documents. The data have been analyzed by means of the grounded theory through coding, categorizing and conceptualizing process in order to develop a human-oriented ECM on TLC model. Then, the developed theoretical model is compared with Karl Wiig (2011) people focused knowledge management model. The PAR generated four factors all acting as similar function to Karl Wiig (2011) four people focused factors are drivers, enablers, facilitators, and mechanisms in this people focused knowledge management model.

The four factors as discussed from both models are corresponding and comparable to motivate and inspire people manage organizational knowledge.

4.2 Describing the Advocation Action Process Cycle

The present section describes first and foremost PAR cycle which advocates ECM on TLC's value at KUS. It details the action being taken by advocating and co-constructing ECM on TLC which are carried out ECM with participants. The researcher articulates this pilot test period appreciate also their efforts and dedication to the outcome. This determines the collaboration among ECM participants forging therefore trust building relationship in virtual work environment. Moreover, the cycle of action plan, strategy, and execution tactics are in accordance with the preliminary PAR guidelines for ECM on TLC.

4.2.1 Action through Envision and Co-Construction

Advocating action process is the first stage of the ECM on TLC model. The researcher initially articulates why ECM on TLC is the forthcoming TLC management approach to CCO colleagues, PDA colleagues, CITL colleagues, and faculty members from four different academic and academic supporting departments. The researcher has urged various participants to envision the ECM on TLC as beneficial to themselves and all others. Using the co-construct of ECM on TLC model, collaboration relationships and skills are subsequently developed. Team spirit not only helps to accomplish the ECM on TLC goals but also to develop individual's competence.

The researcher has convinced the CCO colleagues to provide PDA, CITL, and faculty colleagues with easier and more convenient access to the Moodle CIMS and SharePoint CIS. The researcher also explained to the participants the relevance of ECM on TLC which serves as one of the pivotal parameters for faculty members to deliver teaching curriculum. Moodle plays a vital role in retrieving and conveying TLC in every semester. SharePoint serve as the data warehouse facility that preserves TLC in organizational memory.

As part of the accumulated effort, PDA colleagues had been convinced that ECM on TLC is helping them to alleviate their workloads in administrative cooperation and increase their productivity in departmental collaboration. Besides, the researcher has also explained that synchronized communication on TLC reduces waste in follow-up communication, acknowledgements, waiting time, and the consumption of labor resources. The SharePoint CIS can simultaneously retrieve, audit, and amend TLC and ease their job to advice respective TLC originators or editors when discrepancies of TLC are found.

It is also the researcher's convince task to his CITL colleagues that ECM on TLC may help to solidify innovation in their teaching and learning objectives and therefore sustain KUS competitive advantages. Explanation has been made regarding TLC as the second most precious HEI resource after the academic human resources. TLC is understandably the second core HEI service component subsequent to the curriculum delivery approach. Novice lecturers, for examples, may have ample opportunity to read TLC, which is standing on the shoulders of giants to learn faster and originate better

TLC for curriculum delivery. This ECM on TLC will assist them on enhancing the quality of innovative teaching and learning in KUS.

To perpetuate the effectiveness of the research agenda, vigorous negotiations with respective faculty colleagues on TLC has resulted in helping the latter to accumulate, update, monitor, track and retrieve updated TLC effectively. It has been adequately explained that ECM on TLC would help to alleviate their administrative workloads, increases the capacity to focus on TLC delivery skills in the classroom. Since effective ECM on TLC enables them to upload new TLC and to amend existing TLC via SharePoint CIS. Moreover, all TLCs are preserved in secure and organized subject folders in SharePoint CIS. Furthermore, they can also be simultaneously and collaboratively edited in SharePoint CIS and save the latest versions. The important point is that when there is synchronized authoring of TLC, with two or more numbers of colleagues working together in SharePoint CIS.

4.2.2 Interpretation of Findings and their Implications

Besides what has been articulates, CCO colleagues have made the suggestion that a clear vision and mission for ECM on TLC colleagues be sustained. All KUS colleagues rendered unreserved supports to ECM on TLC project once they had understood its objectives. They recognize without demur that SharePoint CIS alleviates the Exchange email server workload. The system also reduces the risk of networking communication failure and server over utilization. But, the colleagues need to put extra effort into

learning how to manage SharePoint administrative functions well when serving new ECM on TLC users. To substantiate our point, CCO colleagues have highlighted that:

> "ECM on TLC project must have clear common goals which highlight all parties' benefit and their responsibilities." (Application System supporting colleague from CCO)

To further consolidate out contention, it is also stated by CCO that:

> "All relevant parties have common grounds to make ECM on TLC as own professional career development and sharing skill and knowledge to others' behavior." (Network System supporting colleague from CCO)

PDA colleagues, on the other hand, recognize that synchronized data update saves them critical time in compiling syllabus handbooks. ECM on TLC also minimizes job redundancy in follow up calling and waiting for corrected soft copies of TLC to compile and print. It eliminates emailing which is obsolete, unnecessary, or wrong copies of TLC. The researcher had suggested the promotion of ECM on TLC in each faculty so that their draft copies of TLC could be preserved or stored. A faculty colleague can simultaneously draft his/her TLC, which would accelerate the authoring pace and improve the quality. PDA colleagues continuously update any latest syllabus template and TLC requirements from MQA. Colleagues are in the process of amending TLC according to the latest syllabus template and TLC requirement. To demonstrate our point the following example is cogent:

> "Cooperate and parallel compiling and editing syllabus with faculty colleagues definitely shorten documentation preparation to MQA and reduce inconsistency of information audit from MQA." (Syllabus compiling colleague from PDA)

CITL colleagues confirm that ECM on TLC facilitates innovative teaching and learning processes. They have discovered that SharePoint CIS database helps in organizing and preserving TLC downloaded from Moodle CIMS. These TLC can be the source review and assessment for the lecturers' quality of teaching and learning development. From there, training on need analysis for weaker lecturers becomes inevitable. They can use the preserved copy of the TLC to assist them in creating a better TLC. From Moodle and SharePoint preservation, they also can compare, contrast, and benchmark for TLCs that need further improvement which is in line with market and technology trend. The following evidence serves the purpose of our contention, namely that:

> "Appreciate those lecturers who are always acquiring, preserving, organizing, maintaining, and sharing their organized quality TLC through Moodle. These TLC are becoming their teaching and learning academic e-portfolio and delivery to their students through Moodle." (E-Learning coordinator colleague from PDA)

Colleagues from different faculties admit that ECM on TLC enhances cohesive work for all colleagues. They can use preserved quality TLCs as a model to assist novice lecturers, which is the same finding as that of CITL colleagues. They also find that peer review of TLC can motivate them to perform better in the authoring of TLC. They opine that collaborative TLC management provides ample opportunity for developing

more innovative TLC. They also suggest that KUS management should be answerable to the need by providing special incentive to the lecturers who are authoring quality TLC. These incentives will encourage lecturers to contribute to their TLC and encourage them to help other lecturers. It is a win-win solution among lecturers, faculty and KUS. Moreover, there is also proposal that KUS should have a sustainable policy concerning the update of TLCs in every semester. The evidence as given below proves our point further:

> "Lecturers are required to submit their TLC for each subject to faculty heads for peer review before formal lecture begins in each semester. It is hard to ensure TLC is up to date and have proper delivery schedule if enforcement policy is lacking and TLC preserving server. Rational incentives to those collaborative, creative, effortful, and helpful lecturers encourage quality curriculum delivery." (Department head from a faculty)

4.2.3 Reflection on Practices and its Outcomes

The four findings from the above generate the following interpretations. First, the CCO colleagues who mention that securing TLC and sharing are a value to KUS. TLC as such flows across faculties and academic supporting departments. They therefore need ECM on TLC colleagues to take care of it like any monetary assets. Therefore, they should develop the ethos of e-collaboration to avoid any accidental deleting or disclosing private and confidential materials to competitors or channeling such information for private use.

Second, the PDA colleagues aver that TLC may be synchronized to ensure availability, consistency, accuracy, credibility and validity. Therefore, KUS requires ECM on TLC in order to provide quality education management. This is in line with MQA's Code of Practice for Institutional Audit (MQA, 2009). Implementation of such quality is linked to International Standard Organization (ISO9000:2008) standard for document creating, updating, distribution, control and review.

Third, the CITL colleagues indicate that developing and synthesizing TLC could increase the chance of a TLC improvement. Lecturers from different disciplines have their own style of authoring TLC. CITL colleagues can therefore collect and synthesize with versatile style in order to develop a more credible, quality TLC templates for the lecturers. This leads to natural and continuous unfolding of TLC in order to prepare the students to gaining knowledge and the digestion of knowledge.

Fourth, there are faculty colleagues who aver that ECM on TLC increases cohesive works among colleagues and academic supporting departments. Granted that the lecturers know each other's TLC makes possible learning overlaps and interlaces. As learning is a gradual process and knowledge is likened to layer piles. It is especially important that HEI takes into account the importance of professional foundation subjects and knowledge vis-a-vis primary and secondary schools.

4.2.4 Insights Gain from Best Practice

It is from the advocating action process mentioned that the researcher learn through such action that ECM on TLC helps all faculty colleagues and academic supporting colleagues. MQA audit may discover incompliance to quality delivery of curriculum contents, and to monitor if TLC is unmanaged, unstandardized, unfit, inconsistent, incredible, and unavailable (MQA, 2009). From a more positive light, ECM on TLC can resolve the discrepancies and help all faculty colleagues and academic supporting colleagues unite and to work cohesively. They, however, need clear direction, protocol, and procedure on how to work together. Using standard operating procedure one may articulate clearly the work flow and timeline of TLC preparation and helps to make good progress in monitoring.

The action process lays bare that faculty colleagues should be given the opportunity to understand ECM on TLC brings various benefits to them. They also need to know how to use such CIS tool like SharePoint and Moodle. The researcher needs to be convinced that SharePoint is the appropriate TLC preserving tool, a feasible administrative tool and it is by far the more adaptable than other information, communication and technological tools. There is also need to explain to the participants the several advantageous features of both Moodle CIMS and SharePoint CIS. As one has adequately argued SharePoint CIS consist of timely alert to respective TLC sharing colleagues (for example, on their bottom right of computer screen which TLC has updated). It also helps to track which are the unread of the updated TLC to respective sharing colleagues.

On the other hand, the researcher minimizes the negative impact of the ECM on TLC to all faculty colleagues and academic supporting colleagues, such as desktop hang-up when connecting to Moodle CIMS or SharePoint CIS. The researcher has been successfully in convincing them that they shall allocate resources to support and assist them in solving TLC access issues with Moodle CIMS or SharePoint CIS when network, server or their desktop technical issue arise. The whole process is to build trust and support relationship between faculty colleagues and academic supporting colleagues and colleagues from CCO.

4.3 Describing the Adaptation of the Action Process Cycle

In the present section, the second PAR cycle which aligns ECM on TLC practice to sustain ECM in KUS is explained. The aim is to detail the action being taken with co-constructing ECM on TLC which is carries out ECM. The researcher also gives the appreciation to the participants for their efforts and dedication. The practice shapes the possibilities of the cooperation and collaboration among ECM participants who have developed a rapport and trust relationship in their virtually based collaborative working environment. Moreover, the cycle itself is to realize the advocating action in the context of practice, its outcomes as well as the lessons learnt of probable best practice.

4.3.1 Action through Co-Construction and Appreciation

The second stage of developing the ECM on TLC model hinges on adaptation process. Adapting is the key to sustainability (Graves & Marston, 2013). It serves as an ever-

changing set of community and donor priorities, focusing on the impact today and in the future. The researcher explains how ECM on TLC should operate and perform. This helps ECM on TLC participants understand the protocol and procedures of the ECM process. It evokes cohesive teamwork among ECM on TLC participants. The researcher and participants together co-construct the ECM on TLC process at this stage. The researcher uses positive thinking and appreciates each other in building ECM on TLC process. This process is to adopt SharePoint and Moodle CIS into an ECM on TLC system.

To facilitate adapting effectively, the researcher encourages CCO colleagues to adopt SharePoint as its ECM on TLC's CIS. First, the CCO's shared documents are preserved in the SharePoint CIS. Second, the CCO's colleagues' desktop PC or Notebook has Microsoft Office SharePoint Work Space installed. Third, their Work Space is synchronized with the SharePoint CIS. Fourth, the CCO's shared documents are updated if their Work Space documents have been modified. Fifth, the Work Space of CCO's colleague receives unread, new or updated document's notices. This practice enables them to realize how SharePoint works for e-collaborative document are managed. As a result, the researcher is able to convince CCO colleagues that SharePoint can work effectively for ECM on TLC at KUS.

The researcher also assists PDA colleagues to create sequence folders for degree, diploma, and foundation programmes and the faculty. The action is targeted it satisfying MQA audit requirement regarding common subjects. But it shall not be confused with the Moodle hierarchical structure of folders, which is faculty, degree, and

diploma. The Moodle order is to empower KUS colleagues and students to interact with their pprogramme and its subjects. Added to this is each programme has several subjects to be enrolled at Moodle in each semester. Besides creating folders for each program's faculty colleagues, PDA colleagues also provide each programme's standard format of subject names and course codes to CITL and faculties. This is to secure standardized TLC folders for each subject.

The researcher facilitates CITL colleagues to cooperate with the Registrar to obtain the subject list before each semester resumes. They create subject folders by topic and/or by week, by calendar installing TLC contents, such as syllabus guidelines, lecturer slides, topic notes, assignment instructions and rubrics, into the Moodle CIMS. The director of academic affair and faculty heads shall conduct reviews on the subjects, monitoring progress of each subject and quality of delivery. CITL colleagues collect Moodle reports for each subject or the materials which are provided by each lecturer for the director of academic affair and faculty heads. Only then, CITL colleagues shall maintain backup copies of all subjects' TLC from Moodle CIMS to SharePoint CIS at the end of every semester.

The researcher guides faculty colleagues to utilize the SharePoint CIS which serves to preserve the e-portfolio of their subject. The process can reduce the burden of preserving hardcopies of students' course work. The TLC of these subjects and its e-portfolio preservation in soft copy format shall reduce the waste of storage space and search time. Moreover, the SharePoint CIS can also assist TLC preservation through organization, simplification, and through conducive work environment. Furthermore, it

creates effective collaborative authorship, synchronized updates and sharing (Tapscott & Williams, 2010). Internal audits or external audits such as MQA ease the burden of retrieval, reading, and commenting online. Faculty colleagues can supplement or delete obsolete TLC folders according to syllabus changes.

4.3.2 Interpretation of Findings and their Implications

CCO colleagues play an important role in nurturing colleagues, who manages the Moodle CIMS and studies the SharePoint CIS's setup. They lay bare that SharePoint CIS performs better than Windows Server's share folder or Desktop PC's share folder. The SharePoint CIS not only tightly connects with Microsoft Office Work Space but also functions well for file contents searching, downloading, authoring, and updating through its web accessing technology. A PC or mobile device without Microsoft Windows operating system or Office application is also able to perform the same job as managing SharePoint CIS' files and contents. SharePoint CIS makes the file and its contents easier to access and to be governed at different levels of file access right, such as "Full Control", "Design", "Contribute", and "Limited Read Access". For example, one of the participants has laid bare that:

> "TLC uses web browser to browse, access, update, download, and delete materials. It is easy to learn and faster to connect to SharePoint CIS for other departments' colleagues because they are accustomed to web surfing and less drawing computer resources" (Infrastructure supporting colleague from CCO)

PDA colleagues create each subject's folder and placing syllabi in them. They realize that they will be benefited when implementing ECM on TLC. CITL colleagues accumulate backup Moodle CIMS's TLC into SharePoint CIS as PDA colleagues created subjects' folders. Faculty colleagues make supplements to SharePoint CIS's TLC. PDA colleagues offer additional remarks when the deans, department heads and secretaries are critical of TLC in its creating, developing, organizing, updating and distributing materials. KUS colleagues always monitor TLC evolution progress and initiatives, highlighting the changes in topic and percentage of contents in TLC to PDA colleagues. Then, PDA colleagues report to MQA concerning content changes that are more than thirty percent. As one of the participants aptly explained:

> "There is a need to encourage colleagues to take note of TLC. The TLC affects the quality of curriculum delivery and helps to maintain accreditation standard." (Syllabus compiling colleague from PDA)

CITL colleagues preserve semesterly TLC from Moodle to SharePoint. They compare and learn different disciplines, fields, extents, levels and subjects of TLC. The monitoring of the multiple discipline levels and subjects of TLC learning create better TLC, which are customized to fit certain level of students. Moreover, they can compile the best TLC and make versatile TLC template samples for different disciplines, subjects and courses. Furthermore, they assess quality of TLC among lecturers. This is to provide training in analysis for poor TLC creators. Their training analysis offers more training programs to poor TLC creators. These training programs help lecturers to develop better TLC for subject conducting. To cite one of the participants' caveat:

> "HEI collected from different groups of lecturers with different area of knowledge and professional skills but most of them are lacking of hand-on teaching experience. There is a need therefore to have TLC creating and delivering training in order to empower them to adapt to KUS working and teaching environment." (Syllabus compiling colleague from PDA)

Faculty colleagues make use of SharePoint to update TLC in their academic e-portfolios. They prepare their weekly lecturing TLC drafts in their faculty's Windows Server's share folder before the beginning of every semester. They exchange opinions on readjusting a subjects' TLC to suit the learning progress of student. This is knowledge exchange on TLC research and development. There may be a learning gap when different intake batches of students in a combine subject class and are using the same TLC. Different lecturers may have different weekly TLC. A part-time lecturer's weekly TLC pace may not be same as others. Deans or departmental heads review, comment on and approve or disapprove weekly lecturing TLC before their lecturers upload them to the Moodle CIMS for delivery. Moreover, different deans and department heads also utilize Moodle CIMS and SharePoint CIS as TLC knowledge exchange platform among themselves in order to improve better weekly TLC delivering because their student may cross taking faculty learning subjects. As to the importance of the academic e-portfolio, the following caveats have proven significant, namely that

> "TLC is one of academic e-portfolio to faculties' input raw materials for producing quality graduated students. SharePoint CIS has to let lecturers

accumulating, updating, and sharing TLC to become academic e-portfolio server." (Department head from FAD)

And that

"Appropriate TLC sharing policy meets MQA requirements, quality evaluation and protects intellectual property for respective lecturers or TLC owners." (Department head from FHSS)

4.3.3 Reflection on Practices and its Outcomes

There are at least four possible interpretations based on the above action process findings. First, TLC needs to have tightly linked and secured storage to consolidate the argument that TLC is truly organizational assets and viable intellectual property. To achieve this end, it requires a highly reliable, efficient, and accessible CIS software, hardware and a supporting competent team. Moodle as understood is a Shareable Content Object Reference Model (SCORM) which complies with open source course management system. TLC in SCORM has reusability, accessibility, interoperability, and durability. Therefore, Moodle CIMS is prevalent in education institutions from primary school to higher education. The SharePoint CIS provides seamless teamwork for an organization to collaborate, innovate and drive its activities in new ways (Sampson, 2009).

Second, PDA colleagues highlight ECM on TLC as pivotal for it controls TLC changes and its progress. They also brief other colleagues on what and how the contents of every syllabus which manifests TLC always has improvement opportunities for the originators to amend according to the evolution of learning environment, foundation knowledge of learners, government education policy and industrial requirements. This means that current TLC almost certainly enriches the capability and competence of the learners. When the colleagues from difference professional faculties collaborate in authoring TLC, the outcome will be that enhance TLC development.

Third, CITL colleagues take care of TLC as part of organizational knowledge management (KM) and therefore make SharePoint CIS an organizational memory (OM) device. This allows TLC to contribute to innovative teaching and learning development. They go beyond their CITL colleagues in term of duties and responsibilities. They also select the most presentable, absorbable, and conformable TLC for sharing thereby assisting others lecturers. All lecturers who attend this TLC sharing session will learn what and how to conduct research better TLC as well as to improve their skills of TLC delivery. They also backup the learners study outcomes on the SharePoint CIS. These learning outcomes, such as assignments, course works and final projects supply data for MQA audits of the teaching and learning training materials.

Fourth, a faculty colleague's TLC preparation for every semester exhibits his or her advancement of the organization of teaching activities. These activities definitely help their learners to progressively flourish in TLC. They can retrieve SharePoint CIS's last semester's TLC preservation and make adjustment for the coming semester TLC. The

SharePoint CIS becomes the e-portfolio, which shows the whole learners' studying progress in whole program cycle. They can further discuss the progress of each new batch's learning. Therefore, TLC's extends its development to suit the learning progress of the students. Its differences, however, are in delivery and explanation. Lecturers may use more learning examples to help students if the latter are weak in understanding and digesting the materials, due to their weakness in foundation experience and knowledge or not having enough prerequisite subject knowledge when they enrolled in combined classes.

4.3.4 Insights Gain from Best Practice

The researcher has learnt from the adaptive action process that ECM on TLC needs all relevant colleagues with positive thinking and initiative in helping each other to make TLC alive and vigorous. They ought to learn to recognize that Moodle CIMS and SharePoint CIS can fulfill ECM on TLC objectives. All KUS colleagues need to connect, communicate, cooperate, and be courteous, for example, to put into practice the four attitudes that relate to collaboration. These attitudes exert influence on TLC progress and development.

Different departments also have their own role to play in ECM on TLC. They need upstream and downstream departmental colleagues to cooperate with them in amending and improving TLC. There may well have overlooked that certain TLC were not updated according to MQA requirements. PDA colleagues, for examples, use their departmental whiteboards to draw matrices depicting the progress of syllabus and TLC

updating. This serves as a good monitoring system to develop a viable workflow-system to acquaint other colleagues with the priority tasks.

CITL and faculties colleagues also need to hold tight cooperation with one other to conduct TLC development's training programs. CITL colleagues can invite senior, experienced, and colleagues who perform well to share their experience on TLC authoring and delivering skills. As students may well have faced learning gaps or stuck over the quality of TLC delivery, their learning experience may also help the faculty colleagues to further amend TLC. The synergy mentioned is significant, as teaching and learning are lifelong processes in the fast changing environment.

4.4 Describing the Alignment of the Action Process Cycle

The section describes the third PAR cycle which aligns ECM on TLC practice sustenance of ECM in KUS. It details the necessary action being taken by appreciating participants' efforts and their contribution to the outcome. This in term enables them to gain confidence and commitment to sustain ECM on TLC. Moreover, this cycle functions, as to fine tune the previous adapting action from previous reflection on the context of practice and outcomes as well as lessons learnt from best practice.

4.4.1 Action through Appreciation and Sustenance

This action-aligning process is the third stage in developing the ECM on TLC model. Aligning human, information, communication and technology (ICT) resources to establish ECM on TLC has become the main task of the researcher. A number of feasible actions had been taken to secure its success. First, the researcher encourages the participants to appreciate each other's collaborative efforts. Next, he empowers them to invent the best practice of ECM on TLC. Then, he also assists them to envision the concept of community-based collaborative management. All these action are meant to sustain ECM on TLC practice.

To perpetuate the action-aligning process, the researcher motivates CCO colleagues to explore more closely on the conveniently access system of the Moodle CIMS and SharePoint CIS. Moreover, they are encourage to explore how the two systems are closely linked in easing the need of PDA, CITL, and faculty colleagues, for example, to secure TLC backup process. The researcher has acquired on their behalf both Moodle and SharePoint system training modules, system deployment procedures and administrative documents. In addition, CCO colleagues have put in effort in the study of how Moodle system is being installed in SharePoint CIS so as to integrate authentication and preservation. Furthermore, they also discussed and further proposed to use Single Sign On (SSO) solution with Microsoft Windows Active Directory Authentication.

In the process the researcher energized PDA colleagues to organize better of TLC under each Faculties' programmes' folder in SharePoint CIS. The researcher has concluded

that each subject must keep to minimum folders for “lecture slides and notes”, “assignment instruction and rubric” and “student course work”. “lecture slides and notes” with the “assignment instruction and rubric” used folder for preserving learning outcomes assessment, and the “student course work” folder for preserving the learners’ exercises, artifacts and reports. Moreover, they also need to explore the contents of the better writing subjects’ synopsis, and learning outcome. These encourage collaborative authoring, organizing, and updating of TLC.

In order to have CITL colleagues involve in the exploration of how to organize better TLC and subject arrangement category in Moodle, the colleagues mentioned SCORM are encourage to develop better pedagogy in conducting TLC delivery. Moreover, they are also to explore how complex TLC can be conducted in simple ways. The TLC’s subject cataloging label needs to have subject code, subject name and lecturer name in Moodle. Subjects conducted in Moodle are comfortably arranged according to the lecturer’s name and the subject code in alphabetical order in the faculty folder. When the students enrolled in only one programme in KUS, most of their subjects will filed in one of faculty folders, with the indication of the programme’s subjects by semester, and the lecturer name and subject code. This endeavour is meant to minimize errors in logging on to different lecturers who conduct the similar subjects in the same semester in Moodle e-learning portal.

Besides, it has been the responsibility of the researcher to urge faculty colleagues to work with the management team in order to explore the development of a TLC guideline and to disclose relevant policy to protect the intellectual property of the

lecturers. KUS has to develop incentive policy for those lecturers who produce new program syllabi. Only then, KUS can simultaneously develop new degree programmes' syllabus and gain approval to run the programs from MQA after three months. Understandably the KUS incentive policies, for example, in the area of TLC, management guidelines on intellectual property administrative procedure influences KUS colleagues' passions, collaborations, efficiency, and notably performances. KUS top managements have rewarded those lecturers who are originating hard copies of study guides serve for student. The researcher proposed those study guides publish in soft copy format which convenience for student downloading from Moodle CIMS and for academic colleagues sharing in SharePoint CIS. It leverages the quality of curriculum delivery to students and KUS colleagues' competency.

4.4.2 Interpretation of Findings and their Implications

CCO colleagues continuously improved its maintenance service quality and also timely system-patch updating and version upgrading of both Moodle CIMS and SharePoint CIS. PDA, CITL and faculty colleagues had acquired swift support from the CCO whenever they encountered ICT issues that are connected with both Moodle and SharePoint systems. They not only made the site map of KUS web-hosting portal for colleagues and students, which brought convenience to their use of both Moodle CIMS and SharePoint CIS portals. They also installed a Microsoft Office SharePoint Work Space, a shortcut and a favourable Web browsing tag for KUS colleagues' easy access to both portals. Based on the above findings, one participant has confidently contended that:

> "Focus on improving ECM on TLC model with reconstructive learning and realize of ECM on TLC practice. TLC safe preservation, fast accessibility and well organized portals shall be more convenience for lecturers and academic supporting colleagues." (Infrastructure supporting colleague from CCO)

PDA colleagues had been adequately briefed to train other faculty colleagues to develop quality TLCs that meet MQA auditing requirement and demands of other external programmes. They also played a significant role of internal auditing for faculty syllabi and TLC weeks before the external audit. These internal audits require faculty colleagues to substantiate TLC delivering in full compliance with MQA requirements. The evidence include "lecture slides and notes", "assignment instruction and rubric" and "student course work" preserved on the SharePoint CIS, which are backups from the Moodle CIMS at the end of every semester by CITL colleagues. Therefore, faculty colleagues frequently needed to monitor the evidence of audits that are preserved on the SharePoint CIS. This is to ensure that faculty colleagues deliver their TLC in agreement with their printed syllabus. One interview participant who accepted our survey in the form of interview has described that:

> "The TLC of each subject needs to be put into well-structured directory for respectively lecturers to maintain them and easily for others to access. Especially the common subject of MQA, university, and faculty level are needed to properly store up in respective subdirectory." (Syllabus compiling colleague from PDA)

CITL colleagues proactively involved in the learning of faculty colleagues and the student had used the Moodle published materials, for example, reference guides, so that they not only obtain the reference guide online but also immediately get access to and quality support from CITL for resolving their TLC issues during office hours. Moreover, faculty colleagues had conducted Moodle courses in accordance with entry, immediate and advance levels. The content of these courses include TLC uploading, editing, conducting, downloading, backing up of data and its restoration, as well as other related lecture topics, assessment and grading features. Furthermore, external personnel such as well-trained, professional teacher had been invited to deliver talks and advice on issue that relate to TLC for delivery in classrooms and online. The criticality is demonstrated in the following statement:

> "We courteously encourage lecturers to utilize Moodle for delivery of their curriculum, train them to develop quality TLC, provide hand on guidance to facilitate practice Moodle delivery TLC, assist them to innovate learning objects for TLC in Moodle, help them make use of all Moodle features to complement weakness of TLC face delivery in classroom, cooperation with them to improve Moodle CIMS performance." (E-Learning coordinator colleague from CITL)

Faculties' colleagues led by theirs deans and department heads are role models for ECM on TLC. Respective Deans and department heads always made accessible to the colleagues their quality TLC, to advise them that TLC must be able to capture the attention of learners. They give sample TLC templates, attractive TLC objects such as

clip arts, audios and videos to enhance their colleagues' competence in TLC. Some faculty heads even published study guides on the subjects and disseminate them, respectively, to the students and colleagues. They invoked other colleagues to cooperate in order to make better delivery to the students. As Pullen, Baguley and Marsden (2009) has pointedly mentioned, facilitative leadership, organizational and interpersonal communication, expertise in knowledge and practical skills that allow people the sense of belonging, adequate resources, and groups work all contribute to common goals and vision of TLC. As to the significance of policy making vis-a-vis teaching and learning management, the following caveat seem most pertinent:

> "KUS top management members and their policy could influence KUS colleagues to align their ambition with teaching development and thus, articulate KUS core mission deliver quality education, strategic priorities KUS resources to quality TLC delivery. All these involve organizational changes to reciprocal benefits for all the colleagues." (Department head from faculty)

4.4.3 Reflection on Practices and its Outcomes

There are four feasible interpretations that can be gathered from the above findings. First, CCO colleagues had continuously improved on both Moodle and SharePoint portal accessibility and thereby, exhibiting their contributions to ECM on TLC. The display of ICT knowledge and skills show their unreserved commitment to ECM on TLC. Their commitment to quality services boost effectiveness of ECM on TLC; second, when PDA colleagues are keen to train, audit and advise faculty colleagues in

syllabuses writing and TLC development exhibiting, they notably increase the syllabi and TLC consistency in order to comply with MQA and other external audits; third, CITL colleagues have created enormous resources for faculty colleagues to produce quality TLC. The keen supports are built on the firm ground of excellent relationship with faculty colleagues. Their courteous cooperation and help to faculty colleagues are, under in generative sense, engender better performance in composition and delivery TLC. It shows their true spirit of team collaboration; fourth, faculty colleagues had been given role models for TLC creating, updating, sharing and exchange of knowledge in the domain. This positive attracts as outcomes more TLC's followers and cultivates more collaborative colleagues in the community of collaborative TLC management.

4.4.4 Insights Gain from Best Practice

The researcher had learnt from the aligning action process with the ECM on TLC that there is a need to align colleagues' collaboration efforts. Different functional departments and their colleagues have their distinct roles in KUS. CCO colleagues have to offer right support at right time to other colleagues. They need to explain technical issues in a simple way in order to help others understand their problems and limited resources during their servicing. This will minimize misunderstandings among colleagues and create a trusting relationship. Other colleagues come to know the extent to which CCO colleagues have developed their capabilities and competences. Departmental and individual level common understandings are important foundation for collaboration.

PDA colleagues TLC internal audits are benefits to both faculty and PDA colleagues, which helps faculty colleagues to learn how to avoid the major corrective action demanded from external audits. They can have close cooperation and coordination when facing external audits. KUS competitive advantages always come at the internal colleagues' collaboration relationship level. CITL colleagues are in back supporting faculty colleagues to make quality and attractive TLC delivery. Their activities are leverage and synthesis holistic TLC improvement. Faculty colleagues need to appreciate the efforts of other KUS colleagues and show that they can continuously create and deliver better TLC. The aforementioned lessons learned are what ECM on TLC must learn to achieve its purpose.

4.5 Theoretical Model: A Proposal

From the three PAR cycles mentioned above, which revolve spiral improvement of ECM on TLC, the researcher had consolidate accessible transcripts from interview, observation, document, findings, reflection, and lessons learned. It entails data-driven process with the use of grounded theory to develop a human focused ECM on TLC model.

4.5.1 Triangulation of Data Sources

As in the foregoing chapters evidently shows, participants' observation, in-depth interview, and mining data from documents, all three are data collecting techniques to produce data sources triangulation. These combined sources of data are more

comprehensive, cumulative, creditability, reliability and validity. The researcher has used this triangulation of data sources to compare, contrast, consolidate, integrate and synthesize in order to have succinct, concise, and coherent transcripts for developing a human-oriented ECM on TLC model. The holistic picture of the research effect can now be tabulated in Table 4.1 (page 142).

Numerous transcripts have been interviews with observation sources. The reason is obvious, for in-depth interviews contents are the same as participants' behavior. Next, many of the transcripts are integrated because both data sources contents and meanings are identical such as participant observation data and data mining. Moreover, some of the given reflections after the action review are matching with the participants' observation in the next action cycle. Furthermore, other in-depth interview contents are similar to reflection which came after the action review. Finally, there are several similar contents among in-depth interview, participants' observation, and mining data from document.

Table 4.1
Triangulation of Data Source to Generate Coding

No	Data Source	**Transcripts use for significant statement** (data reduction and induction)	**Open encoding** (conceptualize data)	**Axial encoding** (categorize data)
1	Interview; Observation	Moodle and SharePoint systems administrative colleagues had been trained and supported by Computer Centre colleagues actively.	Support systems' users	Initiative system support
	Interview; Observation	Computer Centre colleagues shall always offer substantial support and recommendation to both Moodle and SharePoint systems administrative colleagues and their end users.	Offering helpful system guidance	
	Observation; Data Mining	CITL colleagues proactively give assistance to novice lecturers when they face doubts and difficulties in using either the SharePoint or Moodle systems.	Proactively train novice users	
2	Observation	Computer Centre colleagues standing by to end users complaints on inconvenience of accessing SharePoint system.	Alternative approaches	Positive thinking and action
	Interview; Observation	PDA colleagues recognize synchronized TLC updating saves time to compiling the syllabus handbook.	Appreciate others' effort	
	Observation	Computer Centre colleagues are continuously studying both CIMS and CIS to provide quality service.	Learn to make it viable	
3	Interview; Observation	Computer Centre colleagues suggested that any collective action taken needs to consider other people's convenience and benefits	Considering other position and interests	Democratic decision making
	Observation	Faculty colleagues offered feedback to Computer Centre colleagues and make decision together in order to work concurrently.	Consensus-building principle	
	Observation	CITL colleagues adapted their management approach after having learnt the knowledge from Computer Centre and Faculty.	Cooperate with others	
4	Observation; Reflection	Faculty and Computer Centre colleagues are building a rapport relationship with respect and openness while work together on TLC management.	Trust those with whom you have relationship	Intimate friendly communication
	Observation; Reflection	Faculty and CITL colleagues cohesively working on TLC delivery in the Moodle CIMS is increase their intimacy relationship	Cohesive work increasing intimacy	
	Interview; Observation	Computer Centre colleagues shall always notify PDA colleagues before adding a new item to the SharePoint CIS	Communicate with concerns	

Table 4 1 (Continued)

No	Data Source	**Transcripts use for significant statement** (data reduction and induction)	**Open encoding** (conceptualize data)	**Axial encoding** (categorize data)
5	Observation; Data Mining	Top management instructed all lecturers regardless of their being full- or part-time that they must be prepared to conduct TLC before semester start.	Sponsoring TLC preparation	Continuous executive sponsoring
	Interview; Observation	Top management sponsored the facilitating session to enhance the creation of better TLC.	Reinforces quality TLC authoring	
	Observation; Data Mining	Top management helped to acquire a SharePoint server for centralize TLC preserving.	Provide funding for TLC preservation	
6	Observation	Deans and department heads lead colleagues to work together in order to keep TLC up-to-date	Leads collective action	Leads to collaboration
	Observation; Reflection	Collaborators acted as a bridge to communicate with various departments' colleagues.	Connects various departments	
	Interview; Observation	Deans and department heads become role models in knowledge exchange by sharing their TLC.	Serves as a role model for sharing knowledge	
7	Interview; Observation	CITL colleagues engaged student to help novice lecturers to create and develop TLC.	Encourages TLC development	Enlightening collaboration practice
	Interview; Observation	Faculty colleagues have their superiors as role model for ECM on TLC.	Offers practice on collaborative leadership	
	Observation	CITL colleagues used past and existing TLC as guide and the template to facilitate novice lecturer.	Is convenience to learn	
8	Observation	Colleagues are keen to cooperate and balance the workload of managing their TLC in SharePoint server.	Brainstorms to attain a collaborative approach	Coaching collaboration skills
	Observation; Data Mining	Train faculty colleagues to understand how SharePoint helps them reduce their workload.	Resolve misunderstanding	
	Interview; Observation	SharePoint is reduced colleagues' email communication and minimizing miscommunication.	Breakthrough collaborative barriers	
9	Interview; Reflection	A process that appreciated recognizes and rewards collaboration can reinforce a culture of cooperation.	Foster a collaborative culture	Facilitating collaboration system
	Interview; Observation	The adoption of CIS eased online collaborative authoring, reviewing and updating.	Builds a capacity for collaboration	
	Observation; Reflection	The context of collaboration fitted the organizational management structure, process and contents to ease cooperation.	Refining collaboration protocol	

Table 4 1 (Continued)

No	Data Source	**Transcripts use for significant statement** (data reduction and induction)	**Open encoding** (conceptualize data)	**Axial encoding** (categorize data)
10	Observation; Reflection	Most difficulties have immediately solved and better result attained when colleagues work together.	Attaining immediate gains through collaboration	Cultivating an interest in collaboration
	Interview; Observation	Showed colleagues the sense-making of collaboration benefits.	Demonstrates the benefits of collaboration	
	Reflection	Developed collaborative practice through mentoring to increase the strength of joint action in TLC management.	Develops joint force strengths	
11	Interview	Computer Centre colleagues suggested annual appraisal of collaboration efforts among cooperation colleagues.	Increase salary increments through appraisal	Appreciation shown by rational monetary reward
	Interview	CITL colleague suggested a special bonus be given to those colleagues who contribute input in TLC management.	Gives bonus for cooperative contributions	
	Interview	Faculty colleague proposed monetary incentive to those lecturers who actively assist others and share the faculty administrative workload.	Compensate for workload sharing	
	Interview	CITL colleagues recommended top management to offer additional monetary incentive to those lecturers who developed attractive and quality TLC.	Give monetary incentive to the deserving	
12	Interview; Reflection	Computer Centre colleague recognized that they need to learn from each other to make SharePoint data sharing secure and reduce Exchange server workload.	Supplements deficiencies	A complement to weaknesses and deficiencies
	Interview; Observation	PDA colleagues acknowledged synchronized TLC updating saves time when compiling a syllabus handbook.	Compensates for weaknesses	
	Interview; Observation	Faculty colleagues admitted that collaborative TLC management can make reference and improve their TLC.	Compensates for insufficiency	
13	Interview; Observation	Faculty deans, department heads and CITL colleagues responded that collaborative TLC authoring greatly advance their personal knowledge and skills.	Improve individual capabilities	Career and competence growth
	Interview; Observation	Faculty colleague acknowledged that their proficiency grew when they engaged in collaborative TLC management.	Proficiency grows mutually	
	Observation	Novice lecturers had chances to learn and create TLC from CITL colleagues when there is collaborative management of TLC.	Creates more opportunities	

Table 4 1 (Continued)

No	Data Source	Transcripts use for significant statement (data reduction and induction)	Open encoding (conceptualize data)	Axial encoding (categorize data)
14	Interview	Faculty colleague hoped top management has mutual respect and appreciation for TLC being intellectual property.	Appreciates mutual contributions	Fair mutual contribution and benefits
	Interview; Observation	CITL and faculty colleagues have appreciated TLC sharing and the consultation that improved the quality of curriculum delivery.	Appreciate cooperative efforts	
	Interview	Computer Centre colleagues mentioned that the reciprocate process encourages colleagues to help each other more and quickly attain better collaborative results.	Reciprocate mutual interests	
	Interview	Faculty colleagues admitted personal career objectives have to align themselves with faculty and HEI collaborative teaching goals	Resolve individual misunderstandings	
15	Interview	CITL colleagues stated that collaborative management of TLC cultivates a sense of belonging among teachers.	Build a sense of belonging	Sense of belonging and gains
	Interview; Observation	Faculty colleagues have a sense of being in the same boat and voluntarily helping others work collaboratively to enhance their faculty's TLC.	Creates a sense of being in the same boat	
	Observation; Data Mining	When CITL and faculty colleagues assisted each other to improve the teaching and learning context, it developed a curriculum quality and means of delivery that meet university college standards.	Encourages organizational membership behavior	
16	Interview; Observation	Faculty colleagues prepared and updated their TLC for review before conducting classes.	Readiness exists for TLC delivery	Accumulating teaching and learning resources
	Interview; Observation	Computer Centre, PDA, CITL and faculty colleagues agreed to standardize the TLC material on both Moodle and SharePoint servers.	Standardizes the organized TLC	
	Observation; Data Mining	Faculty colleagues utilized their PC's share folder to review their TLC before uploading to Moodle for delivery and SharePoint for academic e-portfolio preservations.	Securing TLC preservations	
17	Interview	Faculty colleagues noted that various professional sharing, discussing and amending TLC enhance their skills and knowledge.	TLC sharing leverages knowledge	Knowledge exchanging and leveraging
	Observation; Data Mining	Faculty colleagues acquired the best TLC samples and templates to learn how best to improve continuously their TLC presenting to students.	TLC benchmarking brings important advantages	
	Observation	Faculty and CITL colleagues collaborative authored and developed TLC, and then collaboratively teach and learn for conducting the lessons.	Improves collaborative teaching and learning	

Table 4 1 (Continued)

No	Data Source	Transcripts use for significant statement (data reduction and induction)	Open encoding (conceptualize data)	Axial encoding (categorize data)
18	Interview; Observation	Faculty colleagues frequently updated their subjects' portfolio according to market requirements, which enriched TLC contents and its delivery.	Provide adequate development of TLC	Qualified syllabi and content
	Interview; Observation	Faculty colleagues' draft improved and delivered their TLC according to syllabus requirement established by MQA.	TLC satisfy quality audits	
	Interview; Observation; Data Mining	CITL colleagues accepted recommendation from faculty colleagues to standardize TLC folders names and its structure for ease access.	Presenting organized TLC	
19	Interview; Observation	Standardize subject names are established for easier locating by faculty colleagues and students.	Collaborative TLC updating	Comprehensive curriculum improvement
	Interview; Observation; Data Mining	Deans and department heads needed to review lecturers' weekly TLC before the semester starts.	Benchmarking helps create quality TLC	
	Observation; Data Mining	Faculty colleagues aggressively reviewed and updated their TLC to make them excellent for curriculum delivery.	Enhance TLC through regular review	
	Observation; Data Mining	CITL colleagues conducted a TLC drafting, developing, and updating workshop for all lecturers.	Training for TLC crafting	
20	Observation	The HEI group of talents from various departments provided their skills and knowledge to collaborative TLC management.	Differentiated collaborative management	Organizational competitive advantages
	Interview; Observation	Faculty colleagues suggested that cohesive effort to proliferate TLC content and delivery.	Collaboration enhancing capacity	
	Interview	CITL colleague acknowledged that those TLC created during office hours should be considered as HEI intellectual property and assets.	Accumulates organizational advantage	

4.5.2 Constructing Categorical Themes

The researcher had fostered reflections and learnt from the described interviews, observations, and documents mining. The follow factors are well taken care of credibility and coherent data. The researcher has also categorized these data by using

the grounded theory method as described in Chapter Three (especially section five "data analysis process"). The coding paradigm of Boeije (2010) has been used as the model for organizing the data. It consists of four discriminative elements: context, conditions, interaction/strategies and consequences. These elements satisfy the mutually exclusive and collectively exhaustive (MECE) condition as stated in Chapter Three.

First, the researcher has categorized the bulk of interviews data into significant statements, giving due attention to its reliability and relevance. To these statements, he also applies code labels and develops categories to generate an open coding system that is based on terms and concepts. The decomposition, assessment, examination, contrast, comparison, conceptualization and categorizing of the contents emerge eventually as core categories of the conceptual components. These coding refines significant statements into a few words such as shared common goal, mutual interests, mutual respects, etc.

Second, the sets of word labels in the open coding had been explored further for the relationship between categories to assemble them into an axial coding that is based on categorized contents with related or relevant categories which are able to emerge as concepts. They describe and delineate categories by open coding. They also determine categories and increase the level of conceptual abstraction. Besides, they categorize open coding into axial coding (Table 4.2, page 149). These are "initiative system support", "positive thinking and action", "democratic decision making", "intimate friendly communication", and "continuous executive sponsoring" with the subgroup

attribution of “cooperative working behavior” in axial coding. All these fall within the attributes of human behavior attributes that are inherent to their working behaviors.

It should not leave mentioned that “guidance collaborative process” of axial coding comprises the “leads to collaboration”, “enlightening collaboration practice”, “coaching collaboration skills”, “facilitating collaboration system”, and “cultivating an interest in collaboration”. They belong to the action taken with regard to ECM on TLC activity. The researcher, as convener and facilitator had, assisted and guided of the colleagues to accomplish ECM on TLC for their faculty. Moreover, “substantial reciprocal practices” in axial coding combine the phenomenon attributes of the stimulus elements to include “appreciation shown by rational monetary reward”, “complement to weaknesses and deficiencies”, “career and competence growth”, “fair mutual contribution and benefits”, and “sense of belonging and gains”. They are indeed intangible and tangible inducements that motivate colleagues to sustain autonomously and to improve continuously improve their e-collaboration TLC management practice.

Table 4.2
Coding Table of ECM on TLC

	Axial coding (Subcategories pattern)	**Selective coding (Dimension, Individual Group Categories)**	**Theoretical coding (Major Group Category)**
1	Initiative system support (Context)	Cooperative working behavior is the Enabler to process performance (Human characteristic)	Foster collective action practice (Process group)
2	Positive thinking and action (Context)		
3	Democratic decision making (Context)		
4	Intimate friendly communication (Context)		
5	Continuous executive sponsoring (Context)		
6	Leads to collaboration (strategy/interaction)	Guidance collaborative process is the Facilitator of the lubrication process (Intervention strategies)	
7	Enlightening collaboration practice (strategy/interaction)		
8	Coaching collaboration skills (strategy/interaction)		
9	Facilitating collaboration system (strategy/interaction)		
10	Cultivating an interest in collaboration (strategy/interaction)		
11	Appreciation shown by rational monetary reward (Condition)	Substantial reciprocal practices are the Mechanisms for the stimulus process (Individual benefits)	Work toward common objectives (Consequences group)
12	A complement to weaknesses and deficiencies (Condition)		
13	Career and competence growth (Condition)		
14	Fair mutual contribution and benefits (Condition)		
15	Sense of belonging and gains (Condition)		
16	Accumulating teaching and learning resources (consequence)	Conclusive common goals are the Driver to energize process (Organizational objectives)	
17	Knowledge exchanging and leveraging (consequence)		
18	Qualified syllabus and contents (consequence)		
19	Comprehensive curriculum improvement (consequence)		
20	Organizational competitive advantage (consequence)		

It must also be reiterated that "conclusive common goals" is by far ECM on TLC's objective. The axial coding factor embraces "accumulating teaching and learning resources", "knowledge exchanging and leveraging", "qualified syllabus and content", "comprehensive curriculum improvement", and "organizational competitive advantage" which are the five objectives are ECM on TLC. The objectives are not only KUS is weapon for competitive advantages, but are also it used for individual's competence and self-development. It is an all win solution that enables everyone to benefit from "Conclusive common goals". Thus, one must stress that KUS colleagues are more than willing to share their ECM on TLC responsibly for the sake of their faculty and themselves.

These axial coding categories, in short, differentiate ECM on various TLC contexts, strategies, conditions, and consequences. The context is related to KUS work culture, its colleagues' inherent experience, collaborate relationships, and other related environment factors. The strategy and human interaction categories are more meaningful to ECM on TLC execution process dimensional factors. The conditioned category is indeed a cause-and-effect relationship that plays a major role that impacts what should happen as the results. The consequence category presents an alternative solution for the outcomes and effects.

Third, the categorized concepts in axial coding also collect the core categories into selective coding patterns through inductive and deductive subgroups which are associated with properties and dimensions, conditions, context, strategies and consequence that eventually emerge as densely saturated core categories. These core

categories (Figure 4.1, page 152), are “cooperative working behavior”, “guidance collaborative process”, “substantial reciprocal practices”, and “conclusive common goal”. They are fully conceptualized according to the above mentioned context, strategy, condition, and the consequence of PAR. In short, the selective coding discriminates among different kinds of perspectives include human characteristics, intervention strategies, individual benefits, and organizational objectives.

As Karl Wiig’s (2011) has aptly summarized that Knowledge Research Institute has successfully developed a systemic model which shows how an enterprise can perform well by using four primary factors that are human oriented, they are: drivers, enablers, facilitators and mechanisms. The four factors have properly aligned logical coverage to enhance an enterprise’s effective performance. The above findings by Wiig is comparable to the researcher who has developed a theoretical model of “cooperative working behavior”, “conclusive common goals”, “guidance collaborative process”, and “substantial reciprocal practices” four human-perspective factors. That is to say, the researcher is fostering the collective action toward common objectives of making an effective ECM on TLC.

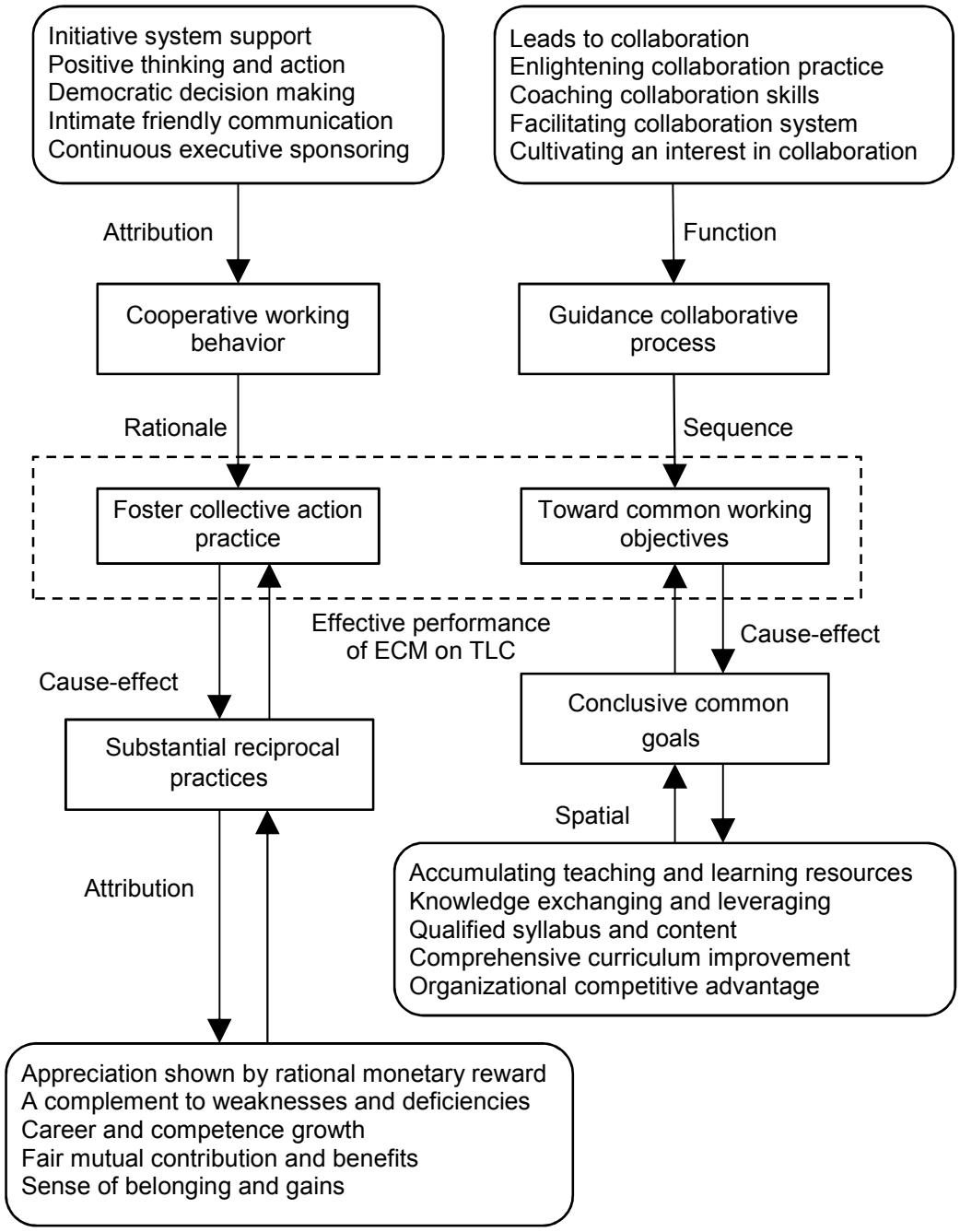


Figure 4.1
Constructing Categorical Theme of ECM on TLC

To elaborate the points, it is evident that “cooperative working behavior” consists of “initiative system support”, “positive thinking and action”, “democratic making decision”, “intimate friendly communication”, and “executive continuous sponsoring” all are inextricably the enablers that provide positive direction, proper course, content, quality and effectiveness of action. “conclusive common goals” consists of “accumulating teaching and learning resources”, “knowledge exchanging and leveraging”, “qualified syllabus and contents”, “comprehensive curriculum improvement”, and “organizational competitive advantage” all of which are the major drivers that provide needs, goals, energy, and impetus to action.

It must not be neglected that “guidance collaborative process” consists of “leading collaborative working”, “enlightening collaboration practice”, “coaching collaboration skill”, “facilitating collaboration system”, and “cultivating collaboration interest” all of which are categorized as the facilitators that serve as lubricants to alleviate foreseeable tension that works against both action and support action. “Substantial reciprocal practices” consists of “appreciation with rational monetary reward”, “complement weaknesses and deficiency”, “career and competence growth”, “fair mutual contribution and benefits”, and “sense of belonging and gains” are safely speaking the mechanisms that make it possible for actions to take place.

4.5.3 Synthesizing the Categorical Themes

By far there are four aspects to compare and contrast findings from previous research findings, models, and theoretical frameworks. First, the researcher has successfully compared the selective coding factors which are consistent in previous findings which support human-focused ECM on TLC. Second, the researcher has also examined the selective coding factors for similarity in findings which establish a human-focused ECM on TLC model. Third, the researcher has also contrasted the selective coding factors differentiation in previous findings in order to reveal the prospective factors of a human-focused ECM on TLC model. Fourth, the researcher has also made necessary contrasts as to the selective coding factor alternatives in previous scholarly findings in order to complement and enhance human-focused ECM on TLC model.

As shown in the Table 4.3 (page 155), there are "initial collaboration condition", "strategies to collaboration process", "sustain and improve collaboration", and "enabler intentions to collaborate" which serve as the four dimensions of individual groups in selective coding. They can be compared and contrasted with findings in earlier studies. These nuts and bolts of dimensional variables are very useful to us to construct a theoretical framework for developing a human-focused ECM on TLC model. First, "initial collaboration condition" is "cooperative working behavior" in KUS participatory ECM on TLC action research. Previous scholarly research has covered "trust-building", "commitment to process", "shared understanding", "collaborative values", "collaboration ideas", "external pressure", "authority positions", and "trust & mutuality". As aptly suggested by Ansell and Gash's (2007), these are all closely

related as the alternative antecedent factors to the collaboration process as starting condition.

Table 4.3
Categorical Theme Compare and Contrast with Previous Models

Dimension of selective coding	**Initial collaboration condition**	**Strategies to collaboration process**	**Sustain and improve collaboration**	**Enabler intentions to collaborate**
Data categories collected from field	Cooperative working behavior	Guidance collaborative process	Substantial reciprocal practices	Conclusive common goals
Ansell and Gash's (2007) 'Collaborative Governance Theory'	Trust-Building; Commitment to process; Shared Understanding	Face-to-face dialogue;	Intermediate outcomes	
Kezar and Lester (2009) collaborative context in HEI	Collaborative values, collaboration ideas, external pressure; authority positions	Collective strategies facilitates leadership	Redesigning integrated structures, process and rewards	Organizational mission, vision, and educational philosophy
Walsh and Kahn (2010) collaboration model	Fostering the engagement of others; Enthusiasm & commitment;	Virtual identities & engagements;	Trust & mutuality in HEI	

Second, the strategies for the collaboration processes which the researcher has outlined adequately are "guidance collaborative processes" in KUS participatory ECM on TLC action process. Previous scholarly studies have shed enormous light upon the present study in the following findings: "face-to-face dialogue", "collective strategies", "facilitates leadership", and "virtual identities & engagements". These collaborative processes demonstrate close affinity to one another in skills (know-how) to steer collaborative members to move forth and back on the same plane. The convener's role is vital in this participatory action process, he serves not only as a leader but also as a helper to complement weakness to provide a learning opportunity, enhance ICT skill,

tolerate negligence, minimize inconvenience intervention, and eventually to resolve conflicts in ECM on TLC.

Third are equally relevant is the findings that “sustain and improve collaboration” is “substantial reciprocal practices” in KUS participatory ECM on TLC action improvement. Previous studies have unveiled conveniently the “intermediate outcomes”, “redesigning integrated structures and process and rewards”, “fostering the engagement of others”, and “enthusiasm & commitment”. Sustained purpose is to maintain persistently the practice and to improve it further. There are undoubtedly comparable and consistency factors to make collaboration even sturdier. These factors are motivational and they must endure over changes in time, people and the internal and external environment. KUS had best created an administrative motivation policy on substantial reciprocal practices in monetary compensation that encourages appreciate collegial dedication and attracts more volunteers to participate in ECM on TLC.

Last but not least, the findings of “Enabler intentions to collaborate” which is “conclusive common goals” for KUS participatory ECM on TLC. Previous contributions already underscored the importance of “organizational mission”, “organizational vision”, and “educational philosophy”. All organizations must be able to forge their own purposes, which are deem the critical factors in recruiting employees from different fields of professional knowledge. There is a tie-in between skilled people who work together and the setup of the organizations. The goal of the participatory ECM on TLC action research and practice is identical in organizational vision and mission but they also show difference in the sequence “conclusive and common” in

coming before "organizational vision and mission". Thus, it is pertinent to have goals acceptable to all for there are critical factors to be taken seriously before the colleagues are grouped to work together in ECM on TLC.

To bring the research to full circle, it must be claimed that all the four dimensions of individual groups in selective coding have then been realized in the research, which aims to develop a collaborative TLC management model. They are appropriate in answering the research questions which the researcher raised at the initial stage: "What are the motivating factors in KUS ECM on TLC environment? Why use these factors to promote KUS ECM on TLC process? And how do these factors inspiring KUS ECM on TLC practice?" The motivation factors, as the researcher has sufficiently answered, are "substantial reciprocal practices" and "conclusive common goals" to motivate an individual and KUS organization ECM on TLC environment, whereas "guidance collaborative processes" and "substantial reciprocal practices" are meant to promote KUS ECM on TLC process. "Cooperative working behavior" and "guidance collaborative processes" are to inspire KUS e-collaborative practices.

4.5.4 Developing a Theoretical Model

The human-focused ECM on TLC model has been originated from observation field notes, interviews transcripts, and data mining summary. The evolution of the initial progress is based on the significant statements from informants gathered from four different departments. The researcher sorts out the four core categories of selective coding as its next step. Then, the researcher conceptualizes these categories by cross-

referencing with the existing literature on theoretical sampling in order to create a substantive theoretical model. Finally, the theoretical model belongs to the scaffolding dimension of ECM on TLC. All these dimensions are grouped into "individual group categories". The "major group category", for example, involves grouping codes with similar attributes into broad categories.

The relationships of these "individual group categories" and "major group category" and are fully utilized to construct ECM on TLC causal relationship networks. The "foster collective action practice" is "major group category" which includes similar dimensions of "cooperative working behavior" and "guidance collaborative processes" with "individual group categories" to inspire an ECWE. "Work toward common objectives" is another "major group category" that consists of "substantial reciprocal practices" and "conclusive common goals" to sustain ECM on TLC practice. Both the major group categories are composed of the final group category of "effective performance of ECM on TLC". The final category is the goal of ECM on TLC in KUS.

According to Roulston (2010), the semantic relationship types have strict notions of inclusion, which include spatial, cause-effect, rationale, location for action, function, means-end, sequence, and attribution. The semantic relationship among ECM on TLC "major group category" and "individual group categories" are demonstrated in Table 4.2 (page 149). "Cooperative working behavior" also contributes to the relationships that inspire ECWE. "Guidance collaborative processes" contributes to the sequence relationships to inspire ECWE. "Substantial reciprocal practices" and "conclusive

common goals" contributes to the cause-and-effect relationships to sustain ECM on TLC practice, as shown in Figure 4.2 below.

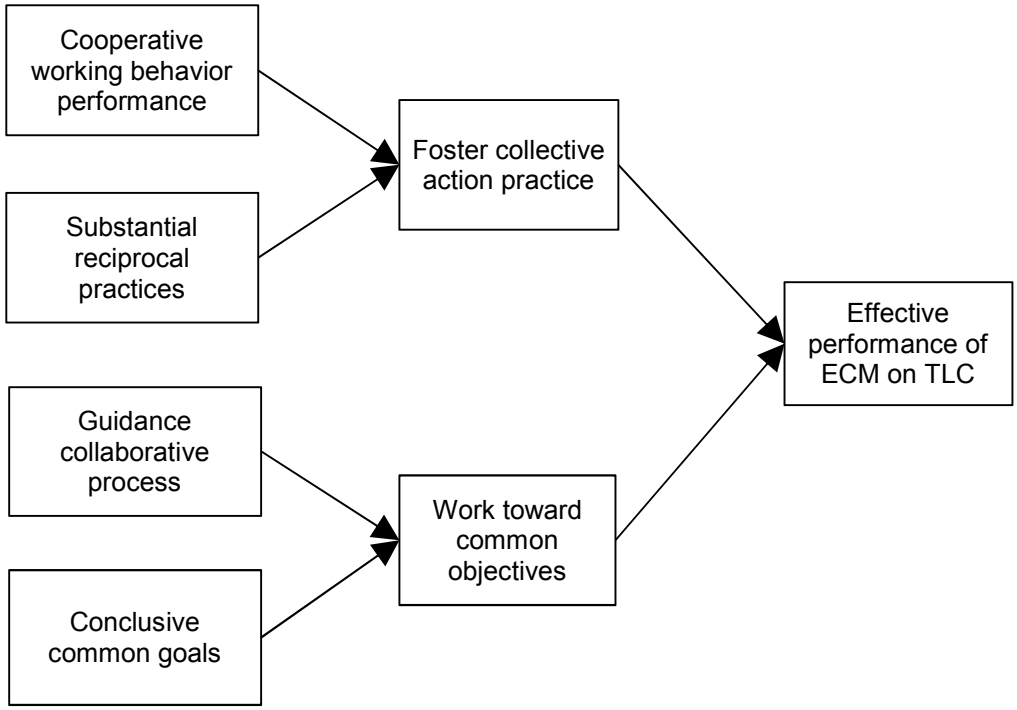


Figure 4.2
A Human Focused ECM on TLC Model

4.6 Summary

The present chapter deals with the way in which PAR is applied organization in order to develop a human oriented model of ECM on TLC. There are three improvement cycles that are used namely advocation, adaptation, and alignment to make organizational TLC management changes. Participant reactions as the researcher has adequately shown are positive due to the use of appreciative inquiry approach in advocating cycles. The adapting cycle provides, in addition, the participants who learn ECM on TLC with the

Moodle CIMS and SharePoint CIS. Such endeavor also enables therefore the transformation of collaborative behaviors in aligning cycle after Moodle CIMS and SharePoint CIS had been learnt.

It must also be mentioned that participant observation data, in-depth interview data and mining data from documenting these three sources of data process with compare, contrast, synthesize, and had also been transformed into significant statements. The researcher had utilized grounded theory procedure to sort significant statements into open coding and to succeed open coding contents into categorized axial contents coding had been assembled, all of which had been selected according to the "cooperative working behavior", "guidance collaborative process", "substantial reciprocal practices", "conclusive common goals" and the four "individual group categories" as the core categories.

In addition, to the above the findings in the previous chapters have incorporated these core categories into "foster collective action practice" for the process major group category, "work toward common objectives" for the consequence major group category, and make final category of "Effective performance of ECM on TLC" in KUS a viable option.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Introduction

The research on ECM vis-a-vis will only come to a full circle after the following pertinent issues are adequately considered. In the previous chapter, the researcher has grappled with the issues of the deployment and importance of test-case vis-a-vis PAR. The remaining task is to summarize the findings that are based on the qualitative analysis of the research data, which appear in the forms of discussion, conclusion, and recommendation. So the final chapter will discusses the research process, response research questions, speculates on research impact, articulate research constraints and to suggest potentialities in future research.

Although one may conveniently aver that collaborative studies among individuals or between organizations are mature in the previous literature, social societies and technology are constantly changing. However tasks and problems have become more sophisticated. Previous research findings are insufficient to satisfy current electronic information age requirements. Therefore, the researcher utilizes PAR to ECM on TLC as a case study, and explores in depth on how to motivate people to contribute in collaborative management when engaging with new CIS and technology.

The recommendations intend to offer point in a new direction for research and call for the creation of better research opportunities, protocols, coordination, and relationships. The success of fieldwork research requires a great many environmental elements to support its findings, all of which a researcher cannot neglect. Further research might

well be carried out to determine the most effective way to inspire e-collaborative action in management studies. These would not only transform an organization's collaborative work, but also contribute to knowledge concerning how tangible transformation might best be achieved.

5.2 Discussing Research Process

Good action research quality includes: studying quality, effectiveness of action implementation, validity of the topic investigated, trustworthiness of data, credibility of facts, and workability of solution (Herr & Anderson, 2005). This PAR derived its data sources from participants' behavior observation, in-depth interview with participants, and mining data from documents; for example, informants from the CCO colleagues telling the researcher that they have taken the initiative to employ the SharePoint CIS, their action behavior are the same as that from observation, and the actual support document also required then to secure and restore SharePoint's content after SharePoint database corrupted. The researcher has also conducted several in-depth interviews with the relevant participants until no other contents to be collected. This exhibits triangulation of the data sources, data saturation and has obtained validity from this activity.

The researcher has functioned as director of CCO and participated in the present study as ECM on TLC convener. The present study is based on the inter-subjective paradigm so as to interpret the informants' answers, artifacts, and behavior. For example, the researcher has taken CCO subordinate colleagues' advices to describe in details why

KUS need ECM on TLC to other faculties and departments colleagues. The researcher has also accepted the academic dean's proposal on how to distribute TLC management tasks to faculties' colleagues. These actions support the researcher's contention that the present study has democratic validity for the participants, who function in an organizational environment.

It is noteworthy that the implementation of the present study is enhanced with the assistance of the right participants, right periods of time, and right functional departments. The CITL and CCO departments' colleagues are critical for ECM on TLC support. The academic colleagues need their departmental head to be the leader in promoting this ECM on TLC. Thus, the engagement of critical participants and their input really help to overcome all ECM on TLC process barriers. Next, the researcher PAR's knowledge and skills in resolving practical PAR problems progressively unfold by developing the three continuous PAR improvement cycles. Furthermore, this commitment has contributed much to process validity in the present study.

The academic dean and department heads respectively have learned that collaboration synthesizes the effort to manage TLC quality and realize ECM on TLC in order to increase their quality of curriculum. The KUS senior management team is sponsoring organizational support to implement ECM on TLC by encouraging part time and full time lecturers to upload their TLC in weekly schedule format or by a topic format in Moodle CIMS before the beginning of the semester. The researcher has made the planning, action, and inquiry comfortable and challenging, but not threatening; tried to elicit deep and broad responses; kept the interviews relatively structured, but allowed

for flexibility and spontaneity; and carefully considered the rights and feelings of the respondents, as aptly suggested by Sagor (1993). Moreover, the researcher and KUS colleagues have leveraged the efficiency of ECM on TLC through the lessons learnt from three continuous PAR reviews and reflections that have contributed to the catalytic validity for this research.

As mentioned, the researcher has conducted the present study from an inter-subjective perspective to suit the ECM topic. Next, the researcher arranges the data in proper order and applied the advocating, adapting, and aligning three cycles of PAR process to minimize flaws in the study process. Based on an inter-subjective perspective, the researcher proceeds to observe, listen, investigate, review, and reflect upon the field of study. Lastly, the researcher uses the grounded theory coding approach to analyze the collected sources by comparing, contrasting and synthesizing them with the previous literature. The aforementioned have been used to fulfill the internal validity of the research design and its quality.

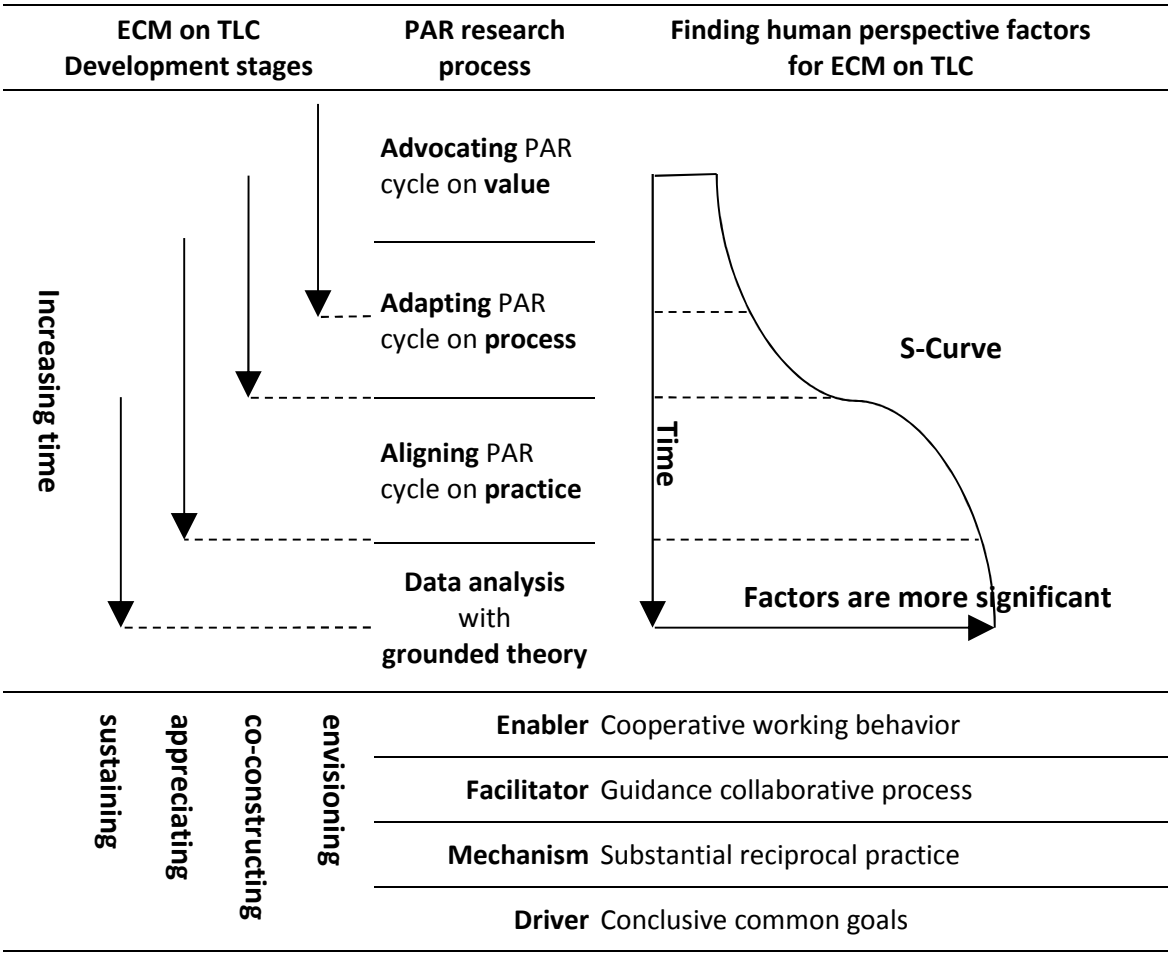
According to Bushe (2013), the appreciative inquiry is the precursor of organization study and the management based movement's strength. For this reason, the appreciative inquiry approach has been used to assist the three PAR improvement cycles in order to validate their appropriateness in this research's context. The researcher has also applied the appreciative inquiry technique to ensure that the ECM on TLC practice is comprehensible, integral, authentic, truthful, and appropriate for serving HEI context, which is to insure social validity (McNiff & Whitehead, 2009). The ladder of inference used in the present study of ECM on TLC is to achieve comprehensibility. Each action

review and reflection is used to validate compliance authenticity. The grounded theory method of data analysis is used to ensure truthfulness.

The Table 5.1 (page 166) shows the relationship among research data analyses and development that is validated by this research process. "Cooperative working behavior", "guidance collaborative processes", "substantial reciprocal practices", and "conclusive common goals" are four ECM on TLC factors that become more significant and effective in enhancing ECM on TLC efficiency and increasing research reliability, validity and generalization such as S-curve.

This PAR has resolved problems that are related to insufficient TLC accumulation and the non-compliance of curriculum audits that contribute to the validity of action research outcome. The selected participant coverage from different academic departments and their colleagues who are deans, department heads, lecturers, and academic supporting colleagues insures external validity, all of which are essential if the findings are to develop a model that is applicable to other scenario or situation in HEI.

Table 5.1
Relationship Among Development Stage, Research Process, and Factors Findings in ECM on TLC



5.3 Answering Research Question

The present study employs the "development of a human focused ECM on TLC model" to determine "how to create, conduct and improve ECM on TLC". The developed model's human-perspective motivation factors are utilized to promote ECM on TLC in a HEI. The first question concerns the motivating factors in HEI ECM on TLC environments, "cooperative working behavior", "guidance collaborative processes", "substantial reciprocal practices", and "conclusive common goals" have all been

determined to be the four core categories that serve as the motivating factors in the HEI ECM on TLC environment. The guidance ECM on TLC process is to allow all participants to focus on "conclusive common goals". This is done in order to make the effects of the whole greater than the sum of the whole. (Shah, 2012).

The second issue that follows is: Why do these factors have competitive advantages in promoting the HEI ECM on TLC process? "Cooperative working behavior" is the participants' empathy in working relationships that generates enthusiasm and devotion in collaborative management. "Guidance collaborative processes" is to direct ECM into the right track, effort, performance, effect and pace. "Substantial reciprocal practices" can fulfill the individual participant own needs and career development. "Conclusive common goals" encourage participants to achieve ECM on TLC objectives whole-heartedly.

Next, how do these factors inspire HEI ECM on TLC practice? They inspire improvement through the four stages of envisioning, co-constructing, appreciating, and sustaining. The envisioning stage promotes individual and HEI competitive advantages. The co-constructing stage helps to develop common goals, adaptation, and collective accountability. The appreciating stage reinforces reciprocal learning, acting, synergizing and leveraging. The sustaining stage systemizes the effective ECM on TLC to become collaborative. As the researcher has shown in Table 5.1 (page 166), these are integrated in order to improve ECM on TLC by means of the findings' four motivation factors, which are designed to foster collective action practice work toward common objectives that will develop ECM on TLC.

5.4 Realizing Research Objectives

The present study has fulfilled the academic knowledge and practical management objectives. Academic knowledge objective constructs a human-focused ECM on TLC model. Practical management objective improves poor TLC to comprehensive organized TLCs for curriculum delivery in KUS. It resolves practical ECM on TLC issue in KUS and develop collaborative working environment.

5.4.1 Filling the Gaps of Academic Knowledge

The value of this ECM on TLC study is it's filling in of academic knowledge gaps as mentioned in Chapter Two, Section 2.4.2 (Table 2.4, page 46). The first gap to be filled in is related to the TLC knowledge-based construct made available to faculties and KUS. KUS and other organization can build their organizational knowledge through this ECM on TLC model. The second gap to be filled is how "conclusive common goals" and "substantial reciprocal practices" have a causal relationship that is based on the economic perspective of social exchange theory (Domenico, Tracey, & Haugh, 2011) which complements the collaboration theory. This means that both factors influence each in making individual interests the same as organizational objectives, which may enhance a sense of belonging (Jaitli & Hua, 2013) and have a centripetal force (Arroba & Wedgwood-Oppenheim, 1995).

The third gap to be filled is the way in which PAR originality with regard to methodology can be applied across KUS different functional administrative departments and faculties in virtual working environments. The researcher plays the role of an

instrument for participating in and experiencing the organization transformation process. The fourth gap is filled by the use of grounded theory to analyze the PAR collected data. In doing so, this research has made adequate use of grounded theory in order to develop a human-focused model of ECM on TLC that clarifies the correlation of collaborative factors, which filled the fifth gap.

5.4.2 Resolving Practical Management Issue

The present study has also uncovered the best theoretical, personal, and workplace-practical practices, as articulated by McNiff and Whitehead (2002). Theoretical practice to minimize of the gap between collaboration theory and practice through converting theoretical collaborative knowledge into new ECM practices for KUS, HEI, or other fields of industrial organizations. There is double learning (Argyris, 1978) through doing the ECM on TLC properly. First comes from a review of the literature that has produced guidelines for ECM on TLC and subsequent reviews for reflections that provide improvement feedback. Next, the task is achieved by doing right from the beginning the three consecutive practical improvements of PAR cycles. Only then, the ECM on TLC model fine-tunes the theory into practice and allows the practitioner to shorten their learning process.

Workplace practices help the employees to have the "cooperative working behavior" factor, which allows KUS to recruit the right employees and employ them in the right way. Such employees will have a positive working attitude and contributive behavior. The "guidance collaborative process" factor requires of the KUS leader that the

researcher lead, encourage and facilitate subordinates to work toward "conclusive common goals" for organization and subordinate themselves. The "substantial reciprocal practices" factor allows KUS to survive and sustain its earning model, so that it is able to share its profits with its colleagues. The colleagues related will in turn help one other to pursue KUS to maximize benefits and returns.

Personal practice is the way in which the KUS colleagues develop on beliefs, values, thinking, behavior, knowledge, and skills. "Cooperative working behavior" is where individuals develop in the processes of unfolding their enthusiasm and the passion in their work that stimulate probably positive working attitudes and behavior. Working in compliance with the "guidance collaborative processes" may enhance the motivation to learn more concerning any project implementation or routine follow-up task. The "conclusive common goals" factor also helps each individual to aim higher in scope and vision when working collaboratively. This in turn generates greater benefits than the sum of all individual effort (Shah, 2012).

The initial effect of the present study is also to encourage most faculty colleagues to recognize that ECM on TLC not only sustain their departmental experience and knowledge, but they also offer an opportunity for knowledge exchange (Ricci & Wiese, 2011) among lecturers. They will become keen to further involve in this ECM on TLC that are based on their hope to access SharePoint when they are off campus. The ultimate outcomes of this study offer an opportunity to develop collaboration practices that are a model for all collaboration. It has therefore positive contribution and impact on KUS in terms of competitive advantages.

5.5 Research Constraints and Limitation

There are four major constraints and limitations in the study. The first is that there are complicated research problems created by the interaction of difficult human being and setting. The second is that PAR resolution methods are difficult to apply to a workplace where turnover rate is high. The third is where organizational changes in its common interests used to take place only in small steps. The fourth is that there are always legal and ethical issues to be considered. The research problem in the present study is complicated by the interaction between participants and their interaction with both the Moodle CIMS and SharePoint CIS. This inevitably involves personnel from different professions and departments with varying functions. Participants are therefore required to learn how to handle new technology. Some participants have difficulty in allocating their learning time, despite the fact that they are willing to cooperate with researcher. Some participants are presumably passive in responding to ECM on TLC because they are inclined to be introvert, shy of communication, or busy in their major role of responsibility.

The ECM on TLC research method undertaken in the present study is suitably applied to small groups. It has been a qualitative case-study learning and realizing project. The present project requires a costly investment in both Moodle CIMS and SharePoint CIS with stable and reliable IT infrastructure. Only the researcher and CCO colleagues were able to settle the technical issue of IT infrastructure and the CIS. Therefore, the PAR is scope into the researcher's pragmatic faculties and makes a small-scale contribution to these faculties' colleagues only. The researcher has attempted therefore his best and secured top management's supports to provide adequate resources such as labor, funds,

time, tools and technology to fulfill ECM on TLC contexts, environments, and settings in PAR.

The limitation of PAR focuses only on what the factors mentioned above that effectively motivate people to reach ECM decisions, but without showing how best these factors are in contributing to the performance of ECM task; and also, what are the important or priority sequence of order to ECM task. This empirical research implements only in one intra-organization of HEI, with focus is on its unstructured TLC data files, and makes ECM across different academic faculties and departments. However, these different departments play different functions and roles to ECM on TLC in KUS. This has been made easier for researcher to allow participants with common interests to make incremental organizational change gradually from small-scale to extensive organizational development.

With regard to legal and ethical considerations, the researcher conducts PAR in a democratic manner, with participants gathering together different ideas and views in order to achieve collective outcome. The researcher, being the facilitator and convener of this PAR project, uses the niche of advocacy to invite relevant KUS colleagues to participate in PAR without enforcement. Top management members have sponsored this ECM on TLC project but have not compelled all lecturers to upload all TLC. Lecturers have only been required to upload sufficient TLC for auditing and teaching purposes.

5.6 Research Implications and Further Recommendations

The implications of the present study are that study processes require personal reflection concerning the lessons learnt from harnessed PAR. Regarding the researcher's personal reflection on his roles in the research process:-

- there is the need to advertise and clarify research objectives clearly in order to bringing both tangible and intangible benefit to the participants;
- the researcher needs to be sincerely and unconditionally humble when inviting participants to engage in this ECM on TLC activity;
- the researcher must play the role to encourage, persuade and coach them into learning new CIS and their technology;
- the researcher has kept his presupposition in check to avoid biases when interviewing participants, observing their behavior, and mining data from their documents and artifacts;
- the researcher needs to examine all collected field works and reassemble it into an informative and well organized model;
- the researcher stands as a totally impartial reviewer when critiquing the results of the finalized model.

The six different roles mentioned are very critical and require unbiased interaction with the participants in order to insure the validity and reliability of the research. Therefore, the quality of PAR is on qualitative and participatory social interaction. It is vitally dependent on the researcher knowledge of the field, study skills, insight regarding people's behavior and their views, inferences and logic as it pertains to judging collected data that is related to human contact and subsequent relationships. The

developed model is tenable and useful, depending on every participant's effort, concern and contribution in PAR. The cognition, value, belief, thought, behavior, action, and feedback as provided by the participants who have deeply influenced the PAR outcome and the development of a tenable human-focused ECM on TLC model.

From the aforementioned, the first helpful reflection is on how to improve the study of ECM for future research concerns how to group professions, recruit right partners, get the timing right, and create the right setting. The correct profession of the participants can have a more reciprocal effect if they effectively complement each other's weakness in resources, knowledge and skills. Right partners are participants who have tangible relationships such as previous successful cooperation experiences, which can strengthen their cooperative interaction. Right timing is necessary for participants as they require mutual opportunity to learn ECM tools and protocol. Right setting is inevitably tied to the above and refers to the environmental condition with minimal external threats that allow the relevant colleagues to focus on collective action.

The second suggestion for further research is that using the onlooker or peer reviews will be more likely to detect and identify slanted biases in the research process, which will have a positive effect on the research and possible adverse outcomes. They will highlight other research issues yet to be discovered, other factors that need to be considered, other more appropriate research methods, seeking further explanations of unanticipated findings, and thereby, explore more usefulness of the developed model, and other inferences drawn from this PAR. This eventually allows for the development

of a more substantial and concrete means for building the best developed model possible.

The third suggestion is to provide alternatives to existing practices and alternative solutions regarding how this ECM model might be improved and then to examine the possible consequences systematically as Wolcott aptly proposed (2009). For example, suggestions for future research is on how the interaction between "guidance collaborative process" and "substantial reciprocal practices"; and finally, to further determine their correlation or causal relationship.

5.7 Some Final Thought on Research Conclusion

The present study process meets research quality and its capacity to develop a reliable as well as viable human-focused ECM on TLC theoretical model. The established model as I have adequately argued, contributes to knowledge objective and the demand of originality. The research question satisfactorily responds to the human-perspective factors. Next, practical research objectives have been achieved by resolving inadequate TLC which is due to ineffective of collaboration and inefficient management on TLC at KUS CIS.

Moreover, this theoretical model can also be used as a prototype for any organizational knowledge construction which looks for better ways to preserve its organizational memory (OM). The PAR approach also allows its researchers to learn by helping their organization members to develop their interests to effect organization change.

Therefore, the opportunity of future research could extend to organizations in other industries' organization for ECM on their OM.

In short, ECM has become the most frequently employed form of management. For the world is becoming smaller ("flatten"), human being are inextricably intertwined and their relationships are becoming more sophisticated, and demands of works need to be accomplished without ostracizing the virtual environment. Next, the collaborative organizations as portrayed in the study, embraces social and collaborative technologies and relevant strategies stand therefore, the best chance of succeeding (Morgan, 2012).

E-Collaborative project creates greater benefits than the sum total of individual work and its benefits can be enormously shared by all (Shah, 2012). Last and the most important it is the claim that ECM practice sustains the effectiveness and efficiency of ECWE and ECM, therefore, this very human-focused ECM on TLC model is well worth the present and future consideration by future researchers and practitioners as it will probably provide a shoulder for them in order to accomplish ECM in various fields, organizations and industries expeditiously.

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